



# Current Affairs (CONSOLIDATION)

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# Polity and Governance

## Highlights

- India Animal Health Summit 2022
- Mission Vatsalya
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- Guidelines to Curb Unfair Advertisements
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- NIRF Rankings 2022
- Coalition for Disaster Resilient Infrastructure (CDRI)
- Decline in Immunisation Coverage

## India Animal Health Summit 2022

### Why in News?

Recently, the Union Minister of Fisheries, Animal Husbandry, and Dairying inaugurated the First India Animal Health Summit 2022 in New Delhi.

- Its India's **first-ever Animal health Summit** organized by the Indian Chamber of Food and Agriculture (ICFA) and the Agriculture Today Group.
- Animal health is a critical component of **One Health**. One Health is an approach that recognizes that the health of people is closely connected to the health of animals and our shared environment.

### What is the Importance of Animal Health?

- The **concept of animal health** covers animal diseases, as well as the interplay between animal welfare, human health, environment protection and food safety.
- Many known **human infectious diseases start in animals**, and climate change, for example, is having a significant impact on their transmission.
- Although not all animal diseases are directly harmful to humans, they can have **significant socioeconomic**

**consequences as some people's occupations and lives are dependent on animal health.**

- 1 in 5 people depend on production animals for their income and livelihoods.
- > 70% additional animal protein will be needed to feed the world by 2050.
- > 20% of global animal production losses are linked to animal diseases.
- The **World Organization for Animal Health (WOAH, formerly known as the OIE)** has listed 117 illnesses. More than 50 wildlife illnesses may have major consequences for livestock and public health, as well as wildlife.
- **WOAH is an intergovernmental organization**, that focuses on transparently disseminating information on animal diseases, improving animal health and welfare globally, and thus building a safer, healthier, and more sustainable world. India is a member.

### What are the Diseases Related to Animals?

- **Monkeypox:**
  - It's a viral zoonotic disease among monkeys cause by infection with monkeypox virus that occurs primarily in tropical rainforest areas of central and west Africa and is occasionally exported to other regions.

Note:



- Monkeypox virus belongs to the Orthopox virus genus in the family Poxviridae.
- **Lumpy skin disease (LSD):**
  - It is a notifiable disease caused by the lumpy skin disease virus (LSDV).
  - It affects cattle and water buffalo, damaging animal health and causing significant production and trade losses.
- **African swine fever:**
  - It is a highly contagious and deadly viral disease affecting both domestic and feral swine of all ages. ASF is not a threat to human health and cannot be transmitted from pigs to humans.
- **The foot-and-mouth disease:**
  - It's a highly communicable disease affecting cloven-footed animals. It is characterized by fever, formation of vesicles, and blisters in the mouth, udder, teats, and on the skin between the toes and above the hoofs.
  - 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:**
  - It 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.
- **Avian Influenza (bird flu):**
  - Avian Influenza, or bird flu as it's commonly known, is a disease of birds. Further Some types of bird flu can pass to people, but this is very rare.

### **What are the Government Initiatives to curb Animal Diseases?**

- **Livestock Health & Disease Control:**
  - For promotion of health of livestock and animals, the Department of Animal Husbandry & Dairying implements a Centrally Sponsored Scheme

“Livestock Health & Disease Control” (LH&DC), which envisages control & containment of economically important animal diseases by providing central financial assistance to the States.

- **National Animal Disease Control Programme (NADCP):**
  - It is a flagship scheme launched by the Prime Minister in September 2019 for the control of Foot & Mouth Disease and Brucellosis by vaccinating 100% cattle, buffalo, sheep, goat, and pig population for FMD and 100% bovine female calves of 4-8 months of age for brucellosis.
  - Objective is to control Foot & Mouth Disease (FMD) by 2025 with vaccination and its eventual eradication by 2030.

## **Mission Vatsalya**

### **Why in News?**

Recently, the central government issued guidelines to states about the Mission Vatsalya child protection scheme

### **What are the New Guidelines?**

- According to the guidelines, **states cannot change the original name of the scheme in order to gain access** to funding granted by the central government.
- Funds to states will be approved through the **Mission Vatsalya Project Approval Board (PAB)**, which will be chaired by the **WCD Secretary**, who will **scrutinise and approve annual plans and financial proposals** received from states and UTs for release of grants.
- It will be implemented as a **Centrally Sponsored Scheme** in partnership with state governments and UT administrations, with a fund-sharing pattern in a 60:40 ratio.
  - However, for the **eight states in the Northeast** — as well as Himachal Pradesh, Uttarakhand and the UT of Jammu and Kashmir — the Centre and state/UT's share will be 90:10
- MVS, in partnership with states and districts, will **execute a 24x7 helpline service for children**, as defined under Juvenile Justice Act, 2015
- It will support **State Adoption Resource Agencies (SARA)**, which will further support the **Central Adoption Resource Authority (CARA)** in **promoting in-country adoption and regulating inter-country adoption.**

Note:



- SARA shall **coordinate, monitor and develop the work related to non-institutional care, including adoption in the state.**
- The Mission plans to **establish cradle baby reception centers in at least one specialized adoption agency in each area** for receiving abandoned and trafficked children
- Children in need of care, as well as **special needs children, will be placed in distinct homes based on gender (including separate homes for transgender children) and age.**
  - As they are unable to attend school due to physical or mental disabilities, these institutions will provide **special educators, therapists, and nurses to impart occupational therapy, speech therapy, verbal therapy, and other remedial classes.**
  - Further, employees in these specialised divisions must be fluent in sign language, Braille, and other related languages.
- **Establishment of open Shelters** by the state government will be supported to care for runaway children, missing children, trafficked children, working children, children in street situations, child beggars, child substance abusers etc.
- **Financial support** has also been prescribed for **vulnerable children living with extended families or in foster care, supporting their education, nutrition, and health needs.**

### What is Mission Vatsalya?

- **Historical Perspective:**
  - Prior to 2009, the **Ministry of women and child development** Implemented **three schemes for children in need of protection,**
    - The juvenile justice programme for children in need of care and protection as well as children in conflict with the law,
    - The integrated programme for street children,
    - The scheme for assistance to children's homes.
  - In 2010, these were merged into a single plan known as the **Integrated Child Protection Scheme.**
  - In 2017, it was renamed "**Child Protection Services Scheme,**" and again in 2021-22 as **Mission Vatsalya.**
- **About:**
  - It's an **umbrella scheme for child protection services in the country.**

- **Components under Mission Vatsalya include** improve functioning of statutory bodies; strengthen service delivery structures; Upscale institutional care and services; encourage non-institutional community-based care; emergency outreach services; training and capacity building.
- **Objectives:**
  - **To secure a healthy and happy childhood for each and every child in the country.**
  - **To ensure opportunities to enable them to discover their full potential and assist them in flourishing in all respects,** in a sustained manner, foster a sensitive, supportive and synchronized ecosystem for development of children, assist States and UTs in delivering the mandate of the **Juvenile Justice Act, 2015** and achieve the **Sustainable Development Goals (SDGs).**
  - It promotes **family-based non-institutional care of children** in difficult circumstances based on the principle of institutionalization of children as a measure of last resort.

## Reform in Bail Law

### Why in News?

Recently, the **Supreme Court** underlined that "**there is a pressing need**" for reform in the **law related to bail** and called on the government to **consider framing a special legislation on the lines of the law in the United Kingdom.**

### What is the Ruling About?

- A **two-judge Bench** issued certain clarifications to an **older judgment delivered in July 2021 on bail reform** (Satender Kumar Antil vs CBI).
  - The ruling is essentially a **reiteration of several crucial principles of criminal procedure.**
- Referring to the **state of jails in the country,** where over **two-thirds lodged are undertrials,** the Supreme Court underlined that arrest is a draconian measure that needs to be used sparingly.
- Theoretically, the court also linked the idea of indiscriminate arrests to **magistrates ignoring the rule of "bail, not jail" to a colonial mindset.**
  - **The Code of Criminal Procedure (CrPC)** was first drafted in **1882** and continues to be in use with amendments from time to time.

Note:



### What is India's Law on Bail?

- The CrPC does not define the word bail but only categories offences under the Indian Penal Code as 'bailable' and 'non-bailable'.
- The CrPC empowers magistrates to grant bail for bailable offences as a matter of right.
  - This would involve release on furnishing a bail bond, without or without security.
- In case of Non-bailable offences, a magistrate would determine if the accused is fit to be released on bail.
  - Non-bailable offences are cognisable, which enables the police officer to arrest without a warrant.
- Section 436 of the Code of Criminal Procedure, 1973, lays down that a person accused of a bailable offence under I.P.C. can be granted bail. On the other hand, Section 437 of the Code of Criminal Procedure, 1973 lays down 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.

### What is Bail Law in the United Kingdom?

- The Bail Act of the United Kingdom, 1976, prescribes the procedure for granting bail.
- A key feature is that one of the aims of the legislation is "reducing the size of the inmate population".
- The law also has provisions for ensuring legal aid for defendants.
- The Act recognises a "general right" to be granted bail.
  - Its Section 4(1) raises the presumption of bail by stating that the law applies to a person who shall be granted bail except as provided in Schedule 1 to the Act.
- For rejecting bail, the prosecution must show that grounds exist for believing the defendant on bail would not surrender to custody, would commit an offence while on bail, or would interfere with witnesses or otherwise obstruct the course of justice; unless the defendant must be detained for his own welfare or protection; or in other circumstances.

### How has the Supreme Court rules on Reforms?

- Separate Law for Bail:
  - The court underlined that the CrPC, despite amendments since Independence, largely retains its original structure as drafted by a colonial power over its subjects.

- The court made this point to signal that despite its rulings, structurally, the Code does not account for arrest as a fundamental liberty issue in itself.
- It also highlighted that magistrates do not necessarily exercise their discretionary powers uniformly.
- Uniformity and certainty in the decisions of the court are the foundations of judicial dispensation.
  - Persons accused with the same offense shall never be treated differently by the same court different courts.
  - Such an action would be a grave affront to Articles 14 and 15 of the Constitution of India.
- The court advocates for framing of a separate law that deals with the grant of bail.
- Indiscriminate Arrests:
  - The court noted that the culture of too many arrests, especially for non-cognisable offences, is unwarranted.
    - It emphasised that even for cognisable offences, arrest is not mandatory and must be "necessitated".
      - Such necessity is drawn to prevent the committing of any further offense, for a proper investigation, and to prevent him/her from either disappearing or tampering with the evidence.
      - He/she can also be arrested to prevent such person from making any inducement, threat, or promise to any person according to the facts, so as to dissuade him from disclosing said facts either to the court or to the police officer.
      - One more ground on which an arrest may be necessary is when his/her presence is required after arrest for production before the Court and the same cannot be assured."
  - It held that lower courts must satisfy that these conditions are met and "Any non-compliance would entitle the accused for grant of bail".
- Bail Application:
  - There need not be any insistence of a bail application while considering the application under Section 88, 170, 204 and 209 of the Code.
    - These sections relate to various stages of a trial where a magistrate can decide on release of an accused.

Note:



- These range from power of the magistrate to **take bond for appearance** (Section 88) to **power to issue summons** (Section 204).
  - The Supreme Court held that in these circumstances, **magistrates must routinely consider granting bail, without insisting on a separate bail application.**
- **Direction to States:**
- The SC also directed all **State governments and Union Territories to facilitate standing orders to comply with the orders and avoid indiscriminate arrests.**
    - The **CBI** has already communicated earlier orders of the Court to special judges under its jurisdiction.
  - This would certainly take care of not only the unwarranted arrests, but also the clogging of bail applications before various Courts as they may not even be required for the offences up to seven years.

#### Legal Framework for 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 Macaulay.
- **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.

#### What Protection does the Constitution provide against Indiscriminate Arrest?

- **Article 20:**
  - **Article 20** provides Protection against indiscriminate arrest by stating that “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:**
  - **Article 21** provides Protection of Life and Personal Liberty
  - Detention of an individual infringes the Right to Life and Liberty guaranteed under Article 21 of Constitution of India.

- **Article 22:**
  - **Article 22** provides Protection Against Arrest and Detention.
  - The first part of Article 22 deals with the ordinary law and includes:
    - 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.

## Financial Direct Assistance to Apprentices Through DBT

### Why in News?

Recently, the **Ministry of Skill Development and Entrepreneurship (MSDE)** announced that the **National Apprenticeship Promotion Plan (NAPS)** would be a component of the **Direct Benefit Transfer (DBT)** scheme, providing all apprentices with direct government benefits.

### What is National Apprenticeship Promotion Plan (NAPS)?

- NAPS was **introduced in 2016**, to promote apprenticeship training nationwide and provide financial support to organisations that offer apprenticeships.
- This helps apprenticeship programmes and brings **Skill India's promise closer to realisation.**
- The programme **aims to** encourage employers to take on apprentices and assist them in finding the proper work responsibilities while maximising their potential through in-depth skill development.
- Over **12 lakh apprentices** are working in various industries as of right now.
- In the past, employers would pay apprentices the whole fee before requesting reimbursement from the government.
- With the introduction of the **DBT programme**, the government would immediately deposit its contribution—**25 percent of the stipend payable up to Rs. 1500 per month**—to apprentices' bank accounts through the **National Skill Development Corporation (NSDC).**

Note:



**What are the Initiatives to Promote Apprenticeships?**

- **Scheme for Higher Education Youth in Apprenticeship and Skills (SHREYAS)**
- **Skills Strengthening for Industrial Value Enhancement Scheme**
- **YuWaah Youth Skilling Initiative**
- **Pradhan Mantri Kaushal Vikas Yojana**

**What is Direct Benefit Transfer?**

- DBT was **introduced on 1<sup>st</sup> January 2013** with the main aim of improving the Government's delivery system and redesigning the current procedure in welfare schemes by making the flow of funds and information faster, secure, and reduce the number of frauds.
- It's the process of directly transferring the subsidy amount and making other transfers directly into the account of beneficiaries rather than providing it to government offices.
- JAM i.e., Jan Dhan, Aadhaar and Mobile are DBT enablers and as on date more than 22 crore Jan Dhan Account, more than 100 crore Aadhaar and about 100 crore Mobile connections provide a unique opportunity to implement DBT in all welfare schemes across country including States & UTs.
- DBT will bring efficiency, effectiveness, transparency and accountability in the Government system and infuse confidence of citizen in the governance.
- Use of modern technology and IT tools will realize the dream of Maximum Governance Minimum Government.

**Youth in India 2022 Report****Why in News?**

Recently, the Ministry of Statistics and Programme Implementation (MoSPI) has released '**Youth in India 2022**' Report, which shows that the population share of the youth is starting to decline whereas the share of the **elderly is expected to increase during 2021-2036**.

- A **sustained drop in fertility has led to an increased concentration of the population at working ages** (between 25 and 64 years) and this shift in the age distribution provides a **time-bound opportunity for accelerated economic growth** known as the "**Demographic Dividend**".

**What are the Findings of the Report?**

- **Decline in Youth Population:** The youth population is expected to increase initially but will start to decline in the latter half of 2011-2036 period.
  - The total youth population increased from **222.7 million in 1991 to 333.4 million in 2011** and is projected to reach **371.4 million by 2021** and, thereafter, decrease to **345.5 million by 2036**.
- **Proportion of Youth and Elderly Population:** Proportion of youth to the total population had increased from **26.6% in 1991 to 27.9% in 2016** and then projected to start a **downward trend and to reach 22.7 % by year 2036**.
  - On the contrary, the proportion of elderly population to the total population has increased from **6.8% in 1991 to 9.2% in 2016** and is **projected to reach 14.9% in 2036**.
- **Scenario in the States:** States such as Kerala, Tamil Nadu and Himachal Pradesh **are projected to see a higher elderly population than the youth by 2036**.
  - Bihar and Uttar Pradesh experienced a rise in proportion of youth population to total population till 2021 and then it is expected to start declining.
  - These **two states, along with Maharashtra, Madhya Pradesh and Rajasthan**, are projected to have over half (52%) of the country's youth.

**What are the Implications?**

- India is **experiencing a demographic window of opportunity, a "youth bulge"**. However, youth come across **various development challenges** viz. access to education, gainful employment, gender inequality, child marriage, youth- friendly health services and adolescent pregnancy.
  - **Youth bulge** refers to a demographic pattern where a large share of the population is comprised of children and young adults.
- A **greater proportion of youth at present will result in a greater proportion of elderly** in the population in future. This will **create a demand for better healthcare facilities and development of welfare schemes/programmes** for elderly people.
- Rise in the share of **elderly population will put pressure on social security and public welfare systems** and the next 4-5 years need to be utilised well to accelerate productive job creation.

Note:



- People, typically in informal employment, **don't have social security**, it will add burden to the respective state.

### What are the Recommendations?

- There is need to **increase share of employment in manufacturing** because people who in current labour force, when they are retire and the share of elderly starts rising in very populous states, then **it will be like a ticking time bomb (a situation that is likely to become difficult to deal with or control)**.
- In the next 4-5 years, there is a need for active labour market policies to be adopted to accelerate productive job creation.
- There is a need to take steps to **adapt public programmes to the growing proportion of older persons**, including by improving the **sustainability of social security** and **pension systems** and by establishing universal health care and long-term care systems.

### What are the Schemes Related to Youth?

- **Pradhan Mantri Kaushal Vikas Yojana**
- **YUVA: Prime Minister's Scheme For Mentoring Young Authors**
- **Integrated Child Development Services (ICDS) Scheme**
- **National Health Mission (NHM)**
- **National Youth Policy-2014**
- **National Skill Development Corporation**
- **Rashtriya Yuva Sashaktikaran Karyakram Scheme**
- **Weekly Iron Folic Acid Supplementation Programme (WIFSP)**
- Scheme for Promotion of Menstrual Hygiene among Adolescent Girls.



## PARIMAN Portal

### Why in News?

Geo-Portal for NCR known as 'PARIMAN', launched in August 2021 by the **National Capital Region Planning Board (NCRPB)** and Union Minister for Housing & Urban Affairs, has been made open to the public of NCR.

### What do we know about PARIMAN?

- **About:**
  - Portal for Analytical Regional Information and Mapping of NCR.
  - Developed through **National Informatics Centre (NIC)**, initially for use by NCR Participating states and the Office of **NCRPB**.
  - It's 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.
    - Layers like 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.
- **Significance:**
  - This Geo-Portal will help to **improve decentralized planning and management** in the NCR region.
  - This Geo-portal is an important platform to **know where and what exists in the National Capital Region (NCR)** that enables better planning.
  - It will help in effective utilization of Remote Sensing and GIS technology.

### What do we mean by Geospatial Technology?

- Geospatial technology uses tools like **GIS (Geographic Information System)**, **GPS (Global Positioning System)**

Note:



and **Remote Sensing** for geographic mapping and analysis.

- These tools capture spatial information about objects, events and phenomena (indexed to their geographical location on earth, geotag). The location data may be Static or Dynamic.
  - Static location data include position of a road, an **earthquake** event or **malnutrition** among children in a particular region while dynamic location data include data related to a moving vehicle or pedestrian, the spread of an infectious disease etc.
- The technology may be used to create intelligent maps to help identify spatial patterns in large volumes of data.
- The technology facilitates decision making based on the importance and priority of scarce resources.

### **What are Government's Initiatives for Urban Planning and Development?**

- **Smart Cities:**
  - It promotes cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and **sustainable** environment and application of Smart Solutions.
- **AMRUT Mission:**
  - It ensures that every household has access to a tap with the assured supply of water and a sewerage connection.
- **Swachh Bharat Mission-Urban:**
  - It aims at making urban India free from open defecation and achieving 100% scientific management of municipal solid waste in 4,041 statutory towns in the country.
- **HRIDAY:**
  - **The National Heritage City Development and Augmentation Yojana (HRIDAY)**, aims to bring together **urban planning**, economic growth and **heritage conservation** in an inclusive manner & with the objective of preserving the heritage character of the city.
- **Pradhan Mantri Awas Yojana-Urban:**
  - It addresses Urban housing shortage among the Urban Poor including the Slum Dwellers by ensuring a pucca house to eligible urban poor.

## **Kisan Credit Card**

### **Why in News?**

Recently, the Union Minister of Fisheries, Animal Husbandry and Dairying reviewed the progress in issuance of **Kisan Credit Cards** to poor farmers from the Animal Husbandry, Dairying & Fisheries Sector with Banks & **Regional Rural Banks**.

### **What do we Need to Know about Kisan Credit Cards?**

- **About:**
  - The scheme was **introduced in 1998 for providing adequate and timely credit support from the banking system**, under a single window with flexible and simplified procedure to the farmers for their cultivation and other needs like purchase of agriculture inputs such as seeds, fertilizers, pesticides etc. and draw cash for their production needs.
  - The scheme was further extended for the investment credit requirement of farmers viz. allied and non-farm activities in the year 2004.
  - In the Budget-2018-19, government **announced the extension of the facility of Kisan Credit Card (KCC) to fisheries and animal husbandry farmers** to help them to meet their working capital needs.
  - **Implementing Agencies:**
    - Commercial Banks
    - Regional Rural Banks (RRBs)
    - **Small Finance Banks**
    - **Cooperatives**
- **Features:**
  - The scheme comes with an **ATM-enabled RuPay debit card** with facilities for one-time documentation, built-in cost escalation in the limit, and any number of drawals within the limit.
  - Besides ensuring saturation, banks will also be taking steps to link Aadhaar immediately as **no interest subvention will be given** if the Aadhaar numbers are not seeded to KCC accounts.
  - Also, the government has taken several initiatives for KCC saturation which include adding farmers engaged in **animal husbandry** and **fisheries**, no processing fee of loan under KCC and raising the limit of collateral free **agriculture loan** from Rs. 1 lakh to Rs. 1.6 lakh.

Note:



- The KCC facility will **help fisheries and animal husbandry farmers to meet their short-term credit requirements** of rearing of animals, poultry birds, fish, shrimp, other aquatic organisms and capture of fish.
- **Objectives:**
  - To meet the short term credit requirements for cultivation of crops.
  - Post-harvest expenses.
  - Produce marketing loan.
  - Consumption requirements of farmer households.
  - Working capital for maintenance of farm assets and activities allied to agriculture.
  - Investment credit requirement for agriculture and allied activities.
- **Financial Provisions:**
  - To ensure availability of agricultural credit at a reasonable cost of 7% per annum to formers:
    - Government of India implements an **interest subvention** scheme of 2% for short term crop loans up to Rs. 3 lakh.
    - In addition, the GOI provides interest subvention of 2% and prompt repayment incentive of 3% to the farmers.

### What are the Achievements of KCC?

- As of June 2020, around 25 lakh applications have been sanctioned for Nationwide Fishery KCC.
- As part of the **Atmanirbhar Bharat** Package, the Government has announced to cover 2.5 crore farmers under the Kisan Credit Card (KCC) scheme with a credit boost of Rs. 2 lakh crores through a special saturation drive.
- As a result of concerted efforts, a major milestone target of covering more than 1.5 crore farmers under KCC, with a sanctioned credit limit of Rs. 1.35 lakh crore has been achieved.

### How is KCC Misused?

- Credit is often being transferred towards financially well-off people.
- Funds are diverted to non-agricultural use:
  - Investment in Real Estate
  - Purchase of Vehicles
  - Higher Education of children in foreign countries
- Quantum of land is inflated to avail higher credit.
- KCC route is used for **money laundering**.

### What are the Recommendations?

- All Banks **must follow the Guidelines of KCC properly**, the due acknowledgment for KCC application should be given to the applicants and a timeline decision on the application should be fixed.
  - The reasons for rejection **should be clearly indicated so that field officers could rectify and re-submit the forms**.
- KCC should be **given to people from Maldhari (Ghumantu) Community**, who do not stay in one place and have no collateral security to offer.
  - Maldharis are a tribal herdsmen community in Gujarat, India. Originally nomads, they came to be known as Maldharis after settling in Junagadh district (mainly Gir Forest).
- KCC should be **given to poor fishermen** who are unable to give any collateral.

## Guidelines to Curb Unfair Advertisements

### Why in News?

The **Central Consumer Protection Authority (CCPA)** recently issued guidelines to prevent false or misleading advertisements.

### What is Central Consumer Protection Authority?

- **About:**
  - CCPA is a **regulatory body established in 2020** based on the **provisions of the Consumer Protection Act, 2019**.
  - CCPA works under the administrative control of the **Ministry of Consumer Affairs**.
- **Objective:**
  - To promote, protect and enforce the rights of consumers as a class.
  - To conduct investigations into violation of consumer rights and institute complaints/prosecution.
  - To order the recall of unsafe goods and services, discontinuation of unfair trade practices and misleading advertisements.
  - To impose penalties on manufacturers/endorsers/publishers of misleading advertisements.

Note:



### What are the Guidelines?

- **Non-misleading and valid Advertisements.**
  - An advertisement can be considered **non-misleading if it contains true and honest representation of goods** and does not exaggerate the accuracy, scientific validity or practical usefulness or capability.
  - In case of unintentional lapse, the advertisement may still be considered as valid if the advertiser has taken prompt action in letting the consumer know the deficiency.
- **Surrogate Advertisements:**
  - "Surrogate advertisement" refers to the **advertisement of goods in the shadow of other goods.**
    - For example, the advertisement of tobacco in the garb of pan masala.
  - No surrogate advertisement or indirect advertisement shall be made for goods or services whose advertising is otherwise prohibited or restricted by law.
  - No circumventing of such prohibition or restriction and portraying it to be an advertisement for other goods or services shall be allowed.
- **Advertisements Targeting Children:**
  - Advertisements that **condone, encourage, inspire or unreasonably emulate behaviour that could be dangerous for children** or take advantage of children's inexperience, credulity or sense of loyalty etc. have **been prohibited.**
  - It goes without saying that **advertisements tend to influence children's buying behaviour** and encourage them to consume unhealthy goods, or develop negative feelings toward healthy goods.
- **Disclaimers in Advertisements:**
  - The guidelines have also introduced the need to have **"disclaimers in advertisements" to clarify a claim made in such advertisement or make qualifications or resolve ambiguities** therein in order to explain such claim in further detail.
  - Moreover, the advertiser **must not "attempt to hide material information with respect to any claim** made in such advertisement, the omission or absence of which is likely to make the advertisement deceptive or conceal its commercial intent".
- **Duties:**
  - The guidelines also impose **duties on the manufacturers, service providers and advertising**

**agency to not claim and make comparisons** in an advertisement which relate to matters of objectively ascertainable facts.

- Moreover, the advertisement **must be framed to gain the trust of the consumers and not to "abuse the trust of consumers** or exploit their lack of experience or knowledge".

### What is the Significance of the Guidelines?

- The guidelines are pathbreaking because **they fill significant consumer protection gaps** while explicitly outlining advertiser duties.
- The guidelines also try to **discourage the promotion of illogical consumerism aimed at children.**
- The problem of misleading, bait, surrogate and children-targeted advertisement has **festered without respite for far too long.**
- The guidelines perform an essential function in bringing the Indian regulatory framework at par with international norms and standards.
- The guidelines are **momentous in empowering customers against mischievous advertisers.**
- The guidelines mention the conditions for defining a "non-misleading and valid" advertisement instead of defining what constitutes a misleading or invalid advertisement. This **reduces the scope for exploitation of loopholes.**
- The challenges in the enforcement of existing advertisement regulations have also been addressed by the guidelines through the imposition of stringent penalties.

### What are the Initiatives for Consumer Protection?

- **Consumer Welfare Fund**
- **Central Consumer Protection Council**
- **Consumer Protection Rules, 2021**
- **Consumer Protection (E-Commerce) Rules, 2020**
- **National Consumer Day**

## Digital India Week 2022

### Why in News?

Recently, the Prime Minister has inaugurated the **Digital India Week 2022** under the **Digital India**

Note:



**Programme**, with the aim to strengthen **Ease of Doing Business** and Ease of Living.

- **Theme:** 'Catalyzing New India's Techade'.
  - To transform the nation into a **digitally empowered society** and knowledge economy.
- During the programme, PM launched multiple digital initiatives aimed at enhancing the accessibility of technology, streamlining service delivery to ensure ease of living and giving a boost to startups.

### What are the Digital Initiatives?

- **Digital India Bhashini:**
  - Digital India BHASHINI is India's **Artificial Intelligence (AI)** led language translation platform.
  - A Bhashini Platform will make **Artificial Intelligence (AI)** and **Natural Language Processing (NLP)** resources available to **MSME (Medium, Small and Micro Enterprises)**, Startups and Individual Innovators in the public domain.
- **Digital India GENESIS:**
  - Digital India GENESIS' (Gen-next Support for Innovative Startups) is a national deep-tech startup platform to **discover, support, grow and make successful startups in Tier-II and Tier-III cities of India.**
- **MyScheme:**
  - It is a service discovery platform facilitating access to Government Schemes.
  - It aims to offer a **one-stop search and discovery portal where users can find schemes that they are eligible for.**
- **Meri Pehchaan:**
  - It is National Single Sign On (NSSO) for One Citizen Login.
  - It is a **user authentication service in which a single set of credentials provide access to multiple online applications** or services.
- **Chips to Startup (C2S) Programme:**
  - The C2S Programme aims to **train specialized manpower in the area of design of semiconductor chips** at Bachelors, Masters and Research levels, and act as a catalyst for the growth of Startups involved in semiconductor design in the country.
  - It offers to mentor at the **organisational level and makes available State-of-the-art facilities for design to the institutions.**

### ➤ **Indiastack.global:**

- It is a global repository of key projects implemented under India Stack like **Aadhaar, UPI (Unified Payment Interface), Digilocker, Cowin Vaccination Platform, Government e Marketplace, DIKSHA Platform** and **Ayushman Bharat Digital Health Mission.**
- It will help **position India as the leader of building Digital Transformation projects** at population scale.

### What is Digital India Programme?

#### ➤ **About:**

- It was launched in 2015.
- The programme has been **enabled for several important Government schemes**, such as **BharatNet, Make in India, Startup India** and **Standup India, industrial corridors**, etc.

#### ➤ **Vision Areas:**

- Digital infrastructure as Utility to Every Citizen.
- Governance and services on demand.
- Digital empowerment of citizens.

#### ➤ **Objectives:**

- To prepare India for a knowledge future.
- For being transformative that is to realize IT (Indian Talent) + IT (Information Technology) = IT (India Tomorrow).
- Making technology central to enabling change.
  - On being an Umbrella Programme – covering many departments.

### Nine Pillars of Digital India

TARGETS	COST
1 Broadband Highways Broadband in 2.5 lakh gram panchayats by Dec 2016; Virtual network operators and smart buildings in cities; National Information Infrastructure by March 2017 ₹ 47,686 cr	2 Universal Mobile Access Cover rest of 42,300 villages by FY18 ₹ 16,000 cr
5 E-Kranti - Electronic Delivery of Services E-education, broadband, free WiFi, online courses. * E-healthcare, online consultation/records/supply. Full coverage in three years; online cash, loan. Information for farmers, financial inclusion e-courts, e-police, e-prosecution	3 Public Internet Access Programme Common Service Centres in 2.5 lakh villages by March 2017; 15 lakh post offices to offer multiple services ₹ 4750 cr
7 Electronics Manufacturing – Target Net Zero Imports Focus on semi-conductor fabrication plants, flawless design, set-top boxes, VSATs, mobiles, consumer & medical electronics, smart energy meters, smart cards, micro-ATMs	4 E-Governance: Reforming Govt through Technology Simplify forms, create online repositories for school certificates, IDs Integration of services and platforms (Aadhaar, payment Gateway); automate govt workflow; redress grievances
8 IT for Jobs Train 1 crore people in towns/villages in five years (new); three lakh agents to run viable businesses delivering IT services (ongoing); five lakh rural IT workforce in 5 years; BPO in every NE state ₹ 200 cr	6 Information for All Online hosting of information & documents; Govt engages via social media. Little addition resources needed
9 Early Harvest Programmes Biometric attendance by Oct; WiFi in all varieties secure govt email hotspots in cities with pop > 1 million/tourist centres; ebooks; SMS-based disaster alerts weather info ₹ 900 cr	

Note:



### **What are the Achievements of Digital India Programme?**

- Since 2014, more than Rs 23 lakh crore has been transferred to beneficiaries through Direct Benefit Transfers or **DBT**.
  - Digital platforms like Aadhaar, UPI, Cowin and Digilocker as examples of services that have contributed to the “ease of living” as citizens get services online without going to government offices or approaching middlemen.
- Digital India has **brought the government to the doorsteps and phones** of the citizens. More than 1.25 lakh **Common Service Centres (CSC) and Grameen Stores** are now taking e-commerce to rural India.
  - Similarly, property documents for rural properties are being provided by use of technology.
- With the help of **One Nation One Ration Card (ONORC)**, free ration was ensured to more than 80 crore countrymen.
- Through **Co-WIN Platform**, India has run the **world’s largest and most efficient covid vaccination and covid relief program**.

## **Election to the Office of the Vice-President of India**

### **Why in News?**

Recently, the **Election Commission** announced the Vice-Presidential election to be held in August, 2022.

### **What are the Provisions Related to the Vice-President?**

- **Vice President:**
  - The Vice President is the **second highest constitutional office in India**. He/she serves for a **five-year term, but can continue to be in office, irrespective of the expiry of the term**, until the successor assumes office.
  - The Vice President may resign his office by submitting his resignation to the President of India. The resignation becomes effective from the day it is accepted.
  - The Vice President **can be removed from office by a resolution of the Council of States (Rajya Sabha)**, passed by a majority of its members at

that time and agreed to by the House of the People (**Lok Sabha**). A resolution for this purpose may be moved only after a notice of at least a **minimum of 14 days has been given of such an intention**.

- The Vice President is the **ex-officio Chairperson of the Council of States (Rajya Sabha)** and does not hold any other office of profit.
- **Eligibility:**
  - Should be a citizen of India.
  - Should have completed 35 years of age.
  - Should be qualified for election as a member of the 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:**
  - As per **Article 66 of the Constitution of India**, the Vice-President is elected by the members of the Electoral College.
  - **Electoral College consists of:**
    - Elected members of Rajya Sabha.
    - Nominated members of Rajya Sabha.
    - Elected members of Lok Sabha.

### **What is the Election Procedure?**

- As per Article 68 of the Constitution, **the election to fill the vacancy caused by the expiration of the term of office of the outgoing vice-president** is required to be completed before the expiration of the term.
- **Article 324** of the Constitution read with the **Presidential and Vice-Presidential Elections Act, 1952** and the Presidential and Vice-Presidential Elections Rules, 1974, vests the **superintendence, direction and control of the conduct of election** to the office of the Vice-President of India in the Election Commission of India.
  - The notification for election shall be issued **on or after the sixtieth day before the expiration of the term of office of the outgoing Vice-President**.
- 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 (one)**.
- The Election Commission, in consultation with the Central Government, appoints the Secretary-General of Lok Sabha and Rajya Sabha, **by rotation, as the Returning Officer**.

Note:



- Accordingly, the **Secretary-General, Lok Sabha will be appointed as the Returning Officer** for the present election to the Office of the Vice-President of India.
- The Commission also decides to appoint Assistant Returning Officers in Parliament House (Lok Sabha) to assist Returning Officers.
- As per Rule 8 of the Presidential and Vice-Presidential Elections Rules, 1974, **polls for the election are taken in the Parliament House.**

## Centre's Push for Labour Codes

### Why in News?

Central government is pushing for the implementation of **four labour codes introduced in 2020** (Code of Wage Act in 2019), replacing 29 sets of labour laws.

- **Labour Codes includes 4 versions:** Code of Wages Act 2019, Industrial Relations Code Bill, 2020, Social Security Code Bill, 2020, Occupational Safety, Health and Working Conditions Code Bill, 2020

### What do we need to know about Labour Codes?

#### ➤ Code of Wages Act 2019:

- **About:**
  - The bill aims to **transform the old and obsolete labour laws into more accountable and transparent** ones and seeks to pave the way for the introduction of minimum wages and **labour reforms in the country.**
  - It regulates the **wages and bonus payments** in all employment areas where any industry, trade, business, or manufacturing is being carried out.
  - The bill subsumes the following four labour laws:
    - **The Payment of Wages Act, 1936**
    - **The Minimum Wages Act, 1948**
    - **The Payment of Bonus Act, 1965**
    - **The Equal Remuneration Act, 1976**
  - It universalizes the provisions of **minimum wages** and timely payment of wages to all employees irrespective of the sector and wage ceiling and seeks to ensure "**Right to Sustenance**" for every worker and intends to increase the legislative protection of minimum wage.

- It has been ensured in the bill that **employees getting monthly salary shall get the salary by 7<sup>th</sup> of next month**, those working on a **weekly basis shall get the salary on the last day of the week and daily wagers should get it on the same day.**
- **The Central Government is empowered** to fix the floor wages by taking into account the living standards of workers. It may set different floor wages for different geographical areas.
  - The minimum wages decided by the central or state governments must be higher than the floor wage.

#### ➤ Industrial Relations Code Bill, 2020:

- **Industrial Employment (Standing Orders) Act, 1946** makes it obligatory for employers of an industrial establishment where **100 or more workers** are employed to **clearly define the conditions of employment and rules of conduct** for workmen, by way of standing orders/services rules and to make them known to the workmen employed.
  - The **new provision** for standing order will be applicable for every industrial establishment wherein **300 or more than 300 workers are employed** or were employed on any day of the preceding twelve months.
  - It was earlier suggested by the **Standing Committee on Labour** which also suggested that the threshold be increased accordingly in the Code itself and the words '**as may be notified by the Appropriate Government**' be removed because reform of labour laws through the executive route is undesirable and should be avoided to the extent possible.
  - After becoming a law, **orders will not be dependent on whims and fancies of executives of state governments.**
- It also introduces new conditions for carrying out a **legal strike**. The time period for arbitration proceedings has been included in the conditions for workers before going on a legal strike as against only the time for conciliation at present.
  - No person employed in any industrial establishment shall go on strike **without a 60-day notice** and **during the pendency** of proceedings before a **Tribunal** or a National Industrial Tribunal and **sixty days after the conclusion of such proceedings.**

Note:



- At present, a person employed in a **public utility service cannot go on strike** unless they give notice for a strike **within six weeks** before going on strike or **within fourteen days of giving such notice, which the IR Code now proposes to apply for all the industrial establishments.**
- It has also proposed to set up a **re-skilling fund** for training of retrenched workers with contribution from the employer, of an amount equal to 15 days last drawn by the worker.
- **Social Security Code Bill, 2020:**
  - It proposes a **National Social Security Board** which shall recommend to the central government for formulating suitable schemes for different sections of **unorganized workers, gig workers and platform workers.**
  - Also, aggregators employing **gig workers will have to contribute 1-2% of their annual turnover for social security,** with the total contribution not exceeding 5% of the amount payable by the aggregator to gig and platform workers.
- **Occupational Safety, Health and Working Conditions Code Bill, 2020:**
  - It has defined **inter-state migrant workers** as the worker who has come on their own from one state and obtained employment in another state, earning up to Rs. 18,000 a month.
  - The proposed definition makes a **distinction from the present definition of only contractual employment.**
  - It has dropped the earlier provision for temporary accommodation for workers near the worksites and has proposed a **journey allowance, a lump sum amount of fare to be paid by the employer for to and fro journey of the worker to their native place from the place of their employment.**
- **Consolidation and simplification of the Complex laws:**
  - The three Codes (IR, SS & OSHW) **simplify labour laws** by subsuming 25 central labour laws that have been on the table for at least 17 years.
  - It will provide a **big boost to industry & employment** and will reduce multiplicity of definition and multiplicity of authority for businesses.
- **Single Licensing Mechanism:**
  - The codes provide for a **single licensing mechanism.**
    - It will give fillip to industries by ushering in substantive reform in the licensing mechanism. Currently, industries have to apply for their licence under different laws.
- **Easier Dispute Resolution:**
  - The codes also **simplify archaic laws** dealing with industrial disputes and **revamp the adjudication process,** which will pave the way for early resolution of disputes.
- **Ease of Doing Business:**
  - According to the industry and some economists, such reform shall **boost investment and improve ease of doing business.**
  - It drastically reduces complexity and internal contradictions, increases flexibility & modernizes regulations on safety/working conditions
- **Other benefits for Labour:**
  - The three codes will promote fixed term employment, reduce influence of trade unions and expand the social security net for informal sector workers.
- **Gender parity:**
  - Women have to be permitted to work in every sector at night, but it has to be ensured that provision for their security is made by the employer and consent of women is taken before they work at night.
  - **The maternity leave is increased from 12 weeks to 26 weeks.** Women were allowed to work in mines under **Pradhan Mantri Rojgar Protsahan Yojana (PMRPY).**
  - Pay parity to women workers as compared to their male counterparts.

### ***What are the Benefits of Labour Codes?***

- **Code of Wage Act 2019:**
  - It is expected to reduce litigation as it streamlines the definition of wages.
  - It will substantially reduce the number of minimum wages in the country from the existing more than 2000 rates of minimum wages.
  - This would ensure that every worker gets a minimum wage which will also be accompanied by an increase in the **purchasing power** of the worker thereby giving a fillip to growth in the economy.

### ***What are the Challenges Labour Codes Facing?***

- **Constitutional Challenge:**
  - Labour being a **concurrent subject,** both the **Centre and states have to frame laws and rules.**

Note:



- While Parliament cleared the four labour codes in 2020, and the Centre pre-published the draft rules for all four codes, **some state governments are yet to complete the process.**

#### ➤ Industrial Relations Code Bill:

- It will **water down the labour rights** for workers in small establishments having less than 300 workers and would enable companies to introduce arbitrary service conditions for workers.

#### ➤ Code of Wages Act:

- It has been **alleged that the new wage code will push the starvation wages** further by increasing the income capacity and purchasing power of the informal workers.

#### ➤ Concern of Exclusion:

- The draft rules **mandate the registration of all workers (with Aadhaar cards) on the Shram Suvidha Portal** to be able to receive any form of social security benefit.
- This would **lead to Aadhaar-driven exclusion** and workers will most likely be unable to register on their own due to lack of information.

#### ➤ Urban Centric:

- The codes **fail to extend any form of social protection to the vast majority of informal sector workers** which is predominant in rural areas including migrant workers, self-employed workers, home-based workers and other vulnerable groups.

#### ➤ No-Right Based Framework:

- The **Code does not emphasize social security as a right**, nor does it make reference to its provision as stipulated by the Constitution.

## Ease of Doing Business Ranking: BRAP 2020

### Why in News?

Recently, the Ministry of Commerce and Industry has released a **Ease of Doing Business (EoDB) Ranking**, which is based on **Business Reforms Action Plan (BRAP) report 2020**.

### What is the Ranking all About?

#### ➤ Aim:

- **To boost investor confidence, foster a business-**

**friendly climate and augment the ease of doing business across the country** by introducing an element of healthy competition through a system of assessing states based on **their performance in the BRAP.**

#### ➤ Parameters:

- The parameters **include various areas**, such as construction permit, labour regulation, environmental registration, access to information, land availability and single window system.

### What are the Findings of the EoDB?

#### ➤ Top Achievers:

- Seven states - Andhra Pradesh, Gujarat, Haryana, Karnataka, Punjab, Telangana and Tamil Nadu - were **categorised as 'top achievers' in the Ease of Doing Business ranking** of states and union territories.

#### ➤ Achievers:

- Himachal Pradesh, Uttar Pradesh, Odisha, and Madhya Pradesh are the other states categorised as achievers in the ranking.

#### ➤ Emerging Business Ecosystems:

- Six states - Manipur, Meghalaya, Nagaland, Tripura, Puducherry and Jammu and Kashmir - were **'emerging business ecosystems'**.

#### ➤ Aspirers:

- Seven states - Goa, Assam, Kerala, Rajasthan, Jharkhand, Chhattisgarh and Bengal - were categorised as 'Aspirers'.

### What is BRAP?

#### ➤ About:

- It was launched in 2015.
- The Ease of Doing Business Index is based on BRAP.
- It was introduced to **encourage a healthy competition between states.**
- This would help in attracting investments and increasing Ease of Doing Business in each State.
- The **Department for Promotion of Industry and Internal Trade (DPIIT)**, since 2014, has been assessing states/UTs based on their performance in the implementation of prescribed reforms in the BRAP exercise.
- So far, assessments of states/UTs have been released **for the years 2015, 2016, 2017-18, 2019 and 2022.**

Note:



### ➤ BRAP 2020:

- The report includes **301 reform points that cover 15 business regulatory areas** like access to information, single window system, labour, environment, sectoral reforms and other reforms spanning the life cycle of a typical business.
- **Sectoral reforms have been introduced for the first time in BRAP 2020** wherein 72 reforms were identified across 9 sectors, namely, trade licence, healthcare, legal metrology, cinema halls, hospitality, fire NOC, telecom, movie shooting and tourism.

## Take-Home Ration

### Why in News?

Recently, a report titled-Take Home Ration-Good Practices throughout the State/Union Territories was released by **NITI Aayog** and the **World Food Program**.

#### What is World Food Program?

- It is the largest humanitarian organisation in the world, saving lives in times of need and utilising food aid to help people recover from war, **natural disasters**, and the effects of **climate change** create a road to peace, stability, and prosperity.
- The WFP was given the **Nobel Peace Prize** in 2020.
- It was founded in 1961 by the **Food and Agriculture Organisation (FAO)** and **United Nations General Assembly (UNGA)** with its **headquarters in Rome, Italy**.
- It is also a **member of the United Nations Sustainable Development Group (UNSDG)**, a coalition of UN agencies and organisations aimed at fulfilling the **Sustainable Development Goals (SDGs)**.

### What are the Key Highlights of the Report?

- The report presents a set of **good and innovative practices** adopted in the implementation of the **Take Home Ration value chain** by the States and UTs.
- The government adopted innovative models to reach remote areas.
- It appreciated the **production, formulation, delivery, labelling, packaging, supervision, quality control, and changes in social and behavioural norms adopted by the Government by JAN BHAGIDARI, and sourcing local networks of Anganwadi's, etc.**

### What is Take Home Ration?

- The government of India provides Take Home Ration under the **Supplementary Nutrition component of the Integrated Child Development Services (ICDS)** to fill the gap in nutrition among children as well as **Pregnant and Lactating Women (PLW)**.
- It offers **fortified rations** for use at home, provided in **two ways**:
  - **Take-Home Rations** and **Hot-Cooked Meals at Anganwadi Centers**.
  - It's given as **raw ingredients** or in **packets that have already been cooked**.

### What are the Challenges?

- **Leakages in Delivery Mechanism:**
  - Due to faulty practices and corruption in the delivery system, **the whole scenario is very complex**, and siphoning off rations to the black market is easy.
- **Poor Quality:**
  - Often the goods are of poor quality due to the negligence of the procuring department.
  - **Lack of warehouse and cold storage often led to wastage** of food grains.
- **Lack of Transparency:**
  - The whole delivery mechanism lacks **transparency as it's almost unable to track the logistics** and various other mechanisms involved to keep a check on them.
- **Poor Implementation:**
  - The use of **traditional methods to procure, sort, and deliver the product keeps the system inefficient**, which leads to very poor implementation in the delivery of food grains.

### What are the Other Similar Government Schemes?

- **National Health Mission (NHM):**
  - Launched in 2013, it subsumed the National Rural Health Mission and the National Urban Health Mission.
  - It is being implemented by the Ministry of Health & Family Welfare.
- **PM-POSHAN:**
  - In September 2021, the Union Cabinet approved the Pradhan Mantri Poshan Shakti Nirman or PM-POSHAN for providing one **hot cooked meal**

Note:



in Government and Government-aided schools with the financial outlay of Rs 1.31 trillion.

- The scheme replaced the national programme for mid-day meal in schools or Mid-day Meal Scheme.
- **National Nutrition Strategy:**
  - The Strategy aims to reduce all forms of undernutrition by 2030, with a focus on the most vulnerable and critical age groups.

## Information

### Technology Act's Section 69A

#### Why in News?

Ministry of Electronics & Information Technology (MeitY) issued orders under **Section 69 (A) of the Information Technology Act, 2000** to take down certain posts from **Twitter (Microblogging Site)**.

- Twitter has moved to Karnataka High Court, claiming that many of the blocking orders are procedurally and substantively deficient under Section 69 (A) of the Act.

#### What is the Current Issue?

- The Ministry said under Section 69 (A) of the IT Act, the company has “failed to comply with the directions on multiple occasions”.
- Twitter submitted a list of over 80 accounts and tweets that it had blocked based on a request from the government in 2021.
- Twitter claims that **the basis on which multiple accounts and posts have been flagged** by the Ministry are either “**overbroad and arbitrary**” or “**disproportionate**”.
- According to Twitter, some of the content flagged by the ministry **may pertain to official accounts of political parties, blocking which could be violative of the Right to Free Speech.**

#### What is Section 69 (A) of the Information Technology Act?

- **About:**
  - It **confers on the Central and State governments the power to issue directions** “to intercept, monitor or decrypt any information generated, transmitted, received or stored in any computer resource”.
  - The **grounds on which these powers may be exercised are:**

- In the interest of the sovereignty or integrity of India, defence of India, the security of the state.
- Friendly relations with foreign states.
- Public order, or for preventing incitement to the commission of any cognizable offence relating to these.
- For investigating any offence.

#### ➤ **Process of Blocking Internet Websites:**

- Section 69A, for similar reasons and grounds (as stated above), **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.
- The term ‘**intermediaries**’ includes **providers of telecom service, network service, Internet service and web hosting, besides search engines**, online payment and auction sites, online marketplaces and cyber cafes.
  - Any such request for blocking access **must be based on reasons given in writing.**

#### What are the other Related Laws?

- In India, the **Information Technology (IT) Act, 2000**, as amended from time to time, governs all activities related to the use of computer resources.
- It **covers all ‘intermediaries’ who play a role in the use of computer resources** and electronic records.
- The role of the intermediaries has been spelt out in separate rules framed for the purpose in 2011- **The Information Technology (Intermediaries Guidelines) Rules, 2011.**

#### What is the Reason for Intermediaries to Show Compliance to IT Act?

- **International Requirement:**
  - Most nations have framed laws mandating cooperation by Internet service providers or web hosting service providers and other intermediaries to cooperate with law-and-order authorities in certain circumstances.
- **To Fight Cybercrime:**
  - Cooperation between technology services companies and law enforcement agencies is now deemed a vital part of **fighting cybercrime** and various other crimes that are committed using computer resources.

Note:



- These cover hacking, digital impersonation and theft of data.
- **To Prevent Misuse of Internet:**
  - The potential of the misuse has led to law enforcement officials constantly seeking to curb the ill-effects of using the medium.

## Meghalaya tribal council to revisit Instrument of Accession (IoA)

### Why in News?

A tribal council in Meghalaya has called for a meeting of traditional heads to revisit the Instrument of Accession that made the Khasi domain a part of the Indian Union more than seven decades ago.

### Why does Meghalaya tribal council want to revisit IoA?

- The need to revisit the Instrument of Accession and Annexed Agreement was stressed by leaders in the Khasi Hills Autonomous District Council (KHADC). According to them, it is important to understand the paragraphs of the agreement, since many provisions are missing from the Sixth Schedule of the Constitution.
- The Federation of Khasi States had sought special status, like Nagaland has under Article 371A, which protects socio-religious and customary practice of Nagas with right to administration of civil & criminal justice as per Naga Customary laws.
  - Under Article 371A, Nagas also enjoys ownership and transfer of land and its resources.
- Recently, introduced the 'Khasi Inheritance of Property Bill, 2021' might have infuriated few leaders of KHADC, as an interference to social and customary practices of Khasi people. The bill called for "equitable distribution" of parental property among siblings in the Khasi community.
- The KHADC said the provisions can be added to the Sixth Schedule, which "can be amended by Parliament".

### What is IoA?

- **About:**
  - The Instrument of Accession was a legal document first introduced by the Government of India Act

1935 and used in 1947 to enable each of the rulers of the princely states under British paramountcy to join one of the new dominions of India or Pakistan created by the Partition of British India.

- The instruments of accession executed by the rulers, provided for the accession of states to the Dominion of India (or Pakistan) on three subjects, namely, defence, external affairs and communications.

### Note:

- KHADC is a body under the Sixth Schedule of the Constitution.
- It does not have the power to legislate.
- Paragraph 12 A of the Sixth Schedule gives the final right of passing a law to the state legislature.
- The Sixth Schedule of the Constitution provides for the administration of tribal areas in Assam, Meghalaya, Tripura and Mizoram to safeguard the rights of the tribal population in these states.
- This special provision is provided under Article 244 (2) and Article 275 (1) of the Constitution.
- It provides for autonomy in the administration of these areas through Autonomous District Councils (ADCs), which are empowered to make laws in respect of areas under their jurisdiction.

### IoA and Meghalaya:

- IoA with the Khasi hills state was signed with the Dominion of India between 15<sup>th</sup> December, 1947, and 19<sup>th</sup> March, 1948.
  - Meghalaya is divided into three regions dominated by as many matrilineal communities – the Khasis, Garos and Jaintias.
  - The Khasi hills straddle 25 Himas or States that formed the Federation of Khasi States.
- The conditional treaty with these States was signed by Governor General of India, Chakravarty Rajagopalachari on 17<sup>th</sup> August, 1948.

### What is Sixth Schedule?

- The Sixth Schedule under Article 244 provides for the formation of autonomous administrative divisions — Autonomous District Councils (ADCs) — that have some legislative, judicial, and administrative autonomy within a state.
- The Sixth Schedule contains special provisions for the administration of tribal areas in the four

Note:



north-eastern states of Assam, Meghalaya, Tripura and Mizoram.

- The tribal areas in **these four states** have been **constituted as autonomous districts**. The **governor** is empowered to **organise** and re-organise the **autonomous districts**.
- The **acts of Parliament** or the **state legislature** do **not apply to autonomous districts** or apply with specified modifications and exceptions.
  - The power of direction, in this regard, lies either with the President or Governor.
- **Each autonomous district has a district council** consisting of **30 members**, of whom **four are nominated** by the Governor and the remaining **26 are elected** on the basis of adult franchise.
  - The **elected members** hold office **for a term of five years** (unless the council is dissolved earlier) and **nominated members** hold office **at pleasure of the governor**.
- Each autonomous region also has a separate regional council.
  - The **district and regional councils** administer the areas under their jurisdiction.
  - They **can make laws** on certain specified **matters** like land, forests, canal water, shifting cultivation, village administration, the inheritance of property, marriage and divorce, social customs and so on. **But all such laws require the assent of the Governor**.
  - **They can constitute village** councils or **courts** for trial of suits and cases between the tribes. They hear appeals from them. The **jurisdiction of the high court over these suits and cases is specified by the governor**.
- The district council can establish, construct or manage primary schools, dispensaries, markets, ferries, fisheries, roads and so on in the district.
- They are empowered to assess and collect land revenue and to impose certain specified taxes.

## Approved Fuels for NCR: CAQM

### Why in News?

Recently, the **Commission for Air Quality Management (CAQM)** has directed **NCR (National Capital Region)** states to adopt a **standard list of approved fuels** to reduce **air pollution**.

- The standard list of fuels approved by the CAQM includes **petrol, diesel, hydrogen/methane, natural gas, Liquefied Petroleum Gas (LPG) and electricity**.
- Many industries shifted to cleaner fuels such as **PNG (Piped Natural gas)** and biomass and many other industrial sectors such as **food processing, distilleries and chemicals are already in the process of shifting to cleaner fuels**.
- Shifting to cleaner fuels such as biomass and PNG in the industries of NCR region greatly contributes to reducing the load of pollution (e.g. industries of Alwar and Bhiwadi in Rajasthan).

### What is CAQM?

- **About:**
  - CAQM is a **statutory body formed under the Commission for Air Quality Management in National Capital Region and Adjoining Areas, Act 2021**.
    - Earlier, the commission was formed through the promulgation of the **Commission for Air Quality Management in National Capital Region and Adjoining Areas Ordinance, 2021**.
  - The Commission for Air Quality Management in National Capital Region and Adjoining Areas, Act 2021 also dissolved the Environment Pollution Prevention and Control Authority (EPCA) established in the NCR in 1998.
- **Objectives:**
  - To ensure **better coordination, research, identification and resolution of problems surrounding the air quality index** and for matters connected therewith or incidental thereto.
- **Scope:**
  - Adjoining areas have been defined as areas in the states of Haryana, Punjab, Rajasthan, and Uttar Pradesh adjoining the NCR where any source of pollution may cause an adverse impact on air quality in the NCR.
- **Composition:**
  - The Commission will be headed by a full-time chairperson who has been a Secretary to the Government of India, or a **Chief Secretary to a State government**.
  - The chairperson will hold the post for three years or until s/he attains the age of 70 years.

Note:



- It will have members from several Ministries as well as representatives from the stakeholder States.
- It will have experts from the **Central Pollution Control Board (CPCB), Indian Space Research Organisation (ISRO) and Civil Society.**
- **Functions:**
  - Coordinating **actions taken by concerned state governments** (Delhi, Haryana, Punjab, Rajasthan, and Uttar Pradesh).
  - **Planning and executing plans** to prevent and control air pollution in the NCR.
  - Providing **a framework for identification of air pollutants.**
  - Conducting **research and development through networking** with technical institutions.
  - Training and creating **a special workforce to deal with issues** related to air pollution.
  - Preparing various action plans such as **increasing plantation and addressing stubble burning.**

## Parliamentary Standing Committee Report on Mediation Bill, 2021

### Why in News?

Recently, Parliamentary Standing Committee on Law and Justice has recommended substantial changes to the Mediation Bill, 2021.

- The bill was introduced in Rajya Sabha in December, 2021, with an aim to reduce the **pendency of cases in courts.**
- As soon as the bill was introduced in the Rajya Sabha, the Chairman of the Rajya Sabha referred it for examination.

### What are the Issues Highlighted by the Panel?

- **Pre-Litigation:**
  - The panel highlighted many key issues **including mandatory and coercive nature of pre-litigation mediation.**
  - Making pre-litigation mediation necessary may result in case delays and provide another instrument in the hands of truant litigants to prolong case disposition.

- **Clause 26:**
  - The panel was against clause 26<sup>th</sup> clause of the draft which gives power to the supreme court or the High court to make laws of pre-litigation according to them.
- **Non-Applicability to Non-Commercial Disputes:**
  - The members **questioned the non-applicability of the provisions of the Bill to disputes/matters** of non-commercial nature involving the Government and its agencies.
- **Appointments:**
  - The panel had discussions also about the **qualifications and appointment of the Chairperson** and Members of the proposed Mediation Council.

### What are the Recommendations?

- **Pre-Litigation:**
  - It recommended to **make pre-litigation mediation optional and further introduced it in a phased manner** instead of introducing it with immediate effect for all civil and commercial disputes.
  - While implementing pre-litigation mediation under the Commercial Courts Act, 2015, should be studied before mandating it across other case categories.
- **Appointment of chairperson:**
  - The panel recommended that the Central Government can **appoint the Chairperson and Members of the Mediation Council of India through a selection committee.**
    - In the bill it was given that **people dealing with problems related to 'Alternative Dispute Resolution' can become members** and chairman of the council if they show 'capacity' and 'knowledge and experience' in mediation.
- **Establishment of Mediation Council in Each State:**
  - Given the vast range of duties and obligations allocated to the Mediation Council of India, mediation councils should be established in each state.
  - These State Mediation Councils **should operate under the general supervision, direction, and control of the Mediation Council of India** and perform such functions as it may specify.
- **Unique Registration Number:**
  - The **Mediation Council** should issue each **mediator with a unique registration number**, and those provisions be made in the bill to allow the Mediation

Note:



Council to continuously evaluate the mediator by holding training sessions on a regular basis and that the mediator earns a minimum number of credit points on a yearly basis in order to be eligible to conduct mediation.

- Instead of multiple bodies registering mediators, **the proposed Mediation Council of India should be made the nodal authority** for the registration and accreditation of mediators.
- **Reducing Time Limit:**
  - The panel recommended reducing the time limit from 180 days to 90 days and further an extension period of 60 days instead of 180 days.
- **Reframing Definition:**
  - They also recommended reframing the new definition of mediation and do not put it separately under clause 4 as it is already given in clause 3.

### What are the Highlights of the Mediation Bill, 2021?

- The objective of the bill is to settle any civil or commercial disputes through mediation before seeking court or tribunal's intervention.
- After two mediation sessions, a side may withdraw from mediation.
- The mediation procedure must be completed within 180 days, which the parties may extend by another 180 days.
- The **India Mediation Council** will be established to regulate the whole process.
  - Its tasks include registering mediators and recognising mediation service providers and mediation institutes.
- Further, the agreements resulting from mediation will be binding and enforceable in the same manner as court judgments.

#### What is Mediation?

- Mediation is a **voluntary, binding process** in which an impartial and neutral mediator facilitates disputing parties in reaching a settlement.
- A mediator **does not impose a solution** but creates a conducive environment in which disputing parties can resolve all their disputes.
- Mediation is a **tried and tested alternative method of dispute resolution**. It has proved to be a great

success in the cities of Delhi, Ranchi, Jamshedpur, Nagpur, Chandigarh and Aurangabad.

- Mediation is a **structured process where a neutral person** uses specialised communication and negotiation techniques. Litigants participating in the mediation process have unequivocally endorsed it.
- Other than mediation there are some other dispute resolution methods such as **Arbitration, Negotiation and Conciliation**.
- Mediation is a type of **Alternative Dispute Resolution** because they offer an alternative to litigation.
  - ADR proceedings can be initiated by the parties or mandated by legislation, the courts, or contractual provisions.



## Dispute over Electoral Symbol

### Why in News?

Recently, a political party has approached the **Election Commission of India (ECI)** to stake claim on the **Party Symbol**.

#### What is an Election Symbol?

- An electoral or election symbol is a **standardized symbol allocated to a political party**.
- They are used by the parties during their campaigning and are shown on **Electronic Voting Machines (EVMs)**, where the voter chooses the symbol and votes for the associated party.
- They were introduced to **facilitate voting by illiterate people**, who can't read the name of the party while casting their votes.

Note:



- In the 1960s, it was proposed that the regulation, reservation and allotment of electoral symbols should be done through a law of Parliament, i.e. Symbol Order.
  - In a response to this proposal, the ECI stated that the recognition of political parties is supervised by the provisions of **Election Symbols (Reservation and Allotment) Order, 1968** and so will the allotment of symbols.

### What are the EC's powers in such Disputes?

- The **Election Symbols (Reservation and Allotment) Order, 1968** empowers the EC to recognize political parties and allot symbols.
  - Under **Paragraph 15** of the Order, it can decide disputes among rival groups or sections of a recognised political party staking claim to its name and symbol.
- On disputes among rival groups, **the Symbols Order**, states that the **EC is empowered to take decision after considering all the available facts and circumstances of the case** that one rival section or group or none of such rival sections or groups is that recognized political party.
- The **decision of the Commission shall be binding on all such rival sections/groups**.
  - This applies to disputes between recognized national and state parties.
- For splits in registered but unrecognized parties, the EC usually **advises the warring factions to resolve their differences internally** or to approach the court.

### How does the EC decide?

- The ECI **primarily ascertains the support enjoyed by a claimant within a political party** in its organizational wing and in its legislative wing.
- **For Organizational Wing**, the Commission examines **the party's constitution and its list of office-bearers submitted when the party was united**.
  - ECI identifies the apex committee(s) in the organisation and finds out how many **office-bearers, members or delegates support the rival claimants**.
- **For the Legislative Wing**, the party goes by the **number of MPs (Member of Parliaments) and MLAs (Member of Legislative assembly) in the rival camps**. ECI may consider affidavits filed by these members to ascertain where they stand.

- The ECI **may decide the dispute in favour of one faction** by holding that it commands enough support in its organisational and legislative wings to be entitled to the name and symbol of the recognised party.
- It **may permit the other group to register itself as a separate political party**.

### What happens when there is no certainty?

- Where the party is either vertically divided or it is not possible to say with certainty which group has a majority, the EC **may freeze the party's symbol and allow the groups to register themselves with new names** or add prefixes or suffixes to the party's existing names.

### What happens when rival factions Reunited in future?

- If reunited, the **claimants may approach the EC again** and seek to be recognised as a unified party.
- The EC is also empowered to recognise mergers of groups into one entity. It may restore the symbol and name of the original party.

## Platform of Platforms (POP)

### Why in News?

Recently, the **Union Minister of Agriculture and Farmers Welfare** launched the **Platform of Platforms (PoP)** under the **National Agriculture Market (e-NAM)** on the side-lines of the **State Agriculture and Horticulture Ministers' Conference** in Bengaluru, Karnataka.

### What do we need to know about Platform of Platforms (PoP)?

- **About:**
  - **e-NAM** integrates the **platform of Service Providers** as "**Platform of Platforms**" which includes:
    - **Composite Service Providers (Service Providers who provide holistic services for trading of agricultural produce including quality analysis, trading, payment systems and logistics)**
    - **Logistics Service Provider, Quality Assurance Service Provider, Cleaning, Grading, Sorting & Packaging Service Provider, Warehousing Facility Service Provider, Agricultural Input Service Provider, Technology Enabled Finance & Insurance Service Provider.**

Note:



- **Information Dissemination Portal (Advisory Services, crop forecasting, weather updates, capacity building for farmers etc.)**
- Other platforms (**e-commerce, international agri-business platforms, barter, private market platforms etc.**).

### **What are the Benefits of PoP?**

- **Digital Benefits:**
  - This will increase **farmers' digital access** to multiple markets, buyers and service providers and bring **transparency in business transactions** with the aim of improving price search mechanism and quality commensurate price realisation.
  - The PoP will create a **digital ecosystem**, which will benefit from the expertise of different platforms in different segments of the agricultural value chain.
- **Ease of Operation:**
  - **41 service providers from different platforms** are covered under POP facilitating various value chain services like **trading, quality checks, warehousing, fintech, market information, transportation etc.**
    - It enables farmers, FPOs, traders and other stakeholders to **access a wide variety of goods and services** across the agricultural value chain through a single window, thereby giving more options to the stakeholders.
  - Farmers will be facilitated to **sell the produce outside their state borders.**
  - The inclusion of various service providers not only adds to the value of the e-NAM platform, but also gives the **users of the platform options to avail services from different service providers.**
  - Moreover, while selecting a good quality Goods/ Service Provider, **it saves the time and labour of the stakeholders.**

#### **What is e-NAM Portal?**

- **National Agriculture Market (eNAM)** is a pan-India **electronic trading portal** which networks the existing **APMC mandis to create a unified national market for agricultural commodities.**
- **Small Farmers Agribusiness Consortium (SFAC)** is the lead agency for implementing eNAM under the aegis of **Ministry of Agriculture and Farmers' Welfare, Government of India.**

- **Vision:**
  - To promote **uniformity in agriculture marketing** by streamlining of procedures across the integrated markets, removing information asymmetry between buyers and sellers and promoting real time price discovery based on actual demand and supply.
- **Mission:**
  - **Integration of APMCs across the country** through a common online market platform to facilitate pan-India trade in agriculture commodities, providing better price discovery through transparent auction process based on quality of produce along with timely online payment.

### **What are the other Initiatives for Agriculture?**

- **AgriStack**
- **Digital Agriculture Mission**
- **Unified Farmer Service Platform (UFSP)**
- **National e-Governance Plan in Agriculture (NeGP-A)**
- **Sub-Mission on Agricultural Mechanization (SMAM)**
- **Kisan Suvidha App**
- **Soil Health Card (SHC) Portal**

## **Service Charge**

### **Why in News?**

Recently, the **Central Consumer Protection Authority (CCPA) issued rules to avoid unfair trade practices** and protect consumer interests in hotels and restaurants that assess service charges.

### **What are the New Guidelines?**

- **About:**
  - According to it, hotels and restaurants **prohibited from collecting extra charge in the name of service charge automatically or by default in the bill.**
  - They need to mention to the customers that service charges are **voluntary and optional.**
  - Most significantly, hotels and restaurants are no longer permitted to limit admission or services based on the collection of service charges.
  - Furthermore, hotels are not permitted to add service charges to their bills and collect GST on the total.

Note:



**What is CCPA?**

- It was established **under the Consumer Protection Act (CPA) of 2019**.
- It is empowered to **regulate abuses of consumer rights, unfair trade practises, and false or misleading marketing that are detrimental to the public's interest**.
- It has authority under Section 18 of the CPA, 2019 to **safeguard, promote, and, most importantly, defend consumers' rights** and prevent violations of their rights under the Act.
- Further, enhances consumer rights and makes sure that no person engages in unfair trade practices, it is also empowered to issue guidelines to enforce the rights of the consumers.

- Any **Tip, Token, Donation, etc** would be considered as a **separate transaction between hotel staff and consumer** its **totally voluntary for the consumer**.
- **Redressal Mechanisms:**
  - If any hotel or restaurant is levying service charge, then the **customer can ask the concerned hotel or restaurant to remove the service charge from the bill or further lodge a complaint on the NCH** by calling 1915 or through the NCH mobile app.
    - National consumer Helpline works as an **alternative dispute redressal mechanism** at the pre litigation level.
  - A complaint may also be filed against **unfair trade practice with the Consumer Commission electronically** through edaakhil.nic.in. for its speedy and effective redressal.

**What is a Service Charge?**

- It is a **Tip or a direct transaction between customer and restaurant personnel**, specifically wait staff.
- It is a **cost charged for services related to the purchase of a core product or service**.
- It is collected as a fee for serving consumers by the hospitality and food and beverage industries.

**Why were these New Guidelines Issued?**

- There were **enormous complaints registered on the National Consumer Helpline (NCH)** related to the unnecessary levying of service charges in the bill.
- This was being **charged in addition to the total amount** often in guise of some other charges in the bill.

- According to the new rules, **charging a consumer more than the price of food items on the menu plus applicable taxes is now considered a 'unfair trade practise' under the CPA**.

## **Pradhan Mantri Fasal Bima Yojana (PMFBY)**

**Why in News?**

Recently, after opting out in 2019-20, the Andhra Pradesh government has returned to the crop insurance scheme **Pradhan Mantri Fasal Bima Yojana (PMFBY)**.

**What is Pradhan Mantri Fasal Bima Yojana?****About:**

- Launched in 2016 and is being **administered by the Ministry of Agriculture and Farmers Welfare**.
- It replaced the **National Agricultural Insurance Scheme (NAIS) and Modified National Agricultural Insurance Scheme (MNAIS)**.

**Eligibility:**

- Farmers including **sharecroppers and tenant farmers** growing notified crops in the notified areas are eligible for coverage.

**Objectives:**

- To provide **insurance coverage and financial support to the farmers in the event of failure** of any of the notified crops as a result of natural calamities, pests & diseases.
- To **stabilize the income of farmers** to ensure their continuance in farming.
- To encourage farmers to adopt innovative and modern agricultural practices.
- To ensure the flow of credit to the agriculture sector.

**Premium:**

- There will be a **uniform premium of only 2% to be paid by farmers** for all Kharif crops and 1.5% for all Rabi crops.
- In the case of **annual commercial and horticultural crops**, the premium to be paid by farmers will be only 5%.
- The premium rates to be paid by farmers are very low and the balance premium will be paid by the Government to provide full insured amount to the farmers against crop loss on account of natural calamities.

Note:



- **There is no upper limit on Government subsidies. Even if the balance premium is 90%, it will be borne by the Government.**
  - Earlier, there was a **provision of capping the premium rate** which resulted in low claims being paid to farmers.
  - This capping was done to **limit Government's outgo on the premium subsidy.**
  - This capping has now been removed and farmers will get a claim against the full sum insured without any reduction.
- **Use of Technology:**
  - **Crop Insurance App:**
    - Provides for easy enrollment of farmers.
    - Facilitate easier reporting of crop loss within 72 hours of occurrence of any event.
  - **Latest Technological Tools:** To assess crop losses, satellite imagery, remote-sensing technology, drones, artificial intelligence and machine learning are used.
  - **PMFBY Portal:** For integration of land records.
- **Recent Changes:**
  - The scheme was once **mandatory for loanee farmers**; but 2020, the Centre changed it to make it optional for all farmers.
    - Earlier the rate of average premium subsidy including the difference between the actuarial premium rate and the rate of the insurance premium payable by the farmer was shared by the state and center, further states and UTs were free to extend additional subsidies over and above the average subsidy from their budgets.
  - The Centre decided in February 2020 to **limit its premium subsidy to 30% for unirrigated areas and 25% for irrigated ones** (from the existing unlimited). Previously, the central subsidy had no upper limit.

### ***What were the Issues Related to the Scheme?***

- **Financial Constraints of States: The financial constraints of the state governments and low claim ratio during normal seasons are the major reasons** for non-implementation of the Scheme by these States.
- States are **unable to deal with a situation** where insurance companies compensate farmers less than the premium they have collected from them and the Centre.

- The State governments **failed to release funds on time** leading to delays in releasing insurance compensation.
- This defeats the very purpose of the scheme which is to provide timely financial assistance to the farming community.
- **Claim Settlement Issues: Many farmers are dissatisfied with both the level of compensation** and delays in settlement.
  - The role and power of Insurance companies is significant. In many cases, **it didn't investigate losses** due to a localised calamity and, therefore, did not pay the claims.
- **Implementation Issues: Insurance companies have shown no interest in bidding** for clusters that are prone to crop loss.
  - Further, it is in the nature of the insurance business for entities to make money when crop failures are low and vice-versa.

## **NIRF Rankings 2022**

### ***Why in News?***

Recently, the Ministry of Education has released 7<sup>th</sup> Edition of **National Institutional Ranking Framework (NIRF) Rankings 2022.**

### ***What is the National Institutional Ranking Framework?***

- **Launch:** The National Institutional Ranking Framework (NIRF) was approved by the Ministry of Education (Erstwhile Ministry of Human Resource Development) in September 2015.
  - It is the first-ever effort by the government to rank **Higher Education Institutions (HEIs)** in the country.
  - Participation in NIRF was made compulsory for all government-run educational institutions in 2018.
- **Assessment on Five Parameters:**
  - Teaching, Learning and Resources (TLR)
  - Research and Professional Practice (RP)
  - Graduation Outcomes (GO)
  - Outreach and Inclusivity (OI)
  - Peer Perception.
- **11 Categories:** Best institutions across **11 categories are listed out** - overall national ranking, universities,

Note:



engineering, college, medical, management, pharmacy, law, architecture, dental and research.

- **Reason for Launch:** The subjectivity in the ranking methodology developed by **QS World University Rankings and the Times Higher Education World University Ranking** led India to start its own ranking system for Indian HEIs on the line of Shanghai Rankings.
  - The long-term plan of NIRF is to make it an international league table.
- **No. of Participating Institutions in 2022:** More than **7,000 institutes participated** in NIRF Rankings.

### **What are the Highlights of the Ranking 2022?**

- **Overall:** IIT-Madras, IISc-Bangalore, and IIT-Bombay the country's top three higher education institutions
- **University:** IISc, Bengaluru tops the category.
- **Colleges:** Miranda College retains 1<sup>st</sup> position amongst colleges for the 6<sup>th</sup> consecutive year, followed by Hindu College, Delhi and Presidency College Chennai.
- **Research Institution:** IISc, Bengaluru is ranked the best research institution followed by IIT Madras.
- **Engineering:** Among engineering institutions, IIT-Madras remained number one.
- **Management:** Indian Institute of Management (IIM) Ahmedabad was ranked one followed by IIM Bengaluru.
- **Medical:** All India Institute of Medical Sciences, New Delhi occupies the top slot in Medical for the fifth consecutive year.
- **Pharmacy:** Jamia Hamdard tops the list in Pharmacy subject for the fourth consecutive.
- **Architecture:** IIT Roorkee takes the top slot for the **second time** in Architecture subject.
- **Law:** National Law School of India University, Bengaluru retains its first position in Law for the fifth consecutive year.
- **Dental:** Saveetha Institute of Medical and Technical Sciences, Chennai got the 1<sup>st</sup> Rank.

## **Coalition for Disaster Resilient Infrastructure (CDRI)**

### **Why in News?**

The Union Cabinet approves categorizing the **Coalition for Disaster Resilient Infrastructure (CDRI)** as an **"International Organization"**.

- It also approved the signing of the **Headquarters Agreement** further granting it the exemptions, immunities, and privileges contemplated by the United Nations (Privileges and Immunities) Act, 1947, which means that member's property and assets wherever located and by whomsoever held, shall **enjoy immunity from every form of legal process** except in any particular case it has expressly waived its immunity.

### **What is its Significance of the Categorisation?**

- **Expert Consultations:**
  - It would help in **delegating experts to other countries** that are particularly vulnerable to disaster risk and/or require assistance with post-disaster recovery, as well as bringing experts from member countries to India for similar purposes.
  - It will **make technical expertise available** to assist countries in developing resilient infrastructure in accordance with their disaster and climate risks and resources;
  - It will **provide assistance to countries in developing appropriate risk governance arrangements** and resilient infrastructure strategies.
- **Enhanced Funding and Cooperation:**
  - It will help in deploying funds globally and receiving contributions from member countries for CDRI activities.
  - It will **provide all possible assistance to member countries** in upgrading their systems to ensure disaster and climate resilience of existing and future infrastructure, in accordance with the **Sustainable Development Goals (SDGs)**, the **Paris Climate Agreement**, and the **Sendai Framework for Disaster Risk Reduction**.
  - It will **use international engagement to foster disaster-resilient infrastructure** at home and providing an opportunity for Indian scientific and technical institutions as well as infrastructure developers to interact with global experts.

### **What is Coalition for Disaster Resilient Infrastructure (CDRI)?**

- **About:**
  - CDRI is a global partnership of national governments, **United Nations** agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and academic and research institutions.

Note:



- It aims to **increase the resilience of infrastructure systems to climate and disaster risks**, thereby ensuring **sustainable development**.
- It was launched in 2019, at the **United Nations Climate Action Summit** in New York.
- It is the Government of India's **second major global initiative** after the **International Solar Alliance**, and it demonstrates India's leadership in climate change and disaster resilience issues.
- **Members:**
  - Since its inception, **31 countries, 6 international organisations and 2 private sector organisations** have joined CDRI as members.
    - **6 International Organisations:** **Asian Development Bank (ADB), World Bank Group, United Nations Development Programme (UNDP), United Nations Office for Disaster Risk Reduction (UNDRR), European Union, European Investment Bank.**
    - **2 Private Sector Organisations:** **The Private Sector Alliance for Disaster Resilient Societies and Coalition for Climate Resilient Investment.**
  - CDRI has steadily increased its membership by attracting a diverse range of economically advanced, developing, and vulnerable countries to climate change and disasters.

## Decline in Immunisation Coverage

### **Why in News?**

Recently, a report by **World Health Organisation (WHO)** and **United Nations Children's Fund (UNICEF)** highlighted the impact of **covid-19 pandemic** on immunisation programs globally and in India as well.

- DPT vaccine is considered a marker for immunization coverage across countries.

### **What is Diphtheria, Tetanus, and Pertussis (DPT)?**

#### ➤ **Diphtheria:**

- **Caused by:**
  - Diphtheria is primarily caused by the **bacterium *Corynebacterium diphtheriae***.
- **Symptoms:**
  - Common cold, fever, chills, swollen gland in neck, sore throat, bluish skin etc.

- **Spread:**
  - It is mainly spread by coughs and sneezes, or through close contact with someone infected.
- **Target Population:**
  - Diphtheria particularly affects children **aged 1 to 5 years**.
  - Occurrence of diphtheria cases in under-five children reflects **low coverage** of primary diphtheria vaccination.
- **Tetanus:**
  - **Caused by:**
    - Tetanus is acquired through infection of a cut or wound with the spores of the bacterium *Clostridium tetani*, and most cases occur within 14 days of infection. Tetanus cannot be transmitted from person to person.
  - **Prevention:**
    - Tetanus can be prevented through immunization with Tetanus-Toxoid-Containing Vaccines (TTCV). However, people who recover from tetanus do not have natural immunity and can be infected again.
  - **Symptoms:**
    - Jaw cramping or the inability to open the mouth.
    - muscle spasms often in the back, abdomen and extremities.
    - sudden painful muscle spasms often triggered by sudden noises.
    - Seizures.
- **Pertussis:**
  - **Caused by:**
    - Pertussis, also known as **whooping cough**, is a highly contagious respiratory infection caused by the **bacterium *Bordetella pertussis***. In 2018, there were more than 151 000 cases of pertussis globally.
    - The disease is most dangerous in infants, and is a significant cause of disease and death in this age group.
  - **Spread:**
    - Pertussis spreads **easily from person to person mainly through droplets** produced by coughing or sneezing.

Note:



### What are the Key Highlights of the Report?

- Three million children have not received the first dose of the Diphtheria, Tetanus, and Pertussis (DTP) vaccine in 2020.
- The percentage of children worldwide who have received three doses of the DTP vaccine **declined by five percentage points between 2019 and 2021**.
  - With just 8% coverage worldwide it's the **largest sustained decline in childhood vaccination**.
- Around **25 million children globally missed out on or more doses of the DTP vaccine in 2021 alone**, which is two million more than those who left out in 2020 and six million more than in 2019.
- Over **24 million children missed out on their first measles vaccine dose in 2021**, over five million more than in 2019.
- Compared with 2019, 6.7 million more children missed out on the third dose of the polio vaccine and 3.5 million missed the first dose of the **Human papillomavirus (HPV) vaccine**, which protects girls against cervical cancer later in life.
- The **coverage of vaccines dropped in every region whereas East Asia and the Pacific region** recorded the steepest reversal:
  - **Around 18 million of the 25 million children who did not receive a single DTP dose in 2021** belong to low- and middle-income countries, with India, Nigeria, Indonesia, Ethiopia, and the Philippines recording the highest numbers,
  - **Myanmar and Mozambique record the largest increase in the number of children who didn't receive a single vaccine between 2019 and 2021**.

### What are the Contributing Factors for the Decline?

- The decline was due to **many factors including an increased number of children** living in conflict and fragile settings where immunization access is often challenging.
- It was also due to **increased misinformation and Covid-19-related issues** such as service and **supply chain disruptions**, resource diversion to response efforts,

and containment measures that limited immunization service access and availability.

### What was the India's Performance?

- Annually, India vaccinates more than 30 million pregnant women and 27 million children through its universal immunisation programme.
- India **prevented further backslide by introducing catchup programs** like **Intensified Mission Indradhanush 3.0**, which helped in **reducing the number of children who had left the first dose from 3 million to 2.7 million in 2021**, as compared to 2019 when 1.4 million children didn't receive the first dose.
- India effectively **avoided a drop in coverage by the early restoration of routine immunisation services**, along with evidence-based catch-up programmes, which enabled it to avoid a drop in routine immunisation coverage.
- India also launched the **Intensified Mission Indradhanush 4.0** in February 2022 with the aim to immunize every pregnant woman and child who had missed their vaccination.

### What are the related Global Initiatives?

- **Global Immunization Agenda 2030 (IA2030):**
  - It is a **strategy for all countries and relevant global partners** to achieve set goals on disease prevention through immunisation and vaccine delivery to everyone, everywhere, at any age.
  - **WHO** and UNICEF are collaborating with **Gavi**, the Vaccine Alliance, and other partners to implement the **Global Immunization Agenda 2030 (IA2030)**.
- **World Immunisation Week:**
  - World Immunization Week is **celebrated every year** in the last week of April.
  - It aims to **promote the use of vaccines** to protect people of all ages against disease.
  - Immunisation describes the process whereby people are protected against illness caused by infection with microorganisms (formally called pathogens). The term vaccine refers to the material used for immunisation.



Note:



# Economic Scenario

## Highlights

- Promoting NER as Agri Export Hub
- Open Acreage Licensing Programme
- International Day of Cooperatives
- RBI allows Trade Settlements in Rupee
- India's Defence Exports
- Small Savings Schemes
- Exit of Foreign Portfolio Investors
- Financial Services Institution Bureau
- States' Startup Ranking 2021
- Development of Enterprise and Service Hubs Bill

## Promoting NER as Agri Export Hub

### Why in News?

**Agricultural and Processed Food Products Development and Authority (APEDA)** has devised a strategy to promote Export of Agricultural and Horticulture products grown in **North-Eastern (NE) states**.

- **Created a platform in Assam** for the exporters to get the products directly from the producer group and the processors.
  - The platform **will link the producers and processors of Assam and exporters from other parts of the country** that would expand the base of the export pockets in the **North-Eastern states**.

### What is the Significance of NER in Agri Exports?

- The NE region is **geopolitically important as it shares international boundaries** with China and Bhutan, Myanmar, Nepal and Bangladesh making it the potential hub for the export of agricultural produce to neighbouring countries as well as other foreign destinations.
- It witnessed an **85.34 % growth in the export of agricultural products** in the last six years as it increased from USD 2.52 million in 2016-17 to USD 17.2 million in 2021-22.
  - The major destination of export has been Bangladesh, Bhutan, the **Middle East**, the UK and Europe.
- Assam and the other states of North East Region have **a favourable climate condition and the soil type for growing almost all agricultural and horticultural crops**.

- The NER produces huge marketable surplus in a number of perishable commodities, such as banana, pineapple, orange and tomato.

### What are the Initiatives to Promote NER as Agri Export Hub?

- **Mission Organic Value Chain Development for North East Region (MOVCD-NER)**: It is a Central Sector Scheme, a sub-mission under National Mission for Sustainable Agriculture (NMSA), launched by the Ministry of Agriculture and Farmers Welfare for implementation in the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, during the 12<sup>th</sup> plan period.
  - The scheme aims to development of certified organic production in a value chain mode to link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification, to the creation of facilities for collection, aggregation, processing, marketing and brand building initiative.
- **Training Programmes**:
  - APEDA signs a MoU with Assam Agriculture University, Jorhat to conduct **various training programmes on pre-harvest and post-harvest management** and other research activities for the promotion of export from the region.
- **Virtual Buyer Seller Meet**:
  - During **Covid-19 period**, APEDA continued to push its export plans through Virtual Buyer Seller Meet in association with the Embassy of India located in different countries with exporters from NER regarding the sourcing of pineapple, ginger, lemon, orange, etc.

Note:



- **Trade Fairs:**
  - APEDA also organised **Virtual Trade Fairs** during the pandemic and facilitated the export to foreign countries.
- **Branding Local Products:**
  - APEDA also extended its support for branding and promotion of North East products such as KIWI Wine, processed foods, carrying out a wet sampling of Joha Rice Pulao, Black Rice kheer, etc.
- **Capacity building:**
  - APEDA organised skill development programmes for manufacturers, exporters and entrepreneurs to utilise the local produce for value addition.
- **Workshop on Food Quality and Safety management:**
  - APEDA facilitated a **workshop on Food Quality and Safety Management** for Export of Processed Food Products for boosting exports of agricultural and processed food products from NER through **sustainable food value chain development**.

## Open Acreage Licensing Programme

### Why in News?

Recently, the Government of India has launched the OALP Bid Round-VIII, offering 10 blocks for International Competitive Bidding.

### What do we know about OALP?

- **The Hydrocarbon Exploration and Licensing Policy (HELP)** replacing the erstwhile **New Exploration Licensing Policy (NELP)** was approved in March 2016 and the **Open Acreage Licensing Policy (OALP)** along with the **National Data Repository (NDR)** were launched in June 2017 as the key drivers to accelerate the Exploration and Production (E&P) activities in India.
- Under OALP, **companies are allowed to carve out areas they want to explore oil and gas in**. Companies can put in an expression of interest for any area throughout the year but such interests are accumulated thrice in a year. The areas sought are then put on auction.

### What do we know about HELP?

- **About:**
  - It stands for **Hydrocarbon Exploration and Licensing Policy**.

- The new policy promises simpler rules, tax breaks, pricing and marketing freedom and is part of a government strategy to double oil and gas output by 2022-23.

### ➤ Functions of HELP:

- **Uniform Licensing**
  - HELP provides for a uniform licensing system that will cover **all hydrocarbons** such as **oil, gas**, and coal bed methane.
    - Under NELP, separate licenses were issued for exploring different types of hydrocarbons.
    - This leads to additional costs, as a separate license is required if a different type of hydrocarbon is found while exploring a certain type.
- **Revenue Sharing Model**
  - **HELP provides for a revenue sharing model**, the government will receive a share of the gross revenue from the sale of oil, and gas, etc and will not be concerned with the cost incurred.
    - The NELP was **profit sharing model**, where profits are shared between Government and the contractor after recovery of cost.
    - Under NELP, it became necessary for the Government to scrutinize cost details of private participants and this led to many delays and disputes.
- **Pricing**
  - HELP has marketing and pricing freedom.
    - Before HELP, contracts were based on production sharing with the possibility of gold plating (**incorporation of costly and unnecessary features**) the investment and causing loss to the government by 'manipulating profit'.
    - To reduce the complexity of handling contracts, it was changed to revenue sharing.
  - Under the new system, a graded system of royalty rates were introduced.
    - Under this system the royalty rates will decrease from shallow water (**where cost of exploration and risks are lower**) to deep water (**where cost and risks are higher**) to ultra-deep water areas.

### What are the Advantages of HELP?

- It provides for marketing freedom for **crude oil** and **natural gas** produced from these blocks. This is in

Note:



tune with the Government's policy of "**Minimum Government –Maximum Governance**".

- Under NELP, it became necessary for the Government to scrutinize cost details of private participants and this led to many delays and disputes. HELP is in tune with the Government's efforts to promote '**Ease of Doing Business**'.
- HELP marks the biggest transition from an era of government control to government support for upstream E&P (exploration, development and production) in India.
  - OALP removes restrictions on exploration by giving companies both the data and the discretion to explore areas of their choice.

## International Day of Cooperatives

### Why in News?

Recently, 100<sup>th</sup> International Day of Cooperatives was observed.

- India celebrated the day under the theme "**Building a Self-Reliant India and a Better World through Cooperatives**".

### What is International Day of Cooperatives?

- **Historical Perspective:**
  - The International Day of Cooperatives was **declared by the United Nations General Assembly on 16<sup>th</sup> December 1992, on the first Saturday of July.**
  - The purpose of this festival is to **promote cooperatives globally and foster an environment that will foster their expansion and profitability.**
  - The occasion highlights the **cooperative movement's contributions to tackling the major issues addressed by the United Nations as well as to enhancing and expanding the alliances between the cooperative movement internationally and other actors.**
- **Significance:**
  - It aims to **raise awareness** of cooperatives and further the values of the movement—
    - International solidarity,
    - Economic efficiency,
    - Equality,
    - Global peace.

- **Theme for 2022:**
  - Cooperatives Build a Better World.

### What are Co-operatives?

- **About:**
  - **Co-operatives** are people-centered enterprises owned, controlled and run by and for their members to realize their common economic, social, and cultural needs and aspirations.
  - Cooperatives bring people together in a **democratic and equal way**. Whether the members are the customers, employees, users or residents, cooperatives are **democratically managed by the 'one member, one vote'** rule.
    - Members share equal voting rights regardless of the amount of capital they put into the enterprise.
- **Indian Perspectives:**
  - India has the **greatest cooperative movement** in the entire globe. Cooperatives, which currently **account for over 8.5 lakh villages in India**, are essential institutions for **fostering socioeconomic development for inclusive growth in both rural and urban areas.**
  - Some of the well-known **success stories of the cooperative movement in India** include;
    - AMUL (Anand Milk Union Limited),
    - **IFFCO (Indian Farmers Fertilizer Cooperative Limited),**
    - KRIBHCO (Krishak Bharati Cooperative Limited),
    - **NAFED(National Agricultural Cooperative Marketing Federation of India Ltd).**

### What are the Related Government Initiatives?

- Recently, the **Ministry of Cooperation** was established by the Union Government in July 2021. Following its creation, the ministry has been **actively working on developing a new cooperation policy and programmes.**
- There is an **immense potential for the development and empowerment of farmers, agriculture, and rural areas of the country in the cooperative sector.**
- The **computerization of Primary Agricultural Credit Societies (PACS)** has recently been approved by the Union Cabinet, **strengthening the cooperative sector by enhancing PACS' efficiency, bringing accountability and transparency to their operations, and enabling PACS to diversify their business** and offer a variety of products and services.

Note:



### What are the Challenges faced by the Cooperatives?

- **Neglected by the Policy Makers:** The role of cooperatives has been overlooked by policymakers at various levels **due to their lack of visibility**.
- **Lack of Awareness:** There is a lack of awareness about business strategies and knowledge about how the market works.
- **Lack of Funding and Capabilities:** Whether public or private sector, both are not showing any amount of confidence in this sector, as there is **little or no financial support for cooperatives**, so this harms their potential.
- **Poor Management:** In some cooperatives, due to the **lack of understanding of the market and poor level of skill set** of workers, many cooperatives underperform and are not able to provide the desired results.

## RBI allows Trade Settlements in Rupee

### Why in News?

Recently, the **Reserve Bank of India (RBI)** has put in place a mechanism to facilitate International Trade in Rupees (INR), with immediate effect.

- However, banks acting as authorised dealers for such transactions **would have to get prior approval from the regulator to facilitate this**.
- As per the broad framework for cross-border trade transactions in INR under **Foreign Exchange Management Act, 1999 (FEMA)**, all exports and imports under this arrangement may be **denominated and invoiced in rupee (INR)** and the exchange rate between the currencies of the two trading partner countries may be **market determined**.

### What is Rupee Payment Mechanism?

- **About:**
  - Authorised Dealer Banks in India had been **permitted to open Rupee Vostro Accounts (an account that a correspondent bank holds on behalf of another bank)**.
  - **Indian importers undertaking imports** via this mechanism will make payment in **INR** which will be **credited into the Special Vostro account** of

the correspondent bank of the partner country, against the invoices for the supply of goods or services from the overseas seller.

## RUPEE SWITCH

The new measure will promote trade growth, with an emphasis on exports from India, and support the interest of the trading community in rupee, RBI said.

### India's top trading partners



### COLLATERAL GAIN

**THE** pressure on India's forex reserves is likely to diminish

**RBI'S** measure shows Russia's significance as India's trading partner

**SOME** analysts see RBI's move as a step to stabilize the rupee

- **Indian exporters** using the mechanism will be paid the export proceeds in **INR** from the **balances in the designated Special Vostro account** of the correspondent bank of the partner country.
- Indian exporters **may receive advance payment** against exports from overseas importers in Indian rupees through the above Rupee Payment Mechanism.
  - Before allowing any such receipt of advance payment against exports, **Indian banks need to ensure that available funds in these accounts are first used towards payment obligations** arising out of already executed export orders / export payments in the pipeline.
  - Balance in Special Vostro Accounts can be used for: payments for projects and investments; export/ import advance flow management; and investment in Government Treasury Bills, **Government securities**, etc.
- **Existing Mechanism:**
  - If a company exports or imports, transactions are always in a foreign currency (**excluding with countries like Nepal and Bhutan**).
  - So, in case of imports, the **Indian company has to pay in a foreign currency** (mainly dollars and could also include currencies like pounds, Euro, yen etc.).

Note:



- The Indian company gets paid in foreign currency in case of exports and the company converts that foreign currency to rupee since it needs rupee for its needs, in most of the cases.

### What are the Benefits of this Mechanism?

- **Promote Growth:**
  - It will promote growth of global trade and will support the increasing interest of the global trading community in INR.
- **Trade with Sanctioned Countries:**
  - Ever since sanctions were imposed on Russia, trade has been virtually at standstill with the country due to payment problems.
    - As a result of the trade facilitation mechanism introduced by the RBI, we see the payment issues with Russia easing.
- **Forex Fluctuation:**
  - The move would also reduce the risk of forex fluctuation, especially looking at the Euro-Rupee parity.
- **Arrest Fall of Rupee:**
  - Amid ongoing rupee weakness, this mechanism aims at reducing demand for foreign exchange, by promoting rupee settlement of trade flows.

### What Initiatives has India taken for International Trade?

- **Rupee Rouble Agreement:**
  - The Rupee-Rouble trade arrangement is an alternative payment mechanism to settle dues in Rupees instead of Dollars or Euros.
    - The State Bank of the U.S.S.R. will maintain one or more accounts with one or more commercial banks in India, authorised to deal in foreign exchange. In addition, the State Bank of the USSR will, if that Bank considers necessary, maintain another account with the Reserve Bank of India.
      - Payments made to and by Indian residents and USSR residents will be done only in those specified accounts by debiting/crediting.
- **Free Trade Agreements:**
  - India has recently signed a Free Trade Agreement with Australia & UAE

- FTA is a pact between two or more nations to reduce barriers to imports and exports among them.
- Under a free trade policy, goods and services can be bought and sold across international borders with little or no government tariffs, quotas, subsidies, or prohibitions to inhibit their exchange.
- The concept of free trade is the opposite of trade protectionism or economic isolationism.

### Indo-Pacific Economic Framework:

- India has joined a US-led initiative to set up an Indo-Pacific Economic Framework (IPEF) and this move would help boost economic ties further.
- The US has consistently been India's largest market for services exports, but the recent overseas sales of merchandise goods to that country overtook China, making it the largest bilateral trading nation of India.

## India's Defence Exports

### Why in News?

- India's defence exports for 2021-22 were estimated at Rs 13,000 crore, the highest ever.
- The U.S. was a major buyer, as also nations in Southeast Asia, West Asia and Africa.

### What are the Key Highlights?

- The private sector accounted for 70% of the exports, while public sector firms accounted for the rest.
  - Earlier, the private sector used to account for 90% but now the share of defence public sector units had gone up.
- While India's defence imports from the U.S. have gone up significantly in recent years, Indian companies have been increasingly becoming part of the supply chains of U.S. defence companies.

### What steps have been taken recently to boost defence exports?

- In January 2022, India signed a USD 374.96-million deal with the Philippines, its single biggest defence export order, for the supply of three batteries of shore-based anti-ship variant of the BrahMos supersonic cruise missile.

Note:



- India has **imposed a phased import ban on 310 different weapons** and systems during the last two years, which helped boost export.
  - These weapons and platforms will be indigenised in phases over the next five to six years.
- The **increased partnership with the private sector** has led to a substantial rise in defence exports.

### What is the Status of India's Defence Exports?

- Defence exports are a **pillar of the government's drive to attain self-sufficiency** in defence production.
- Over 30 Indian defence companies have exported arms and equipment to countries like Italy, Maldives, Sri Lanka, Russia, France, Nepal, Mauritius, Sri Lanka, Israel, Egypt, UAE, Bhutan, Ethiopia, Saudi Arabia, Philippines, Poland, Spain and Chile.
- The exports include personal **protective items, defence electronics systems, engineering mechanical equipment, offshore patrol vessels, advanced light helicopters, avionics suits, radio systems and radar systems.**
- However, India's defense exports are still not upto the expected lines.
  - The **Stockholm International Peace Research Institute (SIPRI)** ranked India at number 23 in the list of major arms exporters for 2015-2019.
  - India still accounts for **only 0.17% of global arms exports.**
- Reason for dismal performance in India's Defense exports is that, India's Ministry of Defense so far has no dedicated agency to drive exports.
- India has set a target of clocking defence exports worth USD 5 billion by 2024.

### What are the Initiatives Related to Defence?

- **Defence Production and Export Promotion Policy 2020 (DPEPP 2020):**
  - The **DPEPP 2020** is envisaged as an overarching guiding document to provide a focused, structured and significant thrust to defence production capabilities of the country for self-reliance and exports.
- **Multi-Pronged Steps Towards Self Reliant Defense Sector:**
  - There have been progressive changes with one focus to empower the private industry.

- The **DPP 2016** came out with a new category called **Indian IDDM** (Indigenously Designed, Developed and Manufactured).
- If any Indian company opted for Indian IDDM, it was given preference over all other categories.

### ➤ Strategic Partnership:

- A strategic partnership model allows indian companies to collaborate with **foreign OEMs** and get transfer of technology, get the capability to build, manufacture india and sustain those projects in india.
- The first of the RFP for the **conventional submarines** in functioning.

### ➤ Positive Indigenization:

- For the first time the government is putting a ban on itself to import any item, the Government wants to empower the **indigenous industry.**
- **There are two positive indigenization** lists of 101 items and 108 items that range from platforms to weapon systems to sensors to the entire plethora of items.

## Small Savings Schemes

### Why in News?

Recently, the government kept interest rates unchanged on Small Savings Schemes, including NSC (National Savings Certificate) and PPF (Public Provident Fund), for the second quarter of 2022-23 **amid high inflation and rising interest rate.**

- The interest rate on small savings schemes has not been revised since the **first quarter of 2020-21.**
- A hike in the rate was expected **in view of a surge in yields on government bonds**, to which their returns are linked as per a formula.

### What are the Small Saving Schemes/Instruments?

- **About:**
  - They are the major source of household savings in India and comprise 12 instruments.
  - The depositors get an assured interest on their money.
  - Collections from all small savings instruments are credited to the **National Small Savings Fund (NSSF).**

Note:



- Small savings have emerged as a key source of financing the **government deficit**, especially after the **Covid-19 pandemic** led to a ballooning of the government deficit, necessitating higher need for borrowings.
- **Classification:** Small savings instruments can be classified under three heads:
  - **Postal Deposits** (comprising savings account, recurring deposits, time deposits of varying maturities and monthly income scheme).
  - **Savings Certificates:** National Small Savings Certificate (NSC) and Kisan Vikas Patra (KVP).
  - **Social Security Schemes:** **Sukanya Samridhi Scheme**, Public Provident Fund (PPF) and Senior Citizens' Savings Scheme (SCSS).
- **Determination of Rates:**
  - Interest rates on small savings schemes are reset on a quarterly basis, in line with the movement in benchmark government bonds of similar maturity. The rates are reviewed periodically by the **Ministry of Finance**.
  - The **Shyamala Gopinath panel (2010)** constituted on the **Small Saving Scheme** had suggested a **market-linked interest rate** system for small savings schemes.
- FPI is part of a country's **capital account** and is shown on its **Balance of Payments (BOP)**.
  - The BOP measures the amount of money flowing from one country to other countries over one monetary year.
- They are generally not active shareholders and do not exert any control over the companies whose shares they hold.
- **The Securities and Exchange Board of India (SEBI)** brought new **FPI Regulations, 2019**, replacing the erstwhile FPI Regulations of 2014.
- FPI is often referred to as "**hot money**" because of its tendency to flee at the first signs of trouble in an economy. FPI is more liquid, volatile and therefore riskier than FDI.
- **Significance of FPI:**
  - **Accessibility to International Credit:**
    - Investors may be **able to reach an increased amount of credit** in foreign countries, enabling the investor to utilize more leverage and generate a higher return on their equity investment.
  - **Increases the Liquidity of Domestic Capital Markets:**
    - As markets become more liquid, **they become more profound and broader**, and a more comprehensive range of investments can be financed.
    - As a result, **investors can invest with confidence** knowing that they can promptly manage their portfolios or sell their financial securities if access to their savings is required.
  - **Promotes the Development of Equity Markets:**
    - Increased competition for financing leads to rewarding superior performance, prospects, and corporate governance.
    - As the market's liquidity and functionality evolve, equity prices will become value-relevant for investors, ultimately driving market efficiency.

## Exit of Foreign Portfolio Investors

### Why in News?

June 2022 witnessed the worst **Foreign Portfolio Investor (FPI)** selloff since March 2020 when India announced a **nationwide lockdown** at Rs. 50,000 crore.

- June was also the ninth on the trot that FPIs had sold net of their assets i.e. sold more than they had purchased.

### What Do We Mean by Foreign Portfolio Investors?

- **About:**
  - Foreign portfolio investors are those that invest funds in markets outside of their home turf.
    - Examples of FPIs include stocks, **bonds**, **mutual funds**, **exchange traded funds**, American Depositary Receipts (ADRs), and Global Depositary Receipts (GDRs).

### How Big are FPI In India?

- FPIs are the largest non-promoter shareholders in the Indian market and their investment decisions have a huge bearing on the stock prices and overall direction of the market.
- Holding of FPIs (in value terms) in companies listed on **National Stock Exchange** stood at Rs. 51.99 lakh crore as on 31<sup>st</sup> March 2022, a decrease of 3.36% from

Note:



Rs. 53.80 lakh crore as on 31<sup>st</sup> December 2021 due to the sustained sell-off since October 2021.

- FPIs hold sizeable stakes in private banks, tech companies and big caps like Reliance Industries.
- The US accounts for a major chunk of FPI investments at Rs. 17.57 lakh crore as of May 2022, followed by Mauritius Rs. 5.24 lakh crore, Singapore Rs. 4.25 lakh crore and Luxembourg Rs. 3.58 lakh crore, according to data available from the National Securities Depository Ltd (NSDL).

### What Factors Encourage FPI Moves?

- **Economic Growth:**
  - Promise of attractive returns on the back of **economic growth** draws investors including FPIs into a country's markets.
  - As per data from the National Securities Depositories Ltd. (NSDL), FPIs brought in about Rs. 3,682 crore in 2002.
    - This grew to Rs. 1.79 lakh crore in 2010. This correlates with the concurrent expansion of economic output in that period, despite the 2008 global financial crisis which saw FPI selloffs in that timeframe in the country
  - Likewise, **FPIs withdrew Rs.1.18 lakh crore in March 2020 alone** — the month when India announced a nationwide lockdown, triggering concerns around economic growth.
- **US Federal Reserve:**
  - Rate hikes by the **Federal Reserve** affects not only the US economy, but also shapes the macroeconomic outlook and exerts a certain degree of influence on the **monetary policies** in other emerging economies.
  - **Correlation of Federal Reserve & Indian Markets:**
    - **Emerging economies such as India tend to have higher inflation** and higher interest rates than those in developed countries such as the US and many of the (primarily Western) European nations.
    - As a result, financial institutions, particularly **Foreign Institutional Investors (FIIs)** would want to borrow money in the US at low interest rates in dollar terms and then invest that money in **government bonds** of emerging countries such as India in local currency terms to earn a higher rate of interest.

- When the US Federal raises its domestic interest rates, the difference between the interest rates of the two countries decreases.
  - This makes India less attractive for the currency carry trade, consequently, some of the money may be expected to move out of the Indian markets and flow back to the US.

### Why have FPIs been selling India holdings?

- **Post Pandemic Effects:**
  - Post Pandemic, recovery in the Indian economy has been uneven.
  - The **second wave of the Covid-19** pandemic in 2021 devastated lives and livelihoods.
    - The economy stuttered again when a third, albeit less severe, wave saw the spread of the **Omicron variant** early in 2021.
  - In addition, the return of pent-up demand in economies worldwide as the pandemic subsided created problems as the pace of recovery caught suppliers off guard, contributing to supplyside shortages.
    - **Pent-up demand describes a rapid increase in demand for a service or product**, usually following a period of subdued spending.
- **Russia Ukraine Conflict:**
  - Sunflower and wheat supplies from these **two nations** were impacted, leading to a rise in global prices for these crops.
    - As supplies in general tightened across the globe, commodity prices too rose and overall inflation accelerated.
    - India witnessed a quickening pace in price rise that stayed above the **Reserve Bank's** upper comfort level of 6% for five months running, touching 7.8% in April, before receding to a slightly less aggressive 7.04% in the subsequent month.
  - The S&P Global India Manufacturing **Purchasing Managers' Index (PMI)** slid to 53.9 in June — the lowest level in nine months — from 54.6 in the previous month. Experts attribute this to inflation pressures, which also dampened business confidence sentiment to a 27 month low in June, as per survey based findings.
- **US Federal Reserve:**

Note:



- Recently, the US Federal Reserve announced the most aggressive interest rate increase in almost 30 years, raising the benchmark borrowing rate by 0.75% points in its battle against surging **inflation**.
  - When the differential between the interest rates in the U.S. and other markets narrows, and if such an occurrence is accompanied by the strengthening of the dollar, then the ability of investors to realize healthy returns is impacted.
- If the Dollar strengthens against the Rupee, then an investor is able to realize fewer Dollars for a given quantum of Rupee assets liquidated.
- Investors tend to exit assets seen as 'risky' such as in emerging markets like India, Brazil or South Africa.
  - Indeed, the Rupee has been **depreciating** against the Dollar.
  - The rupee touched its record low of 79.33 against the greenback in July 2022.

### ***What Impact Does an FPI Selloff Have?***

- **Local Currency:**
  - When FPIs sell their holdings and repatriate funds back to their home markets, the local currency takes a beating.
    - Investors sell rupees in exchange for their home market currency.
    - As supply of the rupee in the market rises, its value declines.
    - As a result, we have to shell out more funds to import the same unit of goods.
- **On Exports & Imports:**
  - India being one of the largest **crude oil** importers of the world.
  - A weaker rupee vis-à-vis a dollar results in more expensive imports of crude oil that may put cost-driven inflationary push across the whole economy and especially in those sectors that are highly sensitive to crude oil price movements.
  - India's exports on the other hand, notably IT and IT-enabled services – will benefit to some extent from a stronger dollar with respect to the rupee.
    - However, the same benefit may not fully accrue to exporters due to strong competition in the export market.
- **Reserves:**
  - India's **foreign exchange reserves** have fallen USD46

billion in the last nine months to USD596.45 billion as on 10<sup>th</sup> June 2022, mainly due to the dollar appreciation and FPI withdrawals.

### ➤ **Other Effects:**

- Foreign investors pulling out can result in a **decline in stocks and equity mutual fund investments**.
- A lower rupee against the dollar keeps import bills higher, pushing inflation even higher than it is now.
  - Higher inflation is detrimental to the overall market. If the rupee does not strengthen, FPI outflows will continue, which is another negative.
  - Travellers and students studying abroad will have to shell out more rupees to buy dollars from banks.

## **Financial Services Institution Bureau**

### ***Why in News?***

The **Cabinet Appointments Committee (ACC)** has passed a government resolution to establish the **Financial Services Institutions Bureau (FSIB) in place of the Banks Board Bureau (BBB)**.

- The new framework was proposed by the **Department of Financial Service, Ministry of Finance**.

### ***What is the Financial Services Institutions Bureau?***

- **About:**
  - The Financial Services Institutions Bureau will **select the chiefs of public sector banks and insurance companies**.
  - The FSIB will have the clear mandate to issue guidelines and select general managers and directors of state-run non-life insurers, general insurers and Financial Institutions.
    - FSIB will be the **single entity** for making **recommendations for appointments of WTD (Whole-time Director) and NEC (Non-executive Chairman) in Public Sector Banks, India Private Limited company and Financial Institutions**.
  - The Department of Financial Services shall first carry out **necessary modifications in the Nationalised Banks (Management and Miscellaneous Provisions) Scheme of 1970/1980 (as amended)**.

Note:



- **Chairman of FSIB:** The ACC has approved the appointment of **Bhanu Pratap Sharma as Initial chairperson of FSIB for two years**. He was the former Chairman of BBB.

#### What are Public Sector Banks (PSB)?

- It is a bank in which the **government holds a major portion of the shares**.
  - Example, **State Bank of India** is a public sector bank, the government holding in this bank is around 60%.

#### What is Financial Institution (FI)?

- A **financial institution** is an umbrella term for a company dealing with financial and monetary transactions, including loans, deposits, and/or investments.
  - All India Financial Institutions (AIFIs) are **regulated and supervised by the Reserve Bank of India**.
  - **Examples:**
    - National Bank for Financing Infrastructure and Development (NaBFID)
    - **Export-Import Bank of India (EXIM Bank)**
    - National Bank for Agriculture and Rural Development (NABARD)
    - National Housing Bank (NHB)
    - Small Industries Development Bank of India (SIDBI)

#### What is the Banks Board Bureau (BBB)?

- **Background:**
  - The Banks Board Bureau (BBB) has its genesis in the recommendations of '**The Committee to Review Governance of Boards of Banks in India, May 2014 (Chairman - P. J. Nayak)**'.
- **Formation:**
  - The government, in 2016, approved the constitution of the BBB to make recommendations for appointment of **whole-time directors** as well as **non-executive chairpersons of Public Sector Banks (PSBs) and state-owned financial institutions**.
    - It was an **autonomous recommendation body**.
  - The Banks Board Bureau was a public authority as defined in the **Right to Information Act, 2005**.
  - The **Ministry of Finance** has the final decision-making authority on the appointments in consultation with the **Prime Minister's Office**.

#### ➤ Functions:

- Apart from recommending personnel for the PSBs, the Bureau had also been assigned with the task of **recommending personnel for appointment as directors in government-owned insurance companies**.
- It was also entrusted with the task of engaging with the board of directors of all PSBs to **formulate appropriate strategies for their growth and development**.

#### ➤ Issues:

- **Delhi High Court had struck down the BBB's power to select directors of Public Sector Undertaking, general insurance companies** and the government has already implemented the verdict by cancelling all the appointments of the then serving directors who were selected by the BBB.
- **Delhi High Court in 2020 ruled that the BBB couldn't select the general managers and directors of state-run general insurers, as it was not a competent body.**
  - **New India Assurance**, the country's largest general insurer, has been **functioning without a regular CMD for almost 100 days**.
  - The **CMD post at Agriculture Insurance Company also fell vacant**.

## States' Startup Ranking 2021

### Why in News?

The results of the **3<sup>rd</sup> edition of Ranking of States on Support to Startup Ecosystems** were released by the **Ministry of Commerce and Industry**.

- Earlier, the Ministry of Commerce and Industry released a **Ease of Doing Business (EoDB) Ranking**, which is based on Business Reforms Action Plan (BRAP) report 2020.

### What is States' Startup Ranking?

#### ➤ About:

- The **Start-up India initiative** of the Government of India envisages to **build a robust Start-up ecosystem in the country for nurturing innovation and providing opportunities to budding entrepreneurs**.
  - The **Department for Promotion of Industry and Internal Trade (DPIIT)** under the Ministry

Note:



of Commerce and Industry has been conducting the **States' Start-up Ranking Exercise since 2018**.

- The exercise plays a crucial role in easing the business environment for start-ups in the country.

➤ **Objectives:**

- Help bring to fore progress made by the States/ UTs for **promoting Startup ecosystem**.
- **Foster competitiveness** & propel the States/ UTs to work proactively.
- Facilitate States/ UTs to **identify, learn and replicate good practices**.

➤ **Classification:** States and Union Territories are classified into 5 Categories,

- Best Performers
- Top Performers
- Leaders
- Aspiring Leaders
- Emerging Start-up Ecosystems.

**How about the Rankings 2021?**

➤ **7 broad Reform Areas:**

- The participants were **evaluated across 7 broad Reform Areas consisting of 26 Action Points** ranging from,
  - Institutional Support
  - Fostering Innovation and Entrepreneurship
  - Access to Market
  - Incubation support
  - Funding Support
  - Mentorship Support to Capacity Building of Enablers.



➤ **Result:**

- **Gujarat and Karnataka** appeared as the **Best Performers in the States category**.
  - **Meghalaya top among UTs** and North-eastern States category.
- **Kerala, Maharashtra, Orissa and Telangana** won the **Top Performers** award among states category.
  - **Jammu and Kashmir** appeared as the **Top Performer among UTs** and NE states category.

**What are the Related Initiatives?**

- **Open Network for Digital Commerce**
- **Fisheries Startup Grand Challenge**



- **Start Up India Fund**
- **Policy Reforms for Startups**
- **Start-up Cells**
- **National Startup Advisory Council**
- **Aatmanirbhar Bharat ARISE-Atal New India Challenge**
- **AIM-iCREST**

## Development of Enterprise and Service Hubs Bill

**Why in News?**

The Government plans to table the **Development of Enterprise and Service Hubs (DESH) Bill** during the upcoming **monsoon session of the Parliament**.

**What is DESH Bill?**

- It will overhaul the existing **Special Economic Zone law of 2005**, aims to revive interest in SEZs and develop more inclusive economic hubs.

Note:



- SEZs **will be revamped and renamed as Development hubs** and will be free from a number of the laws that currently restrict them. These hubs will **facilitate both export-oriented and domestic investment**, playing the dual role of domestic tariff area and SEZ.
- The government **may impose an equalization levy on goods or services** supplied to the domestic market to bring taxes at par with those provided by units outside.

### **Why replace the existing SEZ Act?**

- WTO's dispute settlement panel has ruled that **India's export-related schemes, including the SEZ Scheme, were inconsistent with WTO rules** since they directly linked tax benefits to exports.
- Countries are not allowed to **directly subsidize exports as it can distort market prices**.
- SEZ started declining **after the introduction of minimum alternate tax** and a **sunset clause** to remove tax sops.
  - SEZ units used to **enjoy 100% income tax exemption on export** income for the first five years, 50% for the next five years, and 50% of the ploughed back export profit for another five years.

### **How is the DESH Legislation Significant?**

- **Development Hubs:**
  - Beyond promoting exports it has a **much wider objective of boosting domestic manufacturing and job creation** through 'development hubs'.

- These hubs **will no longer be required to be net foreign exchange positive cumulatively** in five years (i.e, export more than they import) as mandated in the SEZ regime, and will be allowed to sell in the domestic area more easily.
- The hubs will, therefore, be **WTO-compliant**.
- **Online Portal for Approvals:**
  - DESH legislation provides for **an online single-window portal for the grant of time-bound approvals** for establishing and operating the hubs.
- **Boost Domestic Market:**
  - Companies can sell in the **domestic market with duties only to be paid on the imported inputs and raw materials** instead of the final product.
    - In the current SEZ regime, duty is paid on the final product when a product is sold in the domestic market. Besides, there is no mandatory payment requirement in forex, unlike in the case of SEZs.
- **Larger role for States:**
  - State boards **would be set up to oversee the functioning of the hubs**. They would have the powers to approve imports or procurement of goods and monitor the utilization of goods or services, warehousing, and trading in the development hub.
    - In the SEZ regime, most decisions were made by the commerce department at the Centre. Now, states will be able to participate and even directly send recommendations for development hubs to a central board for approval.



Note:



# International Relations

## Highlights

- BRICS Labour and Employment Ministers' Meeting 2022
- I2U2 Summit and Food Security
- Genomics Democracy
- Sri Lanka's Crisis
- G-20 Foreign Ministers Meeting
- India-Australia Critical Minerals Investment Partnership
- The African Union at 20
- India-Tajikistan Bilateral Relations
- Mekong – Lancang Cooperation
- India-EU Trade and Investment Agreements

## BRICS Labour and Employment Ministers' Meeting 2022

### Why in News?

Recently, the Union Minister for Labour & Employment attended the **BRICS (Brazil, Russia, India, China and South Africa)** Labour and Employment Ministers' Meeting held under the Chinese Presidency.

### What is BRICS?

#### ➤ About:

- BRICS is **an acronym for the grouping** of the world's leading emerging economies, namely **Brazil, Russia, India, China, and South Africa**.
- In 2001, the British Economist Jim O'Neill coined the term BRIC to describe the four emerging economies of Brazil, Russia, India, and China.
- The grouping **was formalised during the first meeting of BRIC Foreign Ministers in 2006**.
- South Africa was invited to join BRIC in December 2010, after which the group adopted the acronym BRICS.

#### ➤ Share of BRICS:

- The BRICS brings together five of the largest developing countries of the **world, representing 41% of the global population, 24% of the global GDP and 16% of the global trade**.

#### ➤ Chairmanship:

- The chairmanship of the forum is rotated annually among the members, in **accordance with the acronym B-R-I-C-S**.
- China is the chair for 2022.

### What are the Key Highlights?

#### ➤ Discussed Three Priority Areas:

- **Promoting Green Jobs** for Sustainable Development
- Developing Skills for Resilient Recovery
- Protecting **Workers' Right in New Forms of Employment**.

### What are 'green jobs'?

- 'Green jobs' refer to a **class of jobs that directly have a positive impact on the planet**, and contribute to the overall environmental welfare.
- Jobs involving renewable energy, conservation of resources, ensuring energy efficient means are categorised under the same.
- In all, they're **aimed at reducing the negative environmental impact** of economic sectors and furthering the process of creating a low-carbon economy.
- The idea behind a **low-carbon economy or decarbonisation** is fairly simple — it is about maintaining a sustainable economy, one that doesn't lead to vast emissions of **greenhouse gasses**, especially **carbon dioxide**.

#### ➤ Indian Stand:

- India elucidated the **steps taken by India to provide relief to workers during the pandemic**.
  - Highlighted various initiatives taken towards providing **free ration**, enhancing the number of days of assured employment under **MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Scheme)**, **collateral free loans** provided to 2.9 million street vendors to help them resume their businesses under **PMSVANidhi Yojana** during the **Covid-19 pandemic**.

Note:



- The **Climate change** is necessitating a shift towards **more sustainable development** and green jobs.
- A **Sector Council for Green Jobs** has been set up in India to develop strategy and implement programs for **Skill development in green sector**.
- **Declaration Adopted:**
  - One of the significant outcomes of the aforesaid meeting was the **adoption of the BRICS Labour & Employment Ministers' Declaration**.
  - The Declaration recognized the need for promoting green jobs for sustainable development, strengthening of cooperation in skills development and; protection of workers' rights in new forms of employment.

#### What are the Other Related Initiatives?

- **e-Shram Portal**
- **Code on Social Security, 2020**
- **SANKALP programme**
- **STRIVE project**
- **Pradhan Mantri Kaushal Vikas Yojana**
- **National Skill Development Corporation**

## I2U2 Summit and Food Security

### Why in News?

Recently, first **I2U2 (India, Israel, United States and the United Arab Emirates)** leaders' **Summit** was held virtually.

### What are the Key Highlights of the Summit?

- The United Arab Emirates (UAE) announced to invest USD 2 billion in India to develop **Food Parks** across the country.
- India will **provide appropriate land for the project** and will facilitate farmers' integration into the Food Parks.
- The Grouping declared to support a **"hybrid renewable energy project"** in Gujarat, consisting of **300 megawatts (MW) of wind and solar capacity**.
  - The project is expected to be another step in India's quest for "500 GW of non-fossil fuel capacity by 2030".
- The **US and Israeli private sectors will be invited to lend their expertise** and offer innovative solutions that contribute to the overall sustainability of the projects under the Grouping.

### What is I2U2?

#### ➤ About:

- I2U2 stands for India, Israel, the UAE, and the US, and was also referred to as the **'West Asian Quad'**.
- I2U2 was initially formed in October, 2021 **following the Abraham Accords**, to deal with issues concerning **maritime security, infrastructure and transport**.
  - The Abraham Accord is the **first Arab-Israeli peace deal** in 26 years mediated by the USA.

#### ➤ Objectives:

- Its stated aim is to **discuss "common areas of mutual interest, to strengthen the economic partnership in trade and investment in our respective regions and beyond"**.
- Six areas of cooperation have been identified by the countries mutually, and the aim is to **encourage joint investments in water, energy, transportation, space, health, and food security**.

### What is Food Park?

- Food Park is a concept **that aims at establishing the direct linkages from the farm to processing to consumer markets**.
- It comprises Collection Centres (CCs) and Primary Processing Centres (PPCs) linked to a Central Processing Centre.

### What is the Significance of Food Parks?

#### ➤ Tackles Food Insecurity:

- Investments in Food Parks will **help maximize crop yields** and, in turn, **help tackle food insecurity in South Asia and the Middle East**.
- They are aimed at **cutting down "food waste and spoilage"**.
  - India is a major, major food producer in the world.
  - The focus on food and energy security has acquired urgency **in the backdrop of the current military situation in Ukraine** that has unleashed cascading negative effects on food, energy and other sectors.

#### ➤ Increase in Income:

- Farmers' income will multiply and they will come on board.

Note:



- **Streamline Agricultural Supply Chains:**
  - India was chosen as the location for the food project **because of its proximity to Israel and the UAE** that will help in creating a smooth **agriculture supply chain**.

## Genomics Democracy

### Why in News?

Recently, **WHO** Science Council has released a report **“Accelerating access to genomics for global health”** advocating for passing on **Genomic** Technologies to developing countries.

- The report followed **WHO’s 10-year strategy for genomic surveillance of pathogens**.
  - Genomic surveillance has **played a crucial role in the global Covid -19 response**, with countries like South Africa able to make essential contributions in detecting variants due to their capacities in this area.

#### What is WHO Science Council?

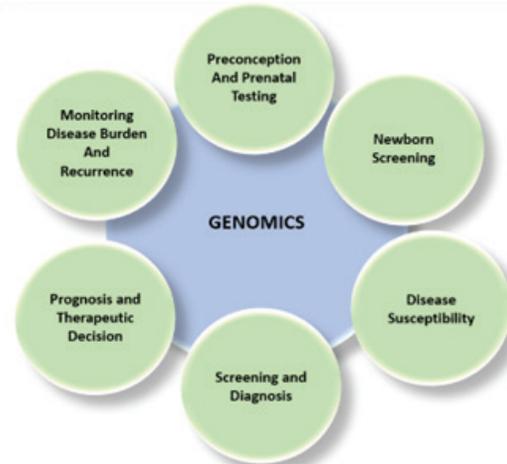
- Established in April 2021 by WHO Director. It is composed of 9 leading **scientists and public health experts from around the world**.
- The council advises the Director on high-priority issues and advances in **science and technology** that could directly improve **global health**.
- It identified **genomics as the focus of its first study**, given the significant implications for public health.

### What are the Highlights WHO’s Report?

- **Access to genomic technologies needs to be expanded**, especially for Low- and Middle-Income Countries (LMIC).
- it is not **ethically or scientifically justifiable** for countries with fewer resources to gain late access to such technologies.
- **Shortfalls in financing, laboratory infrastructure, materials and highly trained personnel** need to be addressed to expand access to genomic technologies.
- The benefits will not be fully realized **unless deployed worldwide**.
  - Only through equity can science reach its full potential impact and improve health for everyone, everywhere.

- The report recommended addressing four themes:
  - Advocacy, implementation, collaboration and associated ethical, legal and social issues.
- The report also recommended WHO create a **Genomics Committee** to take forward the recommendations and monitor their applications.

### What do we need to know about Genomics?



#### About:

- Genomics is the study of all of a person’s genes (the **genome**), including interactions of those genes with each other and with the person’s environment.
- The field of genomics uses **biochemistry, genetics and molecular biology methods** to understand and use **biological information in deoxyribonucleic acid (DNA) and ribonucleic acid (RNA)**.
- The technologies used in genomic science are numerous and continue to expand.
  - Those most fundamental to this field are designed to depict the biological information that is stored in **genomes**—the totality of genetic information in all animals, plants, and microbes, including viruses— as nucleotide sequences of **DNA** (or occasionally **RNA**)

#### Application of Genomics:

- **Control Infectious Disease:**
  - Mapping the **evolution of infectious agents**.
  - Assigning **phenotypic**, such as infectivity and pathogenicity, to specific genes.
  - Evaluating an infectious agent’s sensitivity or resistance to drugs.
- **Prevent and Manage Genetic Conditions:**
  - Evaluating carrier status for a **genetic disorder**.

Note:



- Screening for and **diagnosis of single gene disorders**.
- Assessing **disease susceptibility** or predisposition to many **chronic illnesses**.
- Selecting medications based on **mechanism of action or genetic determinants** of metabolism to reduce toxicities.
- **Agriculture:**
  - Cataloguing of **genetic diversity** in the wild and in founder stocks
  - Assessing **genetic profiles** for health and commercial traits
  - Predicting susceptibility and responses to environmental stress
- **Benefits of Genomics:**
  - **Economic:**
    - Direct stimulus to the **commercial for-profit sector** that produces machines and reagents and provides services.
    - Indirect stimulus through **improvements in population health** (improved medical care, quality of life, potentially decreased health care utilization) and the **creation of intellectual property rights**.
    - **Job creation** in academic, medical, and commercial positions
  - **Social and Environment:**
    - Enabling progress in several **United Nations Sustainable Development Goals**, especially **Goals 1-3, concerning poverty, hunger, and health, respectively**.
    - Further, it helps in national and international efforts to conserve marine and land resources (**Goals 14 and 15**).
  - **Health:**
    - Genomics can make enormous contributions to human health, from **surveying populations for infectious agents** — such as the virus that causes Covid-19, to **predicting and treating** a wide variety of diseases, such as cancers and developmental disorders
- **Challenges in Genomics:**
  - In case of genomic information derived from **human subjects**, it has the potential to **violate privacy, create the possibility of discrimination in employment and insurance, confer inappropriate financial gain, or convey cultural disrespect**.

- **Insufficient protection of participants** and the data they provide, risks the abuse of genomic information, while **unduly restrictive rules about the generation, sharing, and use of genomic information, limit the benefits** that such information can provide.

### **What are the Recommendations of the WHO Report?**

- **Promotion of genomics through Advocacy:**
  - Promote the adoption or expanded use of genomics in all **Member States through advocacy by many parties**.
    - WHO should **use its leadership role** in global public health to advocate for the expanded use of genomics in its Member States.
    - WHO should promote **affordable access to genomic technology** globally so that all Member States, especially Low and Middle-Income Countries (LMICs), can adopt and expand the use of genomics for better health and other benefits.
- **Implementation of Genomic Methodologies:**
  - Identify and overcome the **practical issues** that impede the implementation of genomics through **local planning, financing, training of essential personnel, and the provision of instruments, materials, and computational infrastructure**.
    - WHO should provide **guidance to Member States** on best practices for implementation of national or regional genomic programmes.
    - Member States should establish **national programmes** for building or expanding genomic capabilities or join a regional programme.
- **Collaboration among Entities Engaged in Genomics:**
  - Foster **commitments to collaborative activities** to promote all aspects of national and regional programmes that advance genomics in Member States.
    - WHO should **promote international collaborations** on genomics by strengthening effective existing collaborative arrangements and by helping form new ones for specific needs.
    - **Industry, academia, and civil society** should collaborate on the use of genomics to help solve important health problems, especially those prevalent in LMICs.

Note:



➤ **Attention to the Ethical, Legal, and Social Issues (ELSIs) raised by Genomics:**

- Promote **ethical, legal, and equitable use** and responsible sharing of information obtained with genomic methods through **effective oversight and national and international rules and standards in the practice of genomics**.
- **WHO's Genomics Committee** should be the custodian of guidance on how to deal with the ethical and social ramifications of genomics, including the global governance of genomic information.
- **Organizations in Member States**, especially funding agencies, academic institutions, and governmental units should be attentive to ELSIs and to efforts being made by WHO and other international bodies to develop solutions to outstanding issues related to genomic ELSIs

## Sri Lanka's Crisis

### Why in News?

Sri Lanka, a country of 22 million people, is **under the grip of an unprecedented economic turmoil**, the worst in seven decades, leaving millions struggling to buy food, medicine, fuel and other essentials.

- Following the **political and economic instability**, hundreds of anti-government protesters stormed into the Sri Lankan President's residence demanding his resignation.



### What led to recent Sri Lanka Crisis?

- **Background:**

- When Sri Lanka emerged from a 26-year long **civil war** in 2009, its **post-war GDP growth was reasonably high at 8-9% per annum till 2012**.
- However, its average **GDP growth rate** almost **halved** after 2013 as global commodity prices fell, exports slowed down and imports rose.
- Sri Lanka's **budget deficits** were high during the war and the **global financial crisis of 2008** drained its **forex reserves** which led to the country borrowing a USD2.6 billion loan from the **IMF** in 2009.
- It **again approached the IMF in 2016** for another USD1.5 billion loan, however the conditionalities of the IMF further deteriorated Sri Lanka's economic health.

➤ **Economic Factors:**

- **The Easter bomb blasts of April 2019** in churches in Colombo resulting in **253 casualties**, consequently, **dropped the number of tourists** sharply leading to a decline in foreign exchange reserves.
  - The **newly led government by Gotabaya Rajapaksa** in 2019 promised lower tax rates and wide-ranging SoPs for farmers during their campaign.
    - The quick implementation of these ill-advised promises further **exacerbated the problem**.
  - The **Covid-19 pandemic** in 2020 made the bad situation worse -
    - Exports of **tea, rubber, spices and garments** suffered.
    - **Tourism arrivals and revenues** fell further
    - Due to a rise in government expenditures, the **fiscal deficit** exceeded 10% in 2020-21, and the debt to GDP ratio rose from 94% in 2019 to 119% in 2021.
  - The Crisis in Sri Lanka is triggered due to a **shortage of foreign exchange** (forex) reserves, which have dropped by 70% over the last two years to just USD 2 billion by the end of February 2022.
    - Meanwhile, the country has foreign debt obligations of about USD 7 billion for 2022.
- **Sudden Move to Organic Farming:**
- In 2021, **all fertiliser imports were completely banned** and it was declared that Sri Lanka would become a 100% **organic farming** nation overnight.
  - This **overnight shift to organic fertilisers** heavily impacted food production.

Note:



- Consequently, the Sri Lankan President declared an **economic emergency** to contain rising food prices, a depreciating currency, and rapidly depleting forex reserves.
- **China's Debt Trap:**
  - Sri Lanka has **borrowed heavily from Beijing** since 2005 for infrastructure projects, many of which became White Elephants (no longer needed/ useful).
  - Sri Lanka also leased its **Hambantota port** to a Chinese company in 2017 after it **became unable to service the USD 1.4 billion debt** from Beijing used to build it.
  - **Sri Lanka's total debt to China stands at USD 8 billion**, almost one sixth of its total external debt
- **Current Political Vacuum:**
  - Prime Minister Wickremesinghe and President Gotabaya Rajapaksa **signalled the willingness to resign** making way for an all-party government to take over.

### **Why should India worry about Sri Lanka Crisis?**

- **Challenges:**
  - **Economic:**
    - Sri Lanka's share in India's total exports has **declined** from 2.16% in FY15 to just 1.3 per cent in FY22.
    - **Automotive firms** like Tata Motors and TVS Motors have stopped exports of vehicle kits to Sri Lanka and halted production at their Sri Lankan assembly units due to its unstable forex reserves and fuel shortages.
  - **Refugee:**
    - Whenever a political or social crisis has occurred in Sri Lanka, India has **witnessed a large influx of ethnic Tamil community refugees** from the Sinhala Land to India through the Palk strait and Gulf of Munnar.
    - However, India may find it difficult to handle such an influx and needs a robust policy in place to handle the crisis.
    - The state of Tamil Nadu **has already started feeling the impact of the crisis** with the reported arrival of 16 persons from Sri Lanka through illegal means.

### **What Opportunities should India look for?**

- **Opportunities:**

- **Tea Market:**
  - Amid the sudden halt of **tea supply** by Sri Lanka to the global tea market, **India is keen to plug the supply gaps.**
  - India could **strengthen its footprint in Iran** and as well as new markets such as Turkey, Iraq.
  - Big Sri Lankan tea importers from Iran, Turkey, Iraq and Russia are reportedly **visiting India for tea plantations in Assam and Kolkata.**
  - As a result, at recent Kolkata auctions, the average price for orthodox leaf saw an increase of up to 41% compared to corresponding sales last year.
- **Apparel (Clothing) Market:**
  - Many apparel orders from the United Kingdom, European Union, and Latin American countries **are now being diverted to India.**
  - Several orders have been given to companies in Tirupur, the hub of the textile industry in Tamil Nadu.

### **Why Should India assist in Helping Sri Lanka?**

- Sri Lanka has been a **strategically important partner for India.** India can make use of this opportunity to **balance its diplomatic ties with Sri Lanka**, which have been **distant owing to Sri Lanka's proximity with China.**
  - As the disagreement between Sri Lanka and China intensified on the fertiliser issue, **India's fertiliser delivery to Sri Lanka on the latter's request is seen as a positive development in the bilateral relations.**
- Extending diplomatic ties with Sri Lanka will **ease India's effort to keep the Sri Lankan archipelago out of China's 'string of pearls' game in the Indo-Pacific.**
  - To the extent India can extend help to alleviate the hardships of Sri Lankans, it should be done with due care keeping in mind that the optics of its aid matters too.

## **G-20 Foreign Ministers Meeting**

### **Why in News?**

Recently, the External Affairs Minister of India met with the US Secretary of State and Russian Foreign Minister and other counter parts in Bali (Indonesia) on the sidelines of the **G20** Foreign Ministers Meeting.

Note:



- The meeting was held under the theme of “**Building a more peaceful, stable, and prosperous world together**”.

### **What do we know about the recent G20 Meeting?**

- **India & China:**
  - The External Affairs Minister of India met the State Councilor and Foreign Minister of China.
    - India called for an early resolution of all the outstanding issues along the **LAC in Eastern Ladakh**.
      - Recalling the **disengagement** achieved in some friction areas, India reiterated the need to sustain the momentum to complete disengagement from all the remaining areas to restore peace and tranquility in the border areas.
    - Both sides affirmed that the military and diplomatic officials of the two sides should continue maintaining regular contact and looked forward to the next round of Senior Commanders’ meeting at an early date.
    - China appreciated India’s support during its **BRICS** Chairmanship this year and assured China’s support for India’s upcoming G20 and **SCO** Presidency.
- **Other Areas of Discussion:**
  - The meetings indicated the emerging differences within the G20 grouping as **Russia accused the United States** of forcing Europe and the rest of the world to **abandon cheap energy sources** while the US blamed Russia for “**global food insecurity**”.
  - The G20 that includes 20 of the world’s biggest economic powers has a mandate to discuss global economic matters but the Foreign Ministers Meeting in Bali was **dominated by criticism of Russia by the western members**.
  - The **Ukraine war** and its economic fallouts are hinting at a division within the ranks of the global grouping, with the **US, EU, Japan, Canada, Australia, France forming one anti-Russia block** while the rest of the countries **prefer a cautious approach** asking for peaceful resolution of the war in Ukraine.

### **What do we need to know about G20?**

- **About:**
  - It is an **informal group of 19 countries** and the

**European Union (EU)**, founded in 1999, with representatives of the **International Monetary Fund** and the **World Bank**.

- Its members are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States and the EU.
- **Nigeria was meant to be the “20th” member** and was dropped at the last minute due to political troubles at the time.
- The membership **comprises a mix of the world’s largest advanced** and emerging economies, representing about **two-thirds of the world’s population**.
- **Functioning of G20:**
  - The G-20 has **no fixed headquarters**, and the secretariat moves by rotation between the countries hosting or assuming Presidency of the grouping each year.
  - The members are **divided into five groups** (India is in Group 2, along with Russia, South Africa and Turkey).
  - The G-20 agenda that still **depends heavily on the guidance of Finance Ministers** and central Governors is finalised by a unique system of ‘**Sherpas**’, who are special envoys of G-20 leaders.
  - Another feature of the G-20 is ‘**Troika**’ meetings, comprising the countries presiding over the G-20 in the past year, present year, and next year. At present, the Troika is made up of Italy, Indonesia and India.

**G20 members**



### **How has the G20 Evolved over the years?**

- The **Global Financial Crisis (2007-08)** cemented G20’s reputation as the premier crisis management and coordination body.

Note:



- The US, which **held the G20 Presidency in 2008**, elevated the meeting of the Finance Ministers and Central Bank Governors to Heads of State, resulting in the first G20 Summit.
- The Summits in Washington DC, London, and Pittsburgh set the scene for some of the most durable global reforms:
  - **Blacklisting states** in an effort to **tackle tax evasion and avoidance**, provisioning stricter controls on **hedge funds and rating agencies**, making the **Financial Stability Board** an effective supervisory and watchdog body for the global financial system, proposing stricter regulations for **too-big-to fail banks**, refraining members from imposing new barriers to trade etc.
- By the time Covid-19 struck, the G20 had wandered off from its original mission and G20 lost its focus.
  - G20 reinvented itself by widening its agenda to include issues such as **climate change**, **jobs** and **social security issues**, **inequality**, **agriculture**, **migration**, **corruption**, **terror financing**, **drug trafficking**, **food security** and **nutrition**, **disruptive technologies**, and meeting the **sustainable development goals**.
- In recent times, G20 members have made all the right commitments after the pandemic, but there is little to show in action.
  - At the **Riyadh Summit in October 2020**, they **prioritised four things**: fighting the pandemic, safeguarding the global economy, addressing international trade disruptions, and enhancing global cooperation.
  - The **Italian Presidency in 2021** had focused on **three broad, interconnected pillars of action** — People, Planet, Prosperity — vowing to take the lead in ensuring a swift international response to the pandemic.

### **What is India's Potential for the G20 Presidency?**

- As a founding member of the G20, India has used the platform to raise issues of vital importance and those that impact on the most vulnerable around the world.
  - But due to the rising toll of **unemployment** rates and **poverty** in the domestic portion, it's hard to take the lead effectively.
- Concurrently, India's leadership role in delineating the success of India-France led **International Solar**

**Alliance** is globally well acclaimed as a turning point intervention in mobilising resources towards promoting research and development in **renewable energy**.

- Also, the vision of **'Self Reliant India (Atmanirbhar Bharat)'** initiative is expected to play a transformational role for **"New India"** in the global paradigm as an important and reliable pillar of world economy and global supply chains in the aftermath of Covid -19 crisis.
- India's endeavour of establishing the **Coalition for Disaster Resilient Infrastructure**, comprising nine of the G20 nations amongst others provides new dimensions of leadership in the global growth process.

### **What are the Challenges G20 Facing?**

- **Global:**
  - **Polarisation of Interests:**
    - Russian and Ukrainian Presidents are invited to the G20 Summit to be held in November, 2022.
      - The U.S. has already demanded to not invite Russian President, or U.S. and European countries would boycott his address.
    - China's strategic rise, **NATO's** expansion and Russia's territorial aggression in Georgia and **Crimea** and now Russia Ukraine Conflict in 2022 changed global priorities.
    - **Globalisation** is no longer a cool word, and multilateral organisations have a credibility crisis as countries around the world pick being 'G-zero' (a term coined by political commentator **Ian Bremmer** to denote 'Every Nation for Itself') over the **G-7**, **G-20**, **BRICS**, **P-5 (UNSC Permanent Members)** and others.
  - **Other Challenges:**
    - **International Finance:**
      - According to the recent **IMF World Economic Outlook**, the debt-to-GDP ratio in the median emerging market and the middle-income country was about 60% in 2021.
    - **Macroeconomic Policy:**
      - The war-induced supply shortages have amplified the **inflationary pressure**, especially in the **energy and agriculture sectors**.
    - **Proving Global Public Health Goods:**
      - The recovery from the pandemic has been largely uneven due to **inadequate access to essential healthcare**.

Note:



- **Digital Economy:**
  - The Russia–Ukraine war has led to resurfacing of concerns regarding the illicit use of **crypto-assets** and its impact on the global financial stability.

#### ➤ **Challenges for India:**

- For India, the G-20's challenges come with the **hosting of Summit next November** efficiently with member countries of polarised international interests.
  - Former **NITI Ayog** CEO Amitabh Kant has been appointed the PM's G-20 Sherpa, and former Foreign Secretary Harsh Shringla will be the G-20 Coordinator.
  - The government plans to hold 100 preparatory meetings in different parts of the country, which led to a controversy over whether the G-20 summit or Ministerial level meetings would be held in Jammu Kashmir, considering India's conflict with neighbouring countries.
- The bigger challenges, however, **will remain for India to assist Indonesia in protecting the idea of the G-20**, and keeping it from fragmentation in the face of geopolitical fissures, where leaders are loath to hear each other speak, or even sit in the same room together.

## India-Australia Critical Minerals Investment Partnership

### **Why in News?**

Recently, **India and Australia** decided to strengthen their partnership **in the field of projects and supply chains for critical minerals**.

- Australia confirmed that it would **commit USD 5.8 million** to the three-year **India-Australia Critical Minerals Investment Partnership**.

### **What are Critical Minerals?**

- **About:**
  - Critical minerals are **elements that are the building blocks of essential modern-day technologies** and are at risk of supply chain disruptions.
- **Examples:**

- 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 earth that is **used for making magnets and silicon** which is a key mineral for making computer chips and solar panels.

- India's Department of Science and Technology, in collaboration with the Council on Energy, Environment and Water, **drafted the Critical Minerals Strategy for India in 2016**, with a focus on India's resource requirements till 2030.

- The Indian Critical Minerals Strategy has **identified 49 minerals that will be vital for India's future economic growth**.

#### ➤ **Significance:**

- These minerals are now **used everywhere** from making mobile phones, and computers to batteries, **electric vehicles (EV)** and green technologies like solar panels and wind turbines.
- 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**.

### **Why are these Minerals Considered a Critical Source?**

#### ➤ **Increased Dependency:**

- As countries around the world scale up their transition toward clean energy and a 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.

#### ➤ **Low Availability:**

- These supply risks exist due to rare availability, growing demand and complex processing value chain. Many times, the complex supply chain can be disrupted by hostile regimes, or **due to politically unstable regions**.

#### ➤ **Increasing Demand:**

- According to the United States (US) Government, as the world transitions to a clean energy economy, **global demand for these critical minerals is set**

Note:



to rapidly increase by 400-600% over the next several decades, and, for minerals such as lithium and graphite used in EV batteries, **demand will increase by even more as much as 4,000%**.

- They are critical as the **world is fast shifting from a fossil fuel-intensive to a mineral-intensive energy system**.

## The African Union at 20

### Why in News?

The African Union is celebrating its 20<sup>th</sup> Anniversary on 9<sup>th</sup> of July 2022.

### What Do We Know About African Union?

#### ➤ About:

- The African Union (AU) is a continental body consisting of the 55 member states that make up the countries of the African Continent.

#### ➤ Formation:

- In 1963, the Organization of African Unity was founded by the independent states of Africa. The organization aimed to promote cooperation between African states.
- The 1980 Lagos Plan of Action was adopted by the Organization of African Unity. The plan suggested that Africa should minimize reliance upon the West by promoting intra-African trade.
- **In 2002, the Organization of African Unity was succeeded by the African Union**, which had as one of its goals to accelerate the “economic integration of the continent”.

### What has the African Union Achieved in 20 Years?

#### ➤ African Continental Free Trade Area:

- It was established in 2018 by the **African Continental Free Trade Agreement (AfCTA)**.
  - AfCFTA seeks to create a single continental market for goods and services, with free movement of business persons and investments, and thus pave the way for accelerating the establishment of the Continental Customs Union and the African customs union.
  - The AfCFTA preliminary work is on steps such as incremental tariff reduction, elimination of

non-tariff barriers, supply chains and dispute settlement.

- It is expected to boost intra-African trade by about USD35 billion by the end of 2022.
- The larger market area will likely attract investment for continental infrastructure development.
- The increased trade will create jobs, enhance Africa’s global competitiveness, improve social welfare and position Africa for greater industrialisation.

#### ➤ Diplomatic Achievement:

- AU has established a permanent mission in Beijing, China, to strengthen economic, commercial and cultural ties with Africa’s largest trading partner.
  - This consolidates Africa’s global profile and ability to speak with one voice on world affairs.

#### ➤ Women’s Economic Financial Inclusion:

- AU championed a 10-year continental declaration aimed at **gender equality** and **women’s empowerment** that was introduced in February 2020.
- This declaration, called the **Decade of Women’s Financial and Economic Inclusion**, sees African leaders commit to taking action for gender inclusion towards sustainable development at national, regional, and continental levels.

### What are the Challenges the African Union is Facing?

#### ➤ Unconstitutional Hold on Power:

- Africa has seen a troubling resurgence of **military coups** and leaders using unconstitutional means to cling to power.
  - There have been at least 32 coups and coup attempts since 2013.
- Five out of the seven coup attempts since 2020 succeeded.
  - The coup leaders in the five countries — Burkina Faso, Chad, Guinea, Mali and Sudan — violently suppressed pro-democracy protesters.
- The death toll from the suppression of anti-coup protests in Sudan, for instance, is over 100. Over 18 million Sudanese are threatened by **food insecurity**.

#### ➤ Disregard for the Rule of Law:

- An increasing number of democratically elected and legitimate governments are cracking down on **civil society organisations**.

Note:



- The governments are squeezing out institutions that should hold them accountable and are silencing the media.
- They arrest activists and enact laws that restrict civil society organisations and their activities.
- **UNSC:**
  - The **UN Security Council** is yet to give Africa at least two permanent seats.
    - Over two-thirds of the council's agenda concerns Africa, yet the continent is excluded from permanent representation.

### **How has Indian African Relations Been?**

- **Social Infrastructure:**
  - The India-Africa social infrastructure (education, health, skills) cooperation is multidimensional, comprehensive, and involves national, state, and subnational actors working toward augmenting African institutional and individual capacities.
- **Common Geo-Political Interests:**
  - India and Africa have common interests on international issues; **UN reforms, counter-terrorism, peacekeeping, cybersecurity, and energy security.**
- **Economic Cooperation:**
  - India's economic engagement with Africa is substantive.
  - In the last decade and a half, trade between India and Africa has multiplied and diversified—bilateral trade of USD63.3 billion in 2018-19 made India the third-largest trading partner for the continent.
- **Support in Fight Against Covid-19:**
  - Under the **e-ITEC initiative**, India has shared **Covid-19** management strategies, training webinars exclusively to train healthcare professionals from Africa by Indian health experts.
    - India is also sending consignments of essential medicines, including **hydroxychloroquine (HCQ)** and paracetamol, to many African countries in addition to doctors and paramedics.
- **Recent Development:**
  - India's first high-level visit in Africa for 2022 took place and following developments took place:
    - India announced the Phase-II upgradation of Entrepreneurship Development and Technology

Centre (CEDT) in Dakar, built with Indian grant assistance.

- India also offered a Special **ITEC** English proficiency course for Senegalese public servants.
- India announced a Special training programme for a batch of 15 Senegalese diplomats at Sushma Swaraj Institute of Foreign Services.
- **Both sides signed three MOUs:**
  - **MoU on cooperation in Youth Affairs**
  - **Cultural Exchange Programme (CEP)**
  - **Visa waiver Agreement for diplomats/officials**

### **What are the Possible Opportunities in India Africa Relations?**

- **Addressing Food security:** Agriculture and food security can also be a fulcrum for deepening ties.
  - Africa has a major chunk of the world's arable land but produces a very small percentage of the global agri-output.
  - India has proven expertise in the agriculture sector, being the top producer of much agricultural produce.
  - Thereby, India and Africa both can cooperate in ensuring food and nutritional security for each other.
- **Combating Neo-Colonialism:**
  - China has been actively pursuing Chequebook and donation diplomacy in Africa.
    - However, Chinese investment is seen as neo-colonial in nature as it focuses on money, political influence, hard-infrastructure projects and resource extraction.
    - India's approach, on the other hand, is one that focuses on building local capacities and an equal partnership with Africans and not merely with African elites concerned.
- **Preventing Global Rivalries:**
  - In recent years, several global economic players have strengthened their engagement with African states, with an eye to rising economic opportunities, including in energy, **mining**, infrastructure and connectivity.
    - As global engagement in Africa increases, India and Africa can ensure that Africa does not once again turn into a theatre of rival ambitions

Note:



## India-Tajikistan Bilateral Relations

### Why in News?

India's Minister for Science and Technology and Earth Sciences held a bilateral meeting with the Minister for Energy and Water resources of Republic of Tajikistan.

- Issues like **water resources research** especially **Glacier monitoring, Non-conventional Energy, Peaceful Use of Space Technology and Disaster Management** were discussed to support **global water action** and **climate resistance on Water for Sustainable Development**.

### How is India's Relations with Tajikistan?

- **Consultative Mechanism:**
  - Foreign Office Consultations
  - Joint Working Group on **Counter-terrorism**
  - Joint Commission on Trade, Economic, Scientific and Technical Cooperation
  - JWG on Defence Cooperation
  - JWG on Peaceful Use of Space Technology for Development
- **Cooperation in International Forums:**
  - In 2020, **Tajikistan extended support** for **India's candidature for a non-permanent seat in United Nation Security Council** for the term 2021-22.
  - Tajikistan strongly supported **Shanghai Cooperation Organisation (SCO) Member status for India**.
  - India has consistently supported Tajikistan's proposals at the **United Nations on water related issues**.
  - India also supported **Tajikistan's candidature to United Nations' Economic and Social Council (ECOSOC) and accession to WTO** in March 2013.
- **Development & Aid Partnership:**
  - **Development Assistance:**
    - With a grant of USD 0.6 million, an **Information and Technology Centre (Bedil Centre)** was commissioned in 2006.
      - The project ran for a full hardware cycle of 6 years and trained almost all first-generation IT experts in the government sector in Tajikistan.
    - A **project for setting up computer labs in 37 schools in Tajikistan** was **completed and delivered** in August 2016.

- **Humanitarian Assistance:**
  - In June 2009, USD 200,000 cash assistance was given by India **to overcome damage caused by floods in Tajikistan**.
  - After the **outbreak of Polio in southwest Tajikistan**, India provided 2 million doses of **oral polio vaccine through UNICEF** in November 2010.
- **Human Capacity Building:**
  - Since the establishment of the Indian embassy in Dushanbe in 1994, Tajikistan has been a beneficiary of the **Indian Technical & Economic Cooperation Programme (ITEC)**.
  - In 2019, under **India-Central Asia Dialogue Process**, **some Tajik diplomats were trained at Foreign Service Institute, Delhi**.
- **Trade & Economic Relation:**
  - Indian exports to Tajikistan mainly consist of pharmaceuticals, medical preparations, cane or beet sugar, **tea, handicraft** and machinery.
    - Indian pharmaceutical products occupy approximately 25% of Tajik market.
  - Different types of ores, slag and ash, aluminium, organic chemicals, herbal oils, dried fruits and cotton are exported to India by Tajikistan.
  - In 2018, **Eight MoU's were signed** in the areas of **Peaceful Use of Space Technology, Disaster Management, Renewable Energy, and Agricultural Research and Education**.
- **Cultural & People-to-People Relation:**
  - **Deep rooted historical and cultural linkages** have helped expand and widen the relationship to a new level.
    - Cooperation between the two countries encompasses all aspects of human endeavour with **special focus on military and defence ties**.
  - **Swami Vivekananda Cultural Centre in Dushanbe** offers courses in **Kathak & Tabla** through teachers deployed by **Indian Council for Cultural Relations** from India. The centre **also offers Sanskrit and Hindi language classes**.
  - In 2020 '**My Life My Yoga**' video blogging competition saw participation from Tajikistan yoga enthusiasts.

Note:



## India-Central Asia Relations

### Central Asia



#### ➤ About:

- India has had relations with Central Asia since the 3rd century B.C as the nation's fell on route to the **Legendary Silk Route**.
- **Buddhism** found inroads in several of Central Asian cities such as **Merv, Khalachayan, Tirmiz and Bokhara** etc in the form of **Stupas and Monasteries**.
- Central Asia serves as a **land bridge between Asia and Europe**, making it **geopolitically axial for India**.
  - The region is **rich in natural resources** such as petroleum, natural gas, antimony, aluminium, gold, silver, coal and uranium which can be best utilised by Indian energy requirements.
- Central Asian Regions are fast getting linked to the global market for production, supplies of raw materials and services.
  - They are also increasingly getting integrated into the **East-West Trans-Eurasian transit economic corridors**.

#### ➤ India-Central Asia Dialogue:

- It is a **ministerial-level dialogue between India and the Central Asian countries** namely **Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan**.
- **All five nations became independent states after the collapse of the USSR in 1991, post-Cold war**.
- All the countries participating in the dialogue, **except for Turkmenistan, are also members of the SCO**.

- The dialogue focuses on a number of issues including ways to **improve connectivity and stabilise war-ravaged Afghanistan**.

#### ➤ Recent Development between India and Central Asia Relations:

- India's **USD 1 billion Line of Credit for projects in Central Asia**, connectivity endeavours by using the **Chabahar Port** for enhancing trade between the two sides, and the **Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline**.
- **International North-South Transport Corridor (INSTC)** in conjunction with **Ashgabat Agreement on International Transport and Transit Corridor (ITTC)** is enhancing connectivity between India and the Central Asian countries.
- The **Foreign ministers of the five Central Asian nations visited New Delhi in December 2021 to attend the third India-Central Asia Dialogue**
- Dealing with Covid-19, while the **Central Asian countries appreciated India's assistance in supply of Covid-19 vaccines and essential medicines** during their early stage of the pandemic.
- In January, 2022 the **Prime Minister of India hosted the first India-Central Asia Summit in virtual format**.

## Mekong – Lancang Cooperation

### Why in News?

Recently, Myanmar's military government hosted the first high - level regional meeting since the Army took power in 2021.

### What Do We Know About the Meeting?

- China's Foreign Minister and counterparts from **Mekong** Delta nations attended the meeting.
- Foreign Minister of China along with his colleagues from Myanmar, Laos, Thailand, Cambodia and Vietnam at the **Mekong - Lancang Cooperation** group meeting.
- It was held in the central city of **Bagan**, a **UNESCO World Heritage site**.
- The theme of the meeting was **"Solidarity for Peace and Prosperity"**.

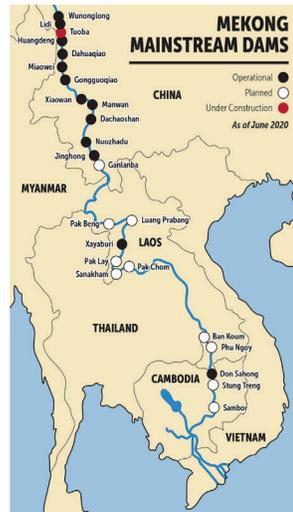
Note:



## What Do We Mean by Mekong - Lancang Cooperation?

### ➤ About:

- The grouping is a Chinese led initiative that includes the countries of the **Mekong Delta**, a potential source of regional tensions due to an increasing number of hydroelectric projects that are altering the flow and raising concerns of ecological damage.



### ➤ Issues:

- China has built 10 dams along the upper stretch of the Mekong, the part it calls the Lancang.
- China has been criticized for the dams upstream on the Mekong river which affect water levels and downstream fisheries that are important to several Southeast Asian nations' economies.

## What is there to Know about Myanmar's Military Coup?

### ➤ About:

- In the November 2020 parliamentary election, Suu Kyi's party National League for Democracy (NLD) secured the majority of the seats.
- In the Myanmar's Parliament, the military holds 25% of the total seats according to the 2008 military-drafted constitution and several key ministerial positions are also reserved for military appointees.
- When the newly elected Myanmar lawmakers were to hold the first session of Parliament in 2021, **the military imposed a state of emergency** for one year citing massive voting fraud in the parliamentary elections.

### ➤ India's reaction to the Coup:

- India supports the process of democratic transition in Myanmar.
- Though India has expressed deep concern over developments in Myanmar, cutting off from the Myanmar military is not a viable option as India has significant economic and strategic interests in Myanmar and its neighbourhood.

## How has India's Relations with Myanmar Been?

### ➤ Importance of Myanmar for India:

- Myanmar is geopolitically significant to India as it stands at the center of the India-Southeast Asia geography.
- Myanmar is the only Southeast Asian country that shares a land border with north-eastern India.
- Myanmar is the only country that sits at the intersection of India's "**Neighborhood First**" policy and its "**Act East**" policy.
- As part of India's **SAGAR Vision**, India developed the Sittwe port in Myanmar's Rakhine state.
- The port is meant to be India's answer to the Chinese-fronted Kyaukpyu port, which is intended to cement China's geostrategic footprint in Rakhine.

### ➤ Projects in which India is involved Includes:

- Upgradation and resurfacing of the 160 km. long Tamu-Kalewa-Kalemyo road.
- An Asymmetric Digital Subscriber Line (ADSL) project for high-speed data link in 32 Myanmar cities has been completed.
- ONGC Videsh Ltd. (OVL), **Gas Authority of India Limited (GAIL)** and **ESSAR** are participants in the energy sector in Myanmar.

### ➤ India and Myanmar's Groupings:

- **ASEAN:**
  - Myanmar became a member of ASEAN in July 1997.
  - As the only ASEAN country which shares a land border with India, Myanmar is a bridge between India and ASEAN.
- **BIMSTEC:**
  - The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a regional organization that was established on 6<sup>th</sup> June 1997 with the signing of the Bangkok Declaration.
  - Representatives of the Governments of Bangladesh, India, Sri Lanka, and Thailand came together in Bangkok, and signed the '**Declaration on the Establishment of the Bangladesh-India-Sri Lanka-Thailand Economic Cooperation (BIST-EC)**'.
  - Myanmar became a member of BIMSTEC in December 1997.

Note:



- Myanmar is a signatory to the BIMSTEC Free Trade Agreement.
- Myanmar is the lead country for the energy sector. Myanmar trades mostly with Thailand and India in the BIMSTEC region.
- **Mekong Ganga Cooperation:**
  - Myanmar is a member of the Mekong Ganga Cooperation (MGC) since its inception in November 2000.
  - MGC is an initiative by six countries – India and five ASEAN countries namely, Cambodia, Laos, Myanmar, Thailand and Vietnam – for cooperation in the fields of tourism, education, culture, transport and communication.
- **SAARC:**
  - The South Asian Association for Regional Cooperation (SAARC) was established with the signing of the SAARC Charter in Dhaka on 8<sup>th</sup> December 1985.
  - SAARC comprises of eight Member States:
    - Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.
  - Myanmar was given the status of observer in SAARC in August 2008.

### **Why India Should be Concerned about the Meeting?**

- China's presence in Myanmar and growing bonds between China and Myanmar is an issue of deep concern for India as India shares 1600km of boundary with Myanmar
- Ever since the coup, China's economic grip over Myanmar has become tighter with a special focus on projects critical for the **China-Myanmar Economic Corridor**.
- Moreover, the deadly attack on an **Assam Rifles** convoy near the Myanmar border in November 2021 was a reminder about the proclivity of China for creating trouble in the Northeast.

### **What Should be India's Approach Moving Forward?**

- **Cultural Diplomacy:**
  - India's cultural diplomacy through the lens of **Buddhism** can be leveraged for strengthening its ties with Myanmar.

- India's "**Buddhist Circuit**" initiative, which seeks to double foreign tourist arrivals by connecting ancient Buddhist heritage sites across different states in India, should resonate with Buddhist-majority Myanmar.
- This could also build up India's diplomatic reservoir of goodwill and trust with Buddhist-majority countries such as Myanmar.
- **Resolving Rohingyas Issue:**
  - The quicker the **Rohingya** issue is resolved, the easier it will be for India to manage its relations with Myanmar and Bangladesh, focusing instead more on bilateral and subregional economic cooperation
- **Other Measures:**
  - India should continue to engage with the present regime in Myanmar working towards mutual development of people of both the countries.
  - It should support sharing experiences in constitutionalism and federalism to assist Myanmar in resolving the prevailing stalemate.

## **India-EU Trade and Investment Agreements**

### **Why in News?**

Recently, **India and the European Union** concluded the first round of negotiations for India-EU Trade and Investment Agreements in New Delhi.

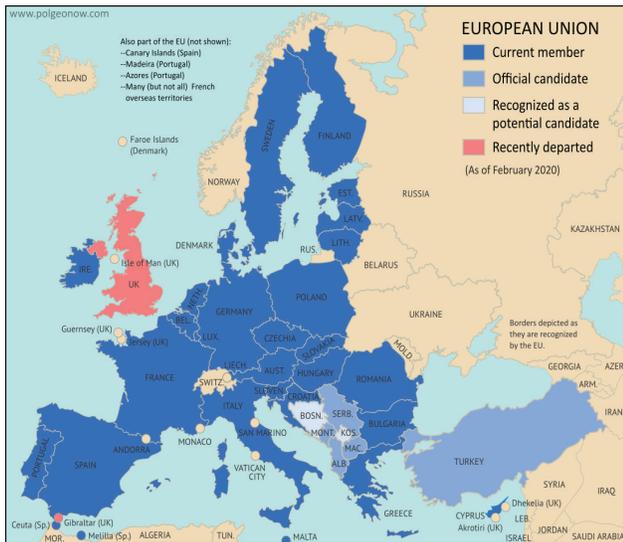
- **52 technical sessions** covering **18 policy areas** of the **free trade agreement** and **7 sessions** on **Investment Protection** and **Geographical Indicators** were held.
- The **second round of negotiations** is scheduled to take place in **September 2022 in Brussels**.

### **What is India-EU Trade and Investment Agreements?**

- **About:**
  - India and EU had launched talks for having a wide-ranging **Free Trade Agreement (FTA)**, officially called broad-based BTIA, long ago in 2007.
  - The BTIA was proposed to encompass trade in goods, services and investments.
    - However, the talks stalled in 2013 over differences on market access and movement of professionals.

Note:





### ➤ Scope:

- India's bilateral trade with the European Union amounted to over **116 billion dollars in 2021-22**.
- Despite the global disruptions, bilateral trade achieved impressive annual growth of more than **43% in 2021-22**.
- Currently, the European Union is India's **second-largest trading partner after the US**, and the **second-largest destination for Indian exports**.
- The EU's share in foreign investment inflows to India has more than doubled from 8% to 18% in the last decade, making the **EU the first foreign investor in India**.

### What are the Related Challenges?

#### ➤ Most Favoured Nation:

- EU investment treaty practice illustrates its keenness to include the **Most Favoured Nation (MFN)** provision in its investment treaties.
  - India is averse to including the MFN provision in investment treaties.

#### ➤ Fair and Equitable Treatment:

- EU's practice is to include in its investment treaties the **Fair and Equitable Treatment (FET)** provision.
  - FET is an important substantive protection feature that enables foreign investors to hold States accountable for arbitrary behavior.
  - The FET provision is missing in **India's Model Bilateral Investment Treaty** and the recent investment treaties that India has signed.

### What is European Union?

#### ➤ About:

- The European Union is a **group of 27 countries that operate as a cohesive economic and political block**.
- **19 of these countries use EURO as their official currency**.
  - **8 EU members (Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Poland, Romania and Sweden) do not use the euro**.
- The EU grew out of a desire to form a single European political entity **to end centuries of warfare among European countries that culminated with World War II** and decimated much of the continent.
- The EU has developed an **internal single market through a standardised system of laws** that apply in all member states in matters, where members have agreed to act as one.

#### ➤ Significance of EU for India:

- The EU works closely with India to **promote peace, create jobs, boost economic growth and enhance sustainable development** across the country.
- As India graduated from low to medium income country (**OECD 2014**), the **EU-India cooperation also evolved from a traditional financial assistance type towards a partnership with a focus on common priorities**.
- At the 2017 **EU-India Summit**, leaders reiterated their intention to strengthen cooperation on the implementation of the **2030 Agenda for Sustainable Development** and agreed to explore the continuation of the **EU-India Development Dialogue**.

#### ➤ Multilateral Investment Court:

- EU has been batting for a Multilateral Investment Court (MIC) to reform the existing arbitration-based Investor-State Dispute Settlement (ISDS) system.
  - Yet, India's official position on MIC is unknown. India hasn't contributed to the ongoing negotiations towards establishing a MIC, which is perplexing for a country that champions a rules-based global order.

#### ➤ Non-Tariff Barriers:

Note:



- Presence of **non-tariff barriers on Indian agricultural products in the form of sanitary and phytosanitary (SPS) measures** which are too stringent and enable the EU to bar many Indian agricultural products from entering its markets.
- The **non-tariff barriers in pharmaceuticals that the EU has imposed** include requirements of **World Trade Organisation**- Good Manufacturing Practice certification, import bans, antidumping measures and pre-shipment inspection among others.



Note:



# Science and Technology

## Highlights

- Leprosy
- Treeshrew Spotted in Jammu and Kashmir
- India Stack Knowledge Exchange 2022
- Hadron Collider Run 3
- Single-Crystalline Scandium Nitride
- Nairobi Flies
- New Autonomous Flying Wing Technology Demonstrator
- New POEM Platform
- TiHAN: First Autonomous Navigation Facility
- Metaverse Standards Forum
- GigaMesh Solution
- Oncolytic Virotherapy for Treating Cancer
- Biomolecular Alterations Post EPV Infection
- Dark Matter
- HPV Vaccine

## Leprosy

### Why in News?

For months there has been an acute shortage of the key drug named Clofazimine which is used in Leprosy treatment in the private market.

- Clofazimine, along with Rifampicin and Dapsone, is one of the three essential drugs in the **Multi-Drug Treatment** of Multibacillary Leprosy (MB-MDT) cases.

### What do we Know about Leprosy?

- **About:**
  - **Leprosy** is a chronic, progressive bacterial infection caused by the bacterium *Mycobacterium leprae*. It primarily affects the nerves of the extremities, the skin, the lining of the nose, and the upper respiratory tract. Leprosy is also known as Hansen's disease.
  - It produces skin ulcers, nerve damage, and muscle weakness. If it isn't treated, it can cause severe disfigurement and significant disability.
  - It is one of the oldest diseases in recorded history.
  - It is common in many countries, especially those with tropical or subtropical climates including India.
- **Prevalence of Disease:**
  - The **World Health Organization (WHO)** reports that leprosy is **endemic** in several Indian states and union territories, with an annual case detection rate of 4.56 per 10,000 population.

- India reports more than 1,25,000 new patients of leprosy every year.

### What are Related Government Initiatives?

- **National Leprosy Eradication Programme (NLEP):**
  - It is a **Centrally Sponsored Scheme** under the umbrella of **National Health Mission (NHM)**.
  - India has achieved the **elimination of leprosy as a public health problem** i.e., defined as less than 1 case per 10,000 populations, at the National level.
  - The NLEP aims at **eliminating leprosy in each of the districts by 2030**.
- In 2017, **SPARSH** Leprosy Awareness Campaign was launched to promote awareness and address the issues of stigma and discrimination.

## Treeshrew Spotted in Jammu and Kashmir

### Why in News?

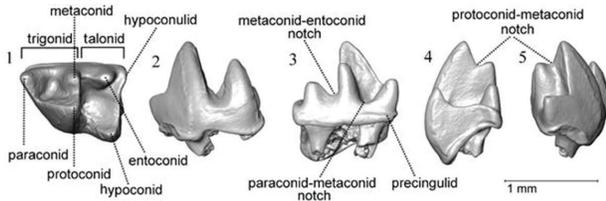
Recently, Scientists have spotted fossils of a small mammal resembling squirrels called treeshrew (known as *Sivatupaia ramnagarensis*) belonging to a new genus and species from Jammu and Kashmir.

### What are the Key Points Related to Treeshrew?

- **About:**

Note:





- This treeshrew currently represents the **oldest record of fossil tupaiids in the Siwaliks**, extending their time range by **2.5-4.0 Million Years** in the region.
  - **Tupaiids** refers to **several species of East Indian and Asiatic insectivores** of the family **Tupauidæ**, somewhat **resembling squirrels in size and arboreal habits**. The nose is long and pointed.
- **Treeshrews** are very rare elements of the fossil record, with only a few species known throughout the entire **Cenozoic era**.
  - **Cenozoic Era** means **66 million years ago until today** or 'recent life'.
  - During this era, **plants and animals look most like those on Earth today**.
  - Periods of the **Cenozoic Era** are **split into even smaller parts** known as **Epochs**.
- Dietary analyses suggest that the new tupaiid was probably adapted for a less mechanically challenging or more fruit eating diet compared to other extant and fossil tupaiids.
  - A **dietary analysis** is a **nutritional assessment** that allows technicians to analyse the **patterns, quantity, and nutritional quality of food consumed** by an individual.
- **Significance of the Discovery:**
  - The identification of time **sensitive dental features and species** in the current collection **helps to provide a more precise age estimate for this Ramnagar locality as between 12.7-11.6 Million Years**.
- **What are Siwalik sediments?**
  - The **Siwalik** is a **thick sedimentary sequence** forming the youngest mountain belt, **extending throughout the East- West of the foothills of the Himalayas**
  - Siwalik documents the evolution of many mammalian groups from the middle **Miocene Epoch through Pleistocene** including **treeshrews, hedgehogs**, and other small mammals.

### Miocene Epoch

- The Miocene Epoch is the period between 23.03 to 5.3 million years ago. It was a **time of warmer global climates**.
- It's notable in that two major ecosystems made their first appearances: **kelp forests and grasslands**. The expansion of grasslands is correlated to a drying of continental interiors as the **global climate first warmed and then cooled**.
- Important Miocene deposits occur in **North and South America, southern Europe, India, Mongolia, East Africa, and Pakistan**.

### Pleistocene (Ice Age)

- It is the geological epoch that lasted from about 2,580,000 to 11,700 years ago, spanning the earth's most recent period of **repeated glaciations**.
- **It was during the Pleistocene that the most recent episodes of global cooling, or ice ages, took place.**

## India Stack Knowledge Exchange 2022

### Why in News?

As a part of the **Digital India** week celebrations, a three day dedicated event titled '**India Stack Knowledge Exchange**' programme was organised.

- India Stack refers to ambitious project of **creating a unified software platform to bring India's population into the digital age**.

### What is the India Stack

#### Knowledge Exchange Programme (ISKE)?

- **About:**
  - The idea behind ISKE 2022 was to get the real practitioners - **the IT champions** - to speak of the **implementation of ground-breaking projects, the challenges faced and the road ahead for these projects**.
    - ISKE 2022 was also visualised to present to the global community, **India Stack solutions and goods**, and welcomed **any nation to adopt and customize them for their own use**.
- **Significance:**
  - The event brought together **practitioners and digital**

Note:



**transformation leaders** to share their experiences in implementing pioneering projects.

- It helped in the formation of an **India Stack Knowledge Exchange**.
- It served as a **collaborative platform** for the replication of some of the digital initiatives.
- It served as a **knowledge exchange platform** for India to speak of its contribution to the repository of **Global Digital Public Goods**.

#### What were the areas covered in ISKE?

##### ➤ Urban Stack

- **Smart Cities Mission:**
  - **SCM** is a **Centrally Sponsored Scheme**, launched in June 2015 to **transform 100 cities** to provide the necessary core **infrastructure** and clean and **sustainable environment** to enable a decent quality of life to their citizens through the application of “**Smart Solutions**”.
  - The mission aims to meet the aspirations of India’s population living in cities through various urban development projects.
- **Digital Infrastructure for Governance, Impact and Transformation (DIGIT):**
  - DIGIT is a platform which is open source and open **API (Application Programming Interface)** powered for developers, enterprises and citizens to build new applications and solutions.
  - The ready to use platform helps achieve quicker implementation timeframes and helps local governments achieve process improvements, accountability and transparency at various levels of administration.
  - It is a manifestation of **Societal Platform** thinking, a systemic method to resolve complex societal challenges with speed, at scale, sustainably.
    - **Societal Platforms** are manifestations of **Societal Thinking**, a systemic **approach**, a set of **values** and specific **design** principles, to reimagine **social problems**, **redesign core interactions** between key actors of society and induce exponential social change.
- India urban data exchange:
  - **IUDE** has been developed in partnership between the Smart Cities Mission and the Indian Institute of Science (IISc), Bengaluru.

- It is an open-source software platform which facilitates the secure, authenticated, and managed exchange of data amongst various data platforms, 3<sup>rd</sup> party authenticated and authorised applications, and other sources.

##### ➤ Technology Stack for e-Commerce:

###### ○ GeM Portal:

- **The Government e-Marketplace** one-stop National Public Procurement Portal to facilitate online procurement of common use Goods & Services required by various Central and State Government Departments/Organizations/Public Sector Undertakings (PSUs).
- The procurement of goods and services by Ministries and the Central Public Sector Enterprises (CPSEs) is mandatory for goods and services available on GeM.
- It also provides the tools of e-bidding and reverse e-auction to facilitate the government users achieve the best value for their money.

###### ○ Open Network for Digital Commerce:

- **ONDC** is a **freely accessible government-backed platform** that aims to democratise **e-commerce** by moving it from a **platform-centric model to an open network** for buying and selling of goods and services.
- It is a **not-for-profit organisation** that will offer a network to **enable local digital commerce stores** across industries to be discovered and engaged by any network-enabled applications.
- Under ONDC, it is envisaged that a **buyer registered on one participating e-commerce site** (for example, Amazon) may **purchase goods from a seller on another participating e-commerce site** (for example, Flipkart).

##### ➤ Space Technology Stack:

###### ○ NavIC:

- **Navigation in Indian Constellation (NavIC)** is an Indian Regional Navigation Satellite System (IRNSS), developed by the **Indian Space Research Organization (ISRO)**.
- The main objective is to provide reliable position, navigation and timing services over India and its neighbourhood.

Note:



- It has been certified by the 3<sup>rd</sup> Generation Partnership Project (3GPP), a global body for coordinating mobile telephony standards.
- **Visualisation of Earth Observation Data and Archival System (VEDAS):**
  - **VEDAS provides a platform** to motivate young researchers and academia to showcase their spatiotemporal analytical skill using **Indian Earth Observation data and build geo-spatial applications.**
  - It is a step toward **expanding the societal benefits** of the nation's investments in ISRO's Earth science research.
  - It is expected that with a handshake between data generators and potential analysts, **newer and innovative processing tools and geo-spatial applications will emerge.**
  - **It provides:**
    - Platform for Research & training to Academia
    - Data visualization and graphical analysis on web
    - Geo-processing tools for analysis on web
    - Integrate Web Map Service from various sources
- **Meteorological & Oceanographic Satellite Data Archival Centre (MOSDAC):**
  - **Space Applications Centre (SAC)** is an **ISRO Centre** located at Ahmedabad, dealing with a wide variety of themes from **satellite payload development, operational data reception and processing to societal applications.**
  - **Meteorological and Oceanographic Satellite Data Archival Centre (MOSDAC)** is a Data Centre of Space Applications Centre (SAC) and has facilities for satellite data reception, processing, analysis and dissemination.
  - MOSDAC is operationally supplying earth observation data from Indian meteorology and oceanography satellites, to cater to national and international research requirements.
- **Bhuvan, Bhoonidhi & Yuktdhara:**
  - **Bhuvan:**
    - **Bhuvan** is a type of **web portal** used to find and access geographic information (geospatial information) and associated geographic services (display, editing, analysis, etc.) via the Internet.

- **Bhoonidhi:**
  - It enables access to an extensive archive of **Remote Sensing data** from 44 satellites, including Indian and Foreign Remote Sensing sensors acquired over 31 years.
- **Yuktdhara:**
  - It is a geospatial planning portal meant for facilitating Gram Panchayat level planning of **MGNREGA** activities across India.

## Hadron Collider Run 3

### Why in News?

**The European Organisation for Nuclear Research (CERN)** has reignited the **Large Hadron Collider** for the third time in July 2022 — 10 years after it enabled scientists to find the 'God particle' or Higgs Boson.

### What Do We Need to Know About LHC?

#### ➤ About:

- The Large Hadron Collider is a giant, complex machine built to study particles that are the smallest known building blocks of all things.
- In its operational state, it fires two beams of protons almost at the speed of light in opposite directions inside a ring of superconducting electromagnets.
- The magnetic field created by the superconducting electromagnets keeps the protons in a tight beam and guides them along the way as they travel through beam pipes and finally collide.
- LHC's powerful electromagnets carry almost as much current as a bolt of lightning; they must be kept chilled.
  - The LHC uses a distribution system of liquid helium to keep its critical components ultracold at minus 271.3 degrees Celsius, which is colder than interstellar space.

#### ➤ Latest Upgrade:

- This is the LHC's third run, it will operate round-the-clock for four years at unprecedented energy levels of 13 tera electron volts. (An electron volt is the energy given to an electron by accelerating it through 1 volt of electric potential difference).
- Scientists are aiming to be delivering 1.6 billion proton-proton collisions per second" for the ATLAS and CMS experiments.

Note:



- ATLAS: Largest general purpose particle detector experiment at the LHC.
  - CMS: one of the largest international scientific collaborations in history, with the same goals as ATLAS, but which uses a different magnet-system design.
- **Significance:**
- Physicists want to use the collisions **to learn more about the Universe at the smallest scales, and to solve mysteries such as the nature of dark matter.**
  - The LHC's goal is to allow physicists **to test the predictions of different theories of particle physics.**
    - Technology found in particle accelerators **is already used for certain types of cancer surgery etc.**

### **How has LHC Performed in Previous Runs?**

- **First Run:**
- A decade ago, CERN had announced to the world the discovery of the **Higgs boson or the 'God Particle'** during the LHC's first run.
    - The discovery concluded the decades-long quest for the 'force-carrying' subatomic particle, and proved the existence of the Higgs mechanism, a theory put forth in the mid-sixties.
    - This led to Peter Higgs and his collaborator François Englert being awarded the Nobel Prize for physics in 2013.
    - The Higgs boson and its related energy field are believed to have played a vital role in the creation of the universe.
- **Second Run:**
- It began in 2015 and lasted till 2018. The second season of data taking produced five times more data than Run 1.

### **What Do We Know About God Particle?**

- In 2012, the Nobel-winning discovery of the Higgs boson (also known as 'God particle') validated the **Standard Model of physics**, which also predicts that about 60% of the time a Higgs boson will decay to a pair of bottom quarks.
- In 1960s Peter Higgs was the first person to suggest that this particle might exist.

- The Higgs field was proposed in 1964 as a new kind of field that fills the entire Universe and gives mass to all elementary particles. The Higgs boson is a wave in that field. Its discovery confirms the existence of the Higgs field.
- **The Standard Model of Physics:**
- The Standard Model of particle physics is the theory which **describes three of the four known fundamental forces** (the electromagnetic, weak, and strong interactions, and not including the gravitational force) in the universe, as well as classifies all known elementary particles.
    - It explains how particles called **quarks** (which make up protons and neutrons) and **leptons** (which include electrons) make up all known matter.
    - It also explains how force carrying particles, which belong to a broader group of bosons, influence the quarks and leptons.
      - Scientists do not yet know how to combine gravity with the Standard Model.
  - The Higgs particle is a boson.
    - Bosons are thought to be particles which are responsible for all physical forces.
      - Other known bosons are the photon, the W and Z bosons, and the gluon.

#### **India and CERN**

- The associate membership would cost India approximately Rs. 78 crore annually though it still wouldn't have voting rights on decisions of the Council.
- Indian scientists have played a significant role in the A Large Ion Collider Experiment (ALICE) and Compact Muon Solenoid (CMS) experiments that led to the discovery of the Higgs Boson.

## **Single-Crystalline Scandium Nitride**

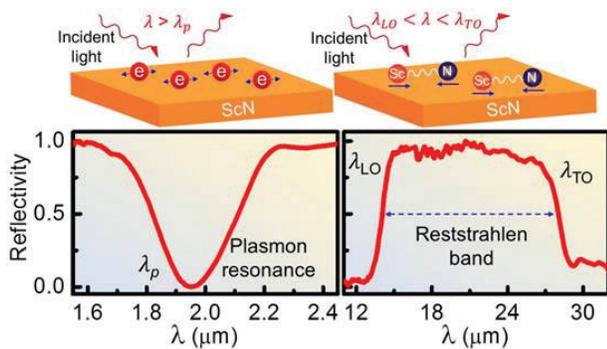
### **Why in News?**

Researchers at Bengaluru's **Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)** have discovered a **new material** called "**single-crystalline scandium nitride (ScN)**" that can **convert infrared light into renewable energy.**

Note:



- To accomplish this feat, **scientists used a scientific phenomenon known as polariton excitations**, which occur in tailored materials when light couples with either collective free electron oscillations or polar lattice vibrations.
- Infrared light is **beyond the light range that is visible to the human eye, and falls between the visible light and microwave regions** (the wavelength is longer than visible light).
  - Infrared sources, emitters, and sensors are in **high demand across a wide range of industries, including electronics, healthcare, defense and security, and energy**, further infrared polaritons in scandium nitride will enable its use in a variety of such devices.



### What are the Key Highlights of Single-Crystalline Scandium Nitride (ScN)?

- **About:**
  - It has high **efficiency in emitting, detecting, and modulating infrared light**, making it useful for **solar and thermal energy harvesting, as well as optical communication devices**.
  - Scientists have carefully controlled material properties to **excite polaritons** (a quasi-particle) and **achieve strong light-matter interactions in single-crystalline scandium nitride (ScN) using infrared light**.
- **Significance:**
  - As these polaritons in ScN are also **compatible with modern complementary-metal-oxide-semiconductor (CMOS) or Si-chip technology** and, as such, could be easily integrated into on-chip optical communication devices.
  - These exotic polaritons in the ScN can be utilized for solar and thermal energy harvesting.

## Nairobi Flies

### Why in News?

Recently, after coming into contact with **Nairobi flies**, approximately 100 students in **East Sikkim** have reported **skin infections**.

### What are Nairobi Flies?

- **About:**
  - It's a species of insect **native to East Africa**.
  - Nairobi flies, also known as **Kenyan flies or dragon bugs**, are small, beetle-like insects of **two species**:
    - Paederus Eximius.
    - Paederus sabaeus.
  - They are orange and black in colour and **thrive in areas with high rainfall**, as has been seen in Sikkim in recent weeks.
  - Like most insects, they are **attracted to Bright lights**.
- **Historical Outbreaks:**
  - Significant **outbreaks have occurred in Kenya and other parts of eastern Africa**. In 1998, unusually heavy rain brought a large number of insects into the area.
  - In the past several outbreaks have happened outside Africa like in India, Japan, and Paraguay.



### What are their effects on Humans?

- These insects usually don't bite but if they are disturbed during their stay on human skin, they could release a **potent acidic substance that can cause burn on human skin**.
- The released substance is called **Pederin** and it can **cause irritation on the skin, which leads to lesions or unusual marks or coloring of the skin**.

Note:



## New Autonomous Flying Wing Technology Demonstrator

### Why in News?

Recently, **Defence Research and Development Organisation (DRDO)** carried out the maiden test flight of a new **unmanned Aerial Vehicle**, an **Autonomous Flying Wing Technology Demonstrator**.

- DRDO is in the process of developing **Unmanned Aerial Vehicles (UAVs)** of different classes to meet the requirements of the armed forces.

### What is Autonomous Flying Wing Technology?

#### ➤ About:

- It's an **Unmanned Combat Aerial Vehicle (UCAV)** or a combat drone that is a flying wing type.
- It refers to a **tailless fixed-wing aircraft that houses its payload and fuel in its main wings and does not have a defined fuselage-like structure found in conventional aircraft**.
- The design has the potential to deliver **high fuel efficiency and stability** if executed with precision.

#### ➤ Applications:

- Mapping of Landslide Affected Area
- Infested Crop Damage Assessment
- Large Scale Mapping
- Traffic Monitoring and Management
- Logistics support

### What are its Specifications?

- The Autonomous Flying Wing Technology Demonstrator is a precursor to an **autonomous stealthy UCAV** which is being developed by the **DRDO's Aeronautical Development Establishment (ADE)**, primarily for the **Indian Air Force**.
  - ADE is a key **Aeronautical Systems Design Laboratory under DRDO**.
  - It is involved in the **design and development of the state-of-the-art Unmanned Aerial Vehicles (UAV)** and Aeronautical Systems and technologies to meet the requirements of the **Indian Armed forces**.
- The UCAV will be **capable of launching missiles and precision-guided munitions**.
- The vehicle is **powered by a small turbofan engine**.

## New POEM Platform

### Why in news?

Recently, the **Indian Space Research Organisation (ISRO)** achieved the feat of successfully launching the **PSLV Orbital Experimental Module or 'POEM'**.

- Besides this achievement, **ISRO also launched three satellites from Singapore on the PSLV-C53**.
  - This was the second **Polar Satellite Launch Vehicle(PSLV) mission of the year**. In February 2022, ISRO launched PSLV-C52 with the **Earth observation satellite EOS-04** and two smaller satellites.
- This was the second **dedicated commercial mission of NewSpace India Limited (NSIL)**, the commercial arm of ISRO.

### Which were the Singaporean Satellites?

- **DS-EO: It carries an electro-optic, multispectral payload to provide full-color images for land classification and serve humanitarian assistance, and disaster relief needs.**
- **NeuSAR – It is Singapore's first small commercial satellite** carrying a SAR (synthetic aperture radar) payload, which is capable of providing images day and night and under all weather conditions.
- **SCOOB-I satellites – It is the first in the Student Satellite Series (S3-I), a hands-on student training program from the Satellite Research Centre (SaRC) at Singapore's NTU School of Electrical and Electronic Engineering**

### What are the

### Key Highlights of POEM?

- **POEM (PSLV Orbital Experimental Module)** is an experimental mission by ISRO which performs **in-orbit scientific experiments** during the fourth stage of the Polar Satellite Launch Vehicle (PSLV) launch vehicle as an orbital platform.
  - The PSLV is a **four-stage rocket where the first three spent stages fall back into the ocean**, and the final stage (PS4) — after launching the satellite into orbit — ends up as space junk.
  - However, in PSLV-C53 mission, the spent final stage will be **utilised as a "stabilised platform" to perform experiments**.

Note:



- It is the first time that the (fourth stage) PS4 stage would **orbit the earth as a stabilized platform**.
- POEM has a dedicated **Navigation Guidance and Control (NGC)** system for attitude stabilization, which stands for controlling the orientation of any aerospace vehicle within permitted limits. The **NGC will act as the platform's brain to stabilize it with specified accuracy**.

### What Does it Carry?

- POEM carries six payloads including two from **Indian Space Start-ups, Digantara, and Dhruva Space** enabled through **IN-SPaCe** and **NSIL**.
- POEM will derive its power from **solar panels** mounted around the PS4 tank, and a **Li-Ion battery**. It will **navigate using Four Sun Sensors, a Magnetometer, Gyros & NavIC**.
- It also carries dedicated control thrusters using Helium gas storage. It is enabled with a telecommand feature.

## TiHAN: First Autonomous Navigation Facility

### Why in News?

Ministry of Science & Technology has inaugurated **"Technology Innovation Hub on Autonomous Navigation" or TiHAN**, in IIT- Hyderabad, which is a first **"Autonomous Navigation" facility**.

- It is seen as one of the steps toward India's vision of **'Atmanibhar Bharat'**, **'Skill India'** and **'Digital India'**.

### What is TiHAN?

- It is a **multidisciplinary initiative**, which aims at making India a global player in the futuristic and next-generation **"Smart Mobility" technology**.
- The multi-departmental initiative includes researchers from electrical, computer science, mechanical and aerospace, civil, mathematics.
- At present, **there is no such testbed facility in India to evaluate the autonomous navigation** of vehicles. Therefore, it is envisioned **to address this gap by developing a fully functional and exemplary testbed facility dedicated to Connected Autonomous Vehicles (CAVs)**.
  - Connected vehicles use technology to either communicate with each other, connect with traffic signals, signs, and other road items, or obtain data

from a cloud. This information exchange helps with safety and improves traffic flow.

### What is the Significance of this Step?

- It will **provide a unique platform for high quality research between academia**, industry and R&D labs both at the national and international level, thus making India a global leader in autonomous navigation technologies.
- India's mobility sector is one of the world's largest markets and the TiHAN - IITH **will be the source of futuristic technology generation for autonomous vehicles**.
- The TiHAN-IITH testbed on Autonomous Navigations (Aerial & Terrestrial) will **allow us to test the next generation autonomous navigation technologies accurately** and allow faster technology development and global market penetration.

## Metaverse Standards Forum

### Why in News?

Recently, various brands gathered for the founding of the **Metaverse Standards Forum** for the **development of interoperability standards** to drive the growth of the metaverse.

### What is Metaverse?

- The metaverse is not a new idea, science fiction writer Neal Stephenson coined the term in 1992, and the **concept is commonplace among video game companies**.
- Metaverse is the **next version of the Internet** focused on social connection.
  - It can be defined as a simulated digital environment that uses **Augmented Reality (AR), Virtual Reality (VR), and blockchain**, along with concepts from social media, to create spaces for rich user interaction mimicking the real world.
- It can be imagined as a 3D virtual world, with ever-evolving aspects which are collectively shared by its inhabitants - a virtual world with real-time events and an online infrastructure.
- In theory, it encapsulates everything that's happening into the real world and will bring real-time events and updates going forward. The user exists in a virtual world without borders.

Note:



### What is the Metaverse Standards Forum?

#### ➤ About:

- The concept of the metaverse **has yet to be fully established, but interest in virtual and augmented realities fast-tracks the growth of various metaverse projects.**
- In light of the growing anticipation for the metaverse, **Metaverse Standards Forum** was established **“to foster the development of open standards for the metaverse”.**
  - **“Open Standards”** are standards made available to the general public and are developed (or approved) and maintained via a collaborative and consensus driven process. “Open Standards” facilitate interoperability and data exchange among different products or services and are intended for widespread adoption.
- The internet is **interoperable through the power of HTML, the metaverse also requires a similar interface for users** to navigate between virtual worlds freely.

#### ➤ Objectives:

- It aims to **analyze the interoperability necessary** for running the metaverse.
  - Interoperability is the **driving force for the growth and adoption of the open metaverse.**
- It will focus on pragmatic, action-based projects such as implementation prototyping, hackathons, plugfests, and open-source tooling to **accelerate the testing and adoption of metaverse standards.**
- It will also develop **consistent language and deployment guidelines to expand the online universe.**

### What is the Need of Interoperability of Metaverse?

- Interoperability **equips the metaverse with support for the different features** and activities across projects.
- This continuity is **essential in generating a fluid user experience from one metaverse project to another.**
- With open interoperability standards and guidelines to follow, **companies can launch fully interoperable projects, allowing them to integrate their programming interfaces with other projects.**
- There has to be a set of commonly agreed upon protocols to make the metaverse work, just like how

Transfer Control Protocol/Internet Protocol (TCP/IP) enabled the Internet to go live four decades ago.

- Such protocols help us in connecting to a WiFi network from home and office without changing our devices.
- They are a result of open standards. The potential of the metaverse **will be best realised only if it is built on open standards.**
- Proponents of the metaverse call it the future of the Internet with 3D at its core. And to fully simulate the digital world, **3D interoperability has to be met.**

### What can be India's Role in Building Metaverse?

#### ➤ India-Primed for the Metaverse:

- Since 2015, India has **risen almost 40 places in the Global Innovation Index, now ranking 46<sup>th</sup> in the world.**
- India has a **thriving culture of entrepreneurship**, which has recently experienced significant growth.
- This environment is bolstered by a set of favourable consumer trends, including rising disposable income, increasing smartphone adoption and affordable mobile data.

#### ➤ Emerging Digital Infrastructure:

- The last decade has seen the **creation of India Stack**, which is a combination of technology projects, including the national digital identification and payments infrastructure, that together heralded a new era of financial inclusion in the country.
- India's plans **to use blockchain applications for e-governance** included a proposal for a blockchain-backed **Digital Rupee**, to be issued by the **Reserve Bank of India** from 2022-23.
- The government has also announced that it will conduct **spectrum auctions to facilitate rollout of 5G mobile services**, which should accelerate demand for cloud applications – including those for gaming and the metaverse.

#### ➤ The Evolving Regulatory Landscape:

- While the technical, demographic and policy foundations for the metaverse appear to be present in India, **there remains the operational challenge of building the metaverse.**
- If India is to take a leading role, **deal flows in the private sector will need to accelerate.**

Note:



- The latest Union Budget levies a 30% tax on income from transfers of Virtual Digital Assets (VDAs), which could include cryptocurrencies and potentially **Non-Fungible Tokens (NFTs)**.
  - While the tax would imply recognition of crypto as an asset that can be regulated, it does not legalise **crypto ownership, which can be done through due legislation**.
- Beyond crypto, the metaverse **also raises policy questions of how privacy and security should be addressed**.
  - Online risks may be exacerbated in the metaverse, where unwanted contact could become more intrusive and pervasive.

**Governance mechanisms for virtual worlds would need to be supported with strengthening and scaling efforts** to promote digital literacy, safety and wellbeing so that participants can engage meaningfully in online communities while consciously navigating harmful content and behaviours.

## GigaMesh Solution

### Why in News?

Recently, Astrome has signed a contract with the Department of Telecommunication to start the pilot project called "GigaMesh Network Solution with 15 villages in India.

- GigaMesh, developed by Astrome, will address congestion issues in rural 4G infrastructure and provide high-tech and affordable internet connectivity.

### What Do We Know about GigaMesh?

- The solution has been developed by **Astrome**.
  - The startup is supported by **AI & Robotics Technology Park (ARTPARK)**, the **Technology Innovation Hub (TIH)** at the **Indian Institute of Science (IISc)**.
- It's a **network solution** which will wirelessly provide **fibre-like** backhaul capacity and paves the road for **5G**.
- It is the **world's first multi-beam E-band Radio** that is able to communicate from one tower to multiple towers simultaneously while delivering multi GBPS throughput to each of these towers.
- A **single GigaMesh device can provide up to forty links with 2+ Gbps capacity**, communicating up to a range of ten kilometers.

- GigaMesh features multiple point-to-point communication in E-Band, lowering cost and is driven by software to make it easy to deploy, maintain and repair remotely.

### What do we Need to Know about ARTPARK?

#### ➤ About:

- ARTPARK is a not-for-profit foundation promoted by the Indian Institute of Science (IISc), Bengaluru to promote technology innovations in **artificial intelligence (AI) & Robotics**.

#### ➤ Initiatives:

- AI researchers at ARTPARK, in collaboration with HealthTech startup Niramai Health Analytix and the Indian Institute of Science (IISc), have also developed **XraySetu**.
  - XraySetu is a platform that can interpret chest X-rays with 98.86 % sensitivity toward **Covid-19** within few seconds.
- ARTPARK also organized the **ARTPARK Innovation Summit** that brought industry, academia and the government under one roof to discuss important topics such as:
  - How to create next-generation connectivity in rural areas, **health AI** for Bharat, connecting Bharat with **Drones**, inclusive learning for the future and building AI and research ecosystem.
- Apart from this, they participated in an unmanned ground vehicle (UGV) experiment of the **Indian Army** and showcased India's only Legged Robotic Dog.

### What are the Other Areas where AI can be Used?

#### ➤ Policing:

- With the help of AI, one can match **facial recognition** with the central database, predict the pattern of crime, analyse CCTV footage which are available across the country to identify suspects.
- Government is digitising all the records, especially the crime records, putting it into one single place called **CCTNS** where all the data including the image, biometrics, or the criminal history of a convict or suspect is available.

#### ➤ Agriculture:

- **AI Helping Analyse Farm Data:**
  - Farmers can analyse factors like weather conditions, temperature, water usage or soil

Note:



conditions collected from their farm to better inform their decisions.

#### ○ Precision in Agriculture:

- Precision agriculture uses AI technology to aid in detecting diseases in plants, pests, and poor plant nutrition on farms.
- AI sensors can detect and target weeds and then decide which herbicides to apply within the right buffer zone.

#### ➤ Education:

- The Ministry of Electronics and Information Technology (MeitY) had launched a **"Responsible AI for Youth"** programme in April 2022, wherein more than 11,000 students from government schools completed the basic course in AI.
- The Central Board of Secondary Education has integrated AI in the school curriculum to ensure that students passing out have the basic knowledge and skills of data science, machine learning and artificial intelligence.

#### ➤ Healthcare:

##### ○ Machine Learning:

- Application of AI can be beneficial in precision medicine – predicting what treatment protocols are likely to succeed on a patient based on various patient attributes and the treatment context.

##### ○ Natural Language Processing:

- NLP involves the creation, understanding and classification of clinical documentation and published research.
- NLP systems can analyse unstructured clinical notes on patients, prepare reports, transcribe patient interactions and conduct conversational AI.

### **What has the Government Done to Increase Rural Connectivity?**

#### ➤ National Broadband Mission:

- **NMB** will facilitate universal and equitable access to broadband services across the country, especially in rural and remote areas.
- The vision of the Mission is to fast-track growth of digital communications infrastructure, bridge the **digital divide**, facilitate digital empowerment and inclusion, and provide affordable and universal access to broadband for all.

#### ➤ Ghar Tak Fibre Scheme:

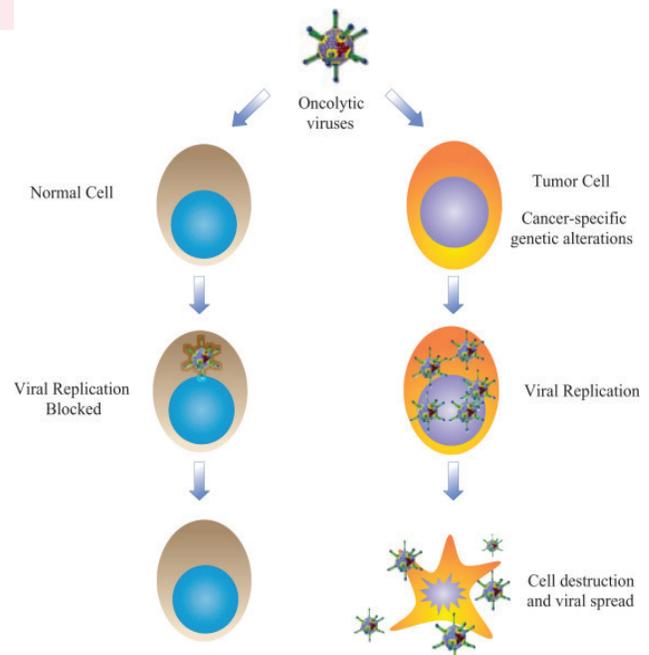
- **GTFS** aims to connect all 45,945 villages of Bihar with high-speed optical fibre.
- Under the scheme, Bihar has to provide at least five fibre-to-the-home (FTTH) connections per village and at least one WiFi hotspot per village.
- The Scheme will lead digital services including **e-Education, e-Agriculture, Tele-Medicine, Tele-law** and other social security schemes in Bihar ensuring easy access to all state natives.
- It is also likely to boost the local employment generation with the implementation of Bharat Net initiative which will be done by recruiting local workers.

## **Oncolytic Virotherapy for Treating Cancer**

### **Why in News?**

Researchers in the US have developed a **novel strategy in Oncolytic Virotherapy (OV) to improve a cancer therapy** that can kill tumour cells while leaving nearby healthy tissues intact.

- Earlier a **Mono-clonal Antibody** trial was held in the USA, where **12 patients were completely cured of rectal cancer** without requiring any surgery or chemotherapy.



Note:



### What is Oncolytic Virotherapy?

- Oncolytic viruses can **kill cancer cells while leaving nearby healthy cells and tissues intact**.
- In oncolytic virotherapy, the **treatment also exerts its influence by activating an antitumor immune response made of immune cells** such as Natural Killer (NK) cells.
- However, sometimes those natural killers limit the oncolytic viruses, and so despite the exciting development in the OV field in recent years, **there is room for improvement to tackle some limitations**, including the relatively weak therapeutic activity and lack of means for effective systemic delivery.

### What is the Novel Approach?

- A **region of the gene is deleted which shows to activate the signaling pathway** that enables the virus to replicate in normal cells.
- It consists of a **new oncolytic virus called FusOn-H2**, based on the Herpes simplex 2 virus, (HSV-2), commonly known as genital herpes.
- Arming FusOn-H2 with a chimeric NK engager that can engage the infiltrated natural killer cells with tumour cells **can significantly enhance the effectiveness of this virotherapy**.

### What is Cancer?

- **About:**
  - It is a **large group of diseases that can start in almost any organ or tissue of the body when abnormal cells grow uncontrollably**, go beyond their usual boundaries to invade adjoining parts of the body and/or spread to other organs. The latter process is called metastasizing and is a major cause of death from cancer.
  - A **neoplasm and malignant tumor are other common names** for cancer.
  - Lung, prostate, colorectal, stomach and liver cancer are the most common types of cancer in men, while breast, colorectal, lung, cervical and thyroid cancer are the most common among women.
- **Cancer Burden:**
  - Cancer remains as one of the leading causes of adult illness and death due to chronic and **Non-Communicable Diseases (NCD)** world-over including in India.

- According to the **World Health Organisation (WHO)**, cancer is the second leading cause of death globally and in 2018, there were approximately 18 million cases globally, of which 1.5 million were in India alone.

#### ➤ **Prevention:**

- **Between 30% and 50% of cancer deaths could be prevented by modifying or avoiding the key risk factors.**
- Key risk factors include tobacco use, alcohol use, diet, exposure to ultraviolet radiation, pollution, chronic infections, etc.

#### ➤ **Treatment:**

- Options include surgery, cancer medicines and/or radiotherapy, administered alone or in combination.
- Palliative care, which focuses on improving the quality of life of patients and their families, is an essential component of cancer care.

### What are the Related Initiatives?

- **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke**
- **National Cancer Grid**
- **National Pharmaceutical Pricing Authority**
- **International Agency for Research on Cancer**
- **National Cancer Awareness Day**

## Biomolecular Alterations Post EPV Infection

### Why in News?

Scientists have found that **cancer**-causing virus **Epstein Barr Virus (EBV)** can infect the neuronal cells and drive various changes in biomolecules.

- A researchers utilized the **Raman Microspectroscopy Technique**, under **FIST (Fund for Improvement of S&T Infrastructure)** scheme to explore the **possible impacts of a cancer-causing virus on brain cells**.
- **Biomolecules** are an organic molecule that includes carbohydrates, protein, lipids, and nucleic acids.

### What is EBV?

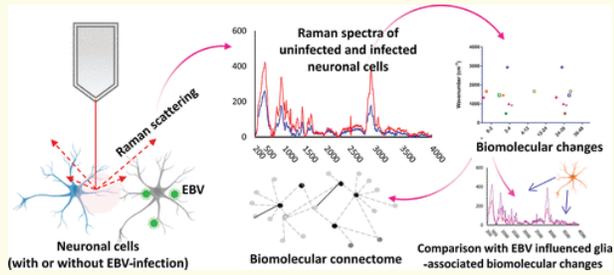
- EBV is a **virus in the herpesvirus family** that can infect humans.

Note:



### What is Raman microspectroscopy?

- Raman is a **light scattering technique, whereby a molecule scatters incident light from a high intensity laser light source.**
  - Most of the scattered light is at the same wavelength (or color) as the laser source and does not provide useful information – this is called Rayleigh Scatter. However, a **small amount of light (typically 0.000001%) is scattered at different wavelengths (or colors), which depend on the chemical structure of the analyte – this is called Raman Scatter.**
- Raman microspectroscopy is a **vibrational spectroscopy technique used for investigating molecular fingerprints** of a wide range of liquid or solid samples.
- The technique can be efficiently utilized to understand virus-mediated cellular changes and could **provide valuable insights into specific biomolecular alterations.**



- EBV virus has been found to be widely present in the human population. It usually does not cause any harm, but the **virus gets reactivated inside the body in some unusual conditions like immunological stress or immunocompetence.**
- This may further lead to various complications like **a type of blood cancer called Burkitt's lymphoma, stomach cancer, multiple sclerosis, and so on.**

### What are the Findings?

- It can change biomolecules such as **fatty acids, carbohydrates, and protein components, leading to diseases of the central nervous system** as well as brain cancer.
  - Earlier studies provided links of **EBV involvement in various neurodegenerative diseases.** However, how this virus can affect the cells of brain and manipulate them is still unexplored.
- There may be **timely and gradual changes in various biomolecules in the neuronal cells under viral influence.**

- Additionally, these changes were distinct when compared to the changes observed in other supportive brain cells (that is, astrocyte and microglia).
- The lipid, cholesterol, proline, and glucose molecules **are increased in the cells under viral influence.**
- These biomolecular entities can ultimately **play pivotal roles in the viral seizure of cells.**

### What is FIST Scheme?

- The “Fund for Improvement of S&T Infrastructure (FIST)” of the Department of Science & Technology (DST) is intended to provide basic infrastructure and enabling facilities for promoting R&D activities in new and emerging areas and attracting fresh talents in universities & other educational institutions.
- It is considered as complimentary support for enabling Departments/ Centres/ Schools/ Colleges to pursue research activities more effectively and efficiently.
- The current emphasis on the immensely successful FIST programme is for orienting it towards the goal of Atmanirbhar Bharat by providing accessibility of the R&D infrastructure facilities not only for research activities in academic organizations but also for use by the start-ups/ manufacturing industries/ MSMEs.
- The duration of support for each FIST Project is for a period not exceeding 5 years.

## Dark Matter

### Why in News?

Recently, a highly sensitive experiment named **LUX-ZEPLIN (LZ)** has been used to detect dark matter in the universe in the U.S.

- Earlier, while investigating how the shape of dark matter affects the motion of stars in the centre of some galaxies (stellar bars), **scientists have found that out-of-plane bending can be explained** through dark matter halos in barred galaxies.

### What is Dark Matter?

- Dark matter is made up of particles that do not have a charge.
  - So, these particles are “dark”, namely because they do not emit light, which is an electromagnetic phenomenon, and “matter” because they possess mass like normal matter and interact through gravity.

Note:



- The **visible universe** we see is the result of various **interactions among the four Fundamental forces** acting upon the particles, namely-
  - **Strong nuclear force**
  - **Weak nuclear force**
  - **Electromagnetic force**
  - **Gravitation**
- Only 5% of the entire visible universe is made up of all matter and the rest of 95% is dark matter and dark energy.
  - So far gravitational force is less understood as its extremely weak force, and that's why it's not easy to detect any particle which interacts with gravitational force.

### **What is Dark Energy?**

- Dark Energy is a theorized type of energy that **exerts a negative, repulsive force, acting in the opposite direction of gravity.**
  - It has been proposed to explain the observed features of distant types of supernovae, which **reveal the universe expanding at an accelerated rate.**
- Dark Energy, like Dark Matter, is inferred from measurements of gravitational interactions between celestial objects rather than explicitly observed.

### **What is the difference between Dark Matter and Dark Energy?**

- **Dark matter acts as an attractive force**, a kind of cosmic mortar that holds our world together.
  - This is because dark matter interacts with gravity yet does not reflect, absorb, or emit light. Meanwhile, dark energy is a **repulsive force**, a kind of anti-gravity that **slows down the expansion of the universe**,
- **Dark energy** is by far the most powerful of the two, accounting for **around 68% of the universe's total mass and energy.**
  - Dark matter accounts for 27% of the total. The rest, a meagre 5%, is all the ordinary matter we see and interact with on a daily basis.
  - This also helps in **speeding up the universe's expansion.**

### **What is the Proof of Dark Matter?**

- There is **strong indirect evidence**, as reflected in various levels like **distance scales**, for example:

- For example, as you move from the centre of the galaxy to its periphery, there is a significant disparity between the observed plot of star speeds and their estimated figure.
- This implies that the galaxy has a significant amount of dark matter.
- Other distance scale evidence:
  - There are **many levels to observe the universe** like the level of **electrons and nuclei of atoms, galaxies, galaxy clusters**, or even larger distances where the entire universe can be mapped and studied.
  - There are **Bullet clusters of galaxies** that are formed through the **merging of two galaxies**, as per scientists their merger could only be explained through the presence of some dark matter.

### **What are the particles used to observe dark matter?**

- **Neutrino** would have been very helpful in detecting dark matter but they are too light and hence would not be useful.
- There are **several other proposed entities** which include the **Z boson's supersymmetric companion**, a particle that **mediates the electro-weak interaction.**
- But still, no proper particle had been found which can interact with gravity and is also detectable using present technology on earth.

## **HPV Vaccine**

### **Why in News?**

**Cervavac**, a vaccine developed by the **Serum Institute of India (SII)**, has recently acquired market authorization from the **Drugs Controller General of India (DGCI)**.

- it is India's first **Quadrivalent Human Papillomavirus Vaccination (qHPV)** designed to protect women from cervical cancer.

### **What is Cervical Cancer?**

- **Cervical cancer** is a prevalent sexually transmitted infection.
- It's a type of cancer that occurs in the cells of the cervix, the lower part of the uterus that connects to the vagina.
- It is mostly caused by long-term infection with particular forms of HPV.

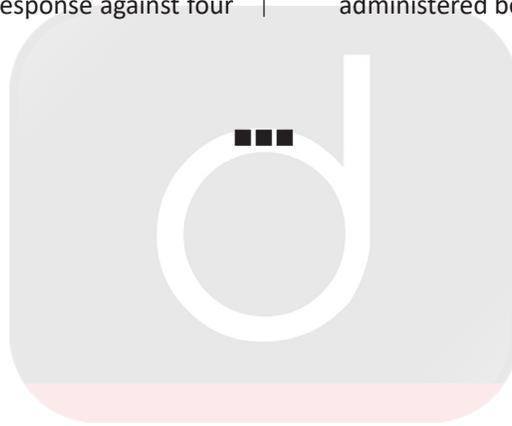
Note:



- It is the second most prevalent cancer form and the second leading cause of cancer death in women of reproductive age (15-44).
- **Indian Perspective:**
  - According to the **World Health Organization's International Agency for Research on Cancer**, India accounts for roughly **one-fifth of the global burden**, with 1.23 lakh cases and around 67,000 fatalities every year.

#### ***What is the Significance of the new Vaccine?***

- It's based on **VLP (Virus-Like Particles)**, similar to the **Hepatitis B** vaccination, and gives protection by producing antibodies against the HPV virus' L1 protein.
  - It is said to be effective against four strains of the virus - Type 6, Type 11, Type 16 and Type 18.
  - A **quadrivalent vaccine** is a vaccine that works by stimulating an immune response against four
- different antigens, such as four different viruses or other microorganisms.
- It has a significant potential to eliminate cervical cancer and it would be helpful if it will be included in national HPV vaccination efforts and offered at a **lower cost** than existing vaccinations.
  - Existing Two vaccines licensed globally are available in India — a quadrivalent vaccine (Gardasil, from Merck) and a bivalent vaccine (Cervarix, from GlaxoSmithKline) and are costly and none of them are included in the **national immunization program**.
- After the DGCI approval, it would enable the government to procure vaccines in bulk in order to vaccinate around 50 million girls aged between 9 to 14 years.
- The vaccine is extremely effective only when it's administered before the first sexual intercourse.



Note:



# Environment and Ecology

## Highlights

- Plastic Waste Minimisation: NITI Aayog
- Forest (Conservation) Rules, 2022
- Red Panda
- UN Oceans Conference 2022
- Water Security in Asia
- India's Largest Floating Solar Power Project
- Environment Protection Act, 1986
- Regulating Nitrate absorption in Plants
- Australia Killing Million of its Bees
- Chenkurinji
- Direct-seeded Rice
- Sustainable Use of Wild Species: IPBES Report
- Dragon Fruit

## Plastic Waste Minimisation: NITI Aayog

### Why in News?

Recently, **NITI Aayog** has released a report titled '**Alternative Products and Technologies to Plastics and their Applications**' to encourage use of alternatives of plastics.

- The Ministry of Environment, Forest and Climate Change has also banned **Single Used Plastics (SUP)**, violation of the ban will invite punitive action under **Section 15 of the Environment Protection Act (EPA)**.

**ENVIRONMENTAL IMPACT**  
The single use plastic is believed to take thousands of years to decompose, which leads to soil and water contamination and can pose hazards for land, water, and wildlife. In some cases, the existence of single use plastic in water or food is leading to presence of plastics in human body, and health issues.



**HEALTH AND SOCIAL IMPACT**  
Instances of open burning of plastic waste leads to air pollution. In some developing countries, plastic is burnt for cooking or heating purposes causing health issues in vulnerable groups such as women, children, and the elderly. The littering at open spaces such as parks lead to welfare losses which accounts as indirect social cost of plastic pollution.

**ECONOMIC IMPACT**  
The littering of plastic is visually unattractive and has potential to impact GDP of countries dependent on tourism. The plastic pollution in oceans has economic impact across tourism, shipping, and fishing industries. Other than this sustainable plastic waste management can move plastic from 'waste' to a 'renewable resource'. Plastic pollution costs \$13 billion per year as economic damage to marine ecosystem.

Environmental, health and economic impact of plastic waste

### What are the Findings of the Report?

- **Global Plastic Production and Disposal:** Between 1950-2015, the **cumulative production of polymers,**

**synthetic fibre and additives was 8,300 Million Tonnes (MT)**, of which 55% went straight to landfills or were discarded, 8% incinerated, and only 6% were recycled.

- By 2050 if production is continued at the same rate, it would generate 12,000 MT.

- **India's Case:** India **produced 3.47 million tonnes of plastics waste per Annum**, with the per capita waste growing from 700 grams to 2,500 grams **over the last five years.**

- Goa, Delhi & Kerala have **reported the highest per capita plastic waste generation**, while Nagaland, Sikkim and Tripura have reported the lowest per capita plastic waste generation.

- **Concern:** Globally, 97-99% of these plastics are derived from fossil fuel feedstock while the remaining 1-3% come from bio (plant) based plastics.

- **Only a small amount of this plastic waste gets recycled**, adding that a majority of this waste leaks into the environment through various polluting pathways.

- India collects **only 60% of its plastic waste with the rest 40% remaining uncollected** and enters the environment directly as waste.

- Nearly every piece of plastic begins as a fossil fuel, and greenhouse gases (GHG) are emitted at each stage of the plastic lifecycle: a) fossil fuel extraction and transport, b) plastic refining and manufacture, c) managing plastic waste, and d) ongoing effects within oceans, waterways, and various ecosystem landscapes.

Note:



## Best practices in plastic waste management

Sl. No.	State	Best Practice
1	Andhra Pradesh	Plastic waste collected from local bodies or biomining sites is sent for co-processing in cement plants
2	Arunachal Pradesh	Plastic banks were established in one district; Plastic was used in Road Construction in variable districts
3	Goa	Non-biodegradable waste is sent to co-processing plants for which bailing plants have been set up by Goa Waste Management Agency, Local bodies as well as Village Panchayats
4	Gujarat	94000T of plastic waste was sent for incineration during 2019-20s.
5	Haryana	All municipal corporations have been directed to set up material recovery facilities. 41 out of 81 MCs have set up the MRP

**What are the Recommendations?**

- The most preferred option for the management of waste is **waste minimisation**. Strengthen the waste minimisation drive through **Extended Producer Responsibility (EPR)**, proper labelling and collection of compostable and biodegradable plastics, while **relaxing the deadline for adoption of biodegradable plastic**.
- Develop **emerging technologies**, e.g., **additives can make plastics biodegradable polyolefins**, such as polypropylene and polyethylene
- Use of **Bio-plastics: as a cost-effective** alternative to plastics.
- Encourage R&D (Research and Development) and incentivize the manufacturing sector.
- Enhance **transparency in disclosing waste generation**, collection, recycling or scientific disposal to bring accountability and avoid greenwashing.
  - Greenwashing is the **process of conveying misleading information about how a company's products are more environmentally sound**.

**What can be the Alternatives to Plastics?**

- **Glass:**
  - Glass has always been the **safest and the most viable option for the packaging** and use of food and liquid.
  - Glass can be recycled multiple times, so it doesn't have to end up in landfills. It is **cost-effective, considering its durability and recyclability**.
- **Bagasse:**
  - Compostable, eco-friendly **bagasse can replace plastic** needing as disposable plates, cups or takeout boxes.
  - Bagasse is made from the pulp that is leftover when the juice is extracted from sugarcane or beets. It can be **used for other purposes, such as a biofuel**.

➤ **Bioplastics:**

- Plant-based plastics, known as bioplastics, have been hailed as a green alternative to fossil fuel-based plastic, especially when it comes to **food packaging**.
- But bioplastics have their own environmental footprint, requiring the growing of crops and therefore land and water use.
- Bioplastics have been shown to be just as harmful, and in some cases more harmful, than conventional plastic.

➤ **Natural Textiles:**

- When it comes to replacing polyester and nylon clothing which shed millions of tiny plastic fibres with every single wash, the **traditional alternatives are cotton, wool, linen and hemp**.
  - But the production of cotton has been causing serious threats to the environment and also comes at a human cost.

➤ **Refill, reuse and buy unpackaged:**

- By far the least damaging type of packaging is **one that can be used again and again, or none at all**.
  - Reusable fabric bags for fruit & veg etc.
  - Reusable containers and boxes for meat, fish, cheese etc.
  - Refillable bottles and jars for oil & vinegar, cleaning liquids etc.
  - Beeswax wraps instead of foil and clingfilm.

**What are the Related Initiatives?**

- **Plastic Waste Management rules 2016**
- **Plastic Waste Management Amendment Rules, 2021**
- **Central Pollution Control Board (CPCB)**
- **Pollution Control Committees**
- **India Plastics Pact**
- **Project REPLAN**
- **Un-Plastic Collective**
- **GoLitter Partnerships Project**

**Forest (Conservation) Rules, 2022****Why in News?**

Recently, the **Ministry of Environment, Forest and**

Note:



**Climate Change (MoEFCC) has issued the Forest (Conservation) Rules, 2022.**

- It is conferred by **Section 4 of the Forest (Conservation) Act, 1980** and in **supersession of the Forest (Conservation) Rules, 2003.**

### **What are the Provisions of Forest (Conservation) Rules, 2022?**

- **Formation of Committees:**
  - It constituted an **Advisory Committee**, a **regional empowered committee** at each of the integrated regional offices and a **screening committee** at State/ Union Territory (UT) government-level.
- **Advisory Committee:**
  - The role of the Advisory Committee is restricted to **advise or recommend with regards to grant of approval** under relevant sections in respect of proposals referred to it and **any matter connected with the conservation of forests** referred to it by the Central government.
- **Project Screening Committee:**
  - The MoEFCC has directed the constitution of a **project screening committee in each state/UT for an initial review of proposals involving diversion of forest land.**
  - The five-member committee **will meet at least twice every month** and will advise the state governments on projects in a time bound manner.
  - All **non-mining projects between 5-40 hectares** must be reviewed within a period of 60 days and all such mining projects must be reviewed within 75 days.
  - For projects involving a larger area, the committee gets some more time — 120 days for non-mining projects involving more than 100 hectares and 150 days for mining projects.
- **Regional Empowered Committees:**
  - All **linear projects (roads, highways, etc)**, projects involving forest land up to 40 hectares and those that have projected a use of forest land having a canopy density up to 0.7 — irrespective of their extent for the purpose of survey — **shall be examined in the Integrated Regional Office.**
- **Compensatory Afforestation:**
  - The applicants for diverting forest land in a hilly or mountainous state with green cover covering

more than two-thirds of its geographical area, or in a state/UT with forest cover covering more than one-third of its geographical area, will be able to take up compensatory afforestation in other states/ UTs where the cover is less than 20%.

### **What are the other Initiatives for Forest Conservation?**

- **Indian Forest Policy, 1952:**
  - It was a simple **extension of colonial forest policy.** However, it became conscious about the need to increase the forest cover to one-third of the total land area.
    - At that time maximum annual revenue from forests was the vital national need. The **two World Wars, need for defence, developmental projects such as river valley projects**, industries like pulp, paper and plywood, and communication heavily depended on forest produce for national interest, as a result, **huge areas of forests were cleared to raise revenue for the State.**
- **Forest Conservation Act, 1980:**
  - It stipulated that the central permission is necessary to practice sustainable **agro-forestry in forest areas.** Violation or lack of permit was treated as a **criminal offence.**
    - It is targeted to **limit deforestation, conserve biodiversity and save wildlife.** Though this Act provides greater hope towards forest conservation it was not successful in its target.
- **National Forest Policy, 1988:**
  - The ultimate objective of the National Forest policy was **to maintain environmental stability and ecological balance** through conservation of forests as a natural heritage.
    - It made a very significant and categorical shift from commercial concerns to **focus on the ecological role of the forests and participatory management.**
    - It envisages a **goal of achieving 33% of the geographical area of the country under forest and tree cover.**
- **National Afforestation Programme:**
  - It has been implemented by the Ministry of Environment, Forest and Climate Change since 2000 for the afforestation of degraded forest lands.

Note:



➤ **Other Related Acts:**

- The **Wildlife Protection Act of 1972**, The **Environment Protection Act of 1986**, and The **Biodiversity Diversity Act of 2002**.
- **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006:**
  - It has been enacted to **recognize and vest the forest rights and occupation of forest land in forest-dwelling Scheduled Tribes and other traditional forest dwellers**, who have been residing in such forests for generations.

### Forest in India

➤ **About:**

- According to **India State of Forest Report, 2021**, the **Total Forest and Tree cover is now 7,13,789 square kilometres, 21.71% of the country's geographical area**, an increase from 21.67% in 2019.
- **Forest Cover (Area-wise):** Madhya Pradesh> Arunachal Pradesh> Chhattisgarh> Odisha> Maharashtra.

➤ **Category:**

- **Reserved Forests:**
  - Reserve forests are the most restricted forests and are constituted by the State Government on any forest land or wasteland which is the property of the Government.
  - In reserved forests, local people are prohibited, unless specifically allowed by a Forest Officer in the course of the settlement.
- **Protected Forests:**
  - The State Government is empowered to constitute any land other than reserved forests as protected forests over which the Government has proprietary rights and the power to issue rules regarding the use of such forests.
  - This power has been used to establish State control over trees, whose timber, fruit or other non-wood products have revenue-raising potential.
- **Village Forest:**
  - Village forests are the one in which the State Government may assign to 'any village community the rights of Government to or over any land which has been constituted a reserved forest'.

○ **Degree of Protection:**

- Reserved forests > Protected forests > Village forests.

➤ **Constitutional Provisions:**

- Through the **42<sup>nd</sup> Amendment Act, 1976** Forests and Protection of Wild Animals and Birds were **transferred from State to Concurrent List** along with Education, Weights & Measures and Administration of Justice.
- **Article 48 A** in the **Directive Principles of State policy**, mandates that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.
- **Article 51 A (g)** of the Constitution states that it shall be the **Fundamental Duty** of every citizen to protect and improve the natural environment including forests and Wildlife.

## Red Panda

### Why in News?

Recently, the **Padmaja Naidu Himalayan Zoological Park** has started an ambitious programme to release **20 Red Pandas** in about five years to the forests.

- **The Singalila National Park**, the highest protected area in West Bengal, will soon get new denizens.

### What are the Key Points related to Red Panda?

➤ **About:**

- There are only two different panda species in the world, the **Giant Pandas** and the **Red Pandas**.
- It is also the state animal of **Sikkim**.
- Red Pandas are shy, solitary and arboreal animals and considered an indicator species for ecological change.
- India is home to both the (sub) species:
  - Himalayan red panda (*Ailurus fulgens*)
  - Chinese red panda (*Ailurus styani*)
    - **Siang river** in Arunachal Pradesh splits the two phylogenetic species.
- It is found in the forests of **India, Nepal, Bhutan and the northern mountains of Myanmar and southern China**.
- The number of Red Pandas has been declining in the wild, even in the **Singalila** and **Neora Valley**

Note:



**National Parks**, the two protected areas where the endangered mammal is found in the wild in West Bengal.

➤ **Protection Status:**

- **Red Pandas:**
  - **IUCN Red List:** Endangered
  - **CITES:** Appendix I
  - **Wildlife Protection Act 1972:** Schedule I
- **Giant Pandas:**
  - **IUCN Red List:** Vulnerable
  - **CITES:** Appendix I

**What do we know about the Red Panda Release Programme?**

- **Padmaja Naidu Himalayan Zoological Park** has started an ambitious programme to release 20 of these furry mammals in about five years to the forests.
  - The Padmaja Naidu park, Darjeeling is one of the high-altitude zoos in the country and has been quite successful in captive breeding of the furry mammals.
- The Pandas will be released in the **Singalila National Park**, the highest protected area in West Bengal.
  - Singalila National Park is located at the **Singalila Ridge in the Darjeeling** district.
  - It is the **highest altitude park** in the state of West Bengal.
  - It was initially a **wildlife sanctuary** and made into a National Park in 1992.
  - Other national parks of West Bengal are:
    - Jalda Para National Park
    - Neora Valley National Park
    - **Sundarbans National Park**
    - Gorumara National Park
    - Buxa National Park and Tiger Reserve

**What are India's Conservation Efforts for Red Panda?**

- **Securing the red panda habitat:**
  - **WWF-India** works with local communities to reduce their dependence on fuelwood by introducing them to innovative techniques to meet their energy demands.
  - In Sikkim, more than 200 individuals have been trained in manufacturing bio-briquettes.

➤ **Garnering local support:**

- Local communities are **involved in alternate livelihood activities** that draw benefits for them, while also supporting conservation initiatives.
- In Arunachal Pradesh, community-based tourism enables the locals to earn additional income from the tourists coming to see red pandas.

➤ **Mitigating threats to red panda populations:**

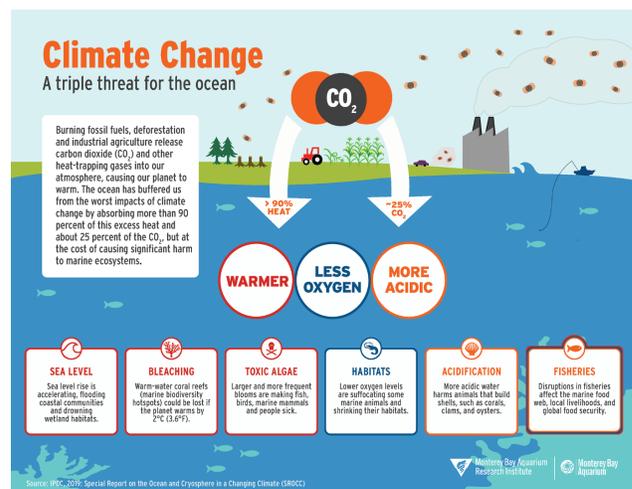
- **Working with local communities to reduce forest dependence** and involving them in conservation measures addresses the threat of habitat degradation and fragmentation.
- WWF-India has also collaborated with the **Sikkim Anti-Rabies and Animal Health (SARAH)** and launched a programme to sterilize feral dogs in order to control their growing population around critical wildlife areas.

## UN Oceans Conference 2022

### Why in News?

Recently, the **UN (United Nations) Ocean Conference 2022** was held to ensure global cooperation towards protection and sustenance of the **Ocean ecosystem** of the world.

- The conference was **co-hosted by the Governments of Kenya and Portugal**.
- **Minister of Earth Sciences** led the Indian delegation at UN Ocean Conference. India promised to provide **science and innovation-based solutions for the implementation of Goal 14** through partnerships and environmentally friendly.



Note:



- The UN Ocean conference 2022 is aligned to **SDG (Sustainable Development Goals) 14 'life below water'** and stresses on the critical need for scientific knowledge and marine technology to build ocean resilience.

### What are the Key Agenda of the Conference?

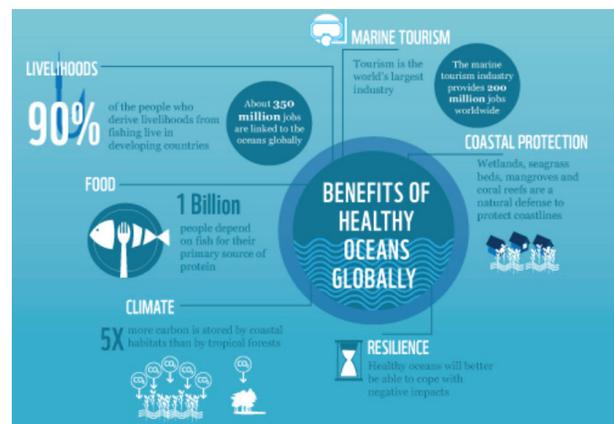
- **Moratorium on Deep Sea Mining:**
  - Push for a moratorium on **deep-sea mining** of rare metals needed for a boom electric vehicle battery construction.
  - The digging and gauging of the ocean floor by machines can alter or destroy deep-sea habitats.
- **Carbon Sequestration:**
  - Focus on **carbon sequestration** to boost the ocean's capacity to soak up CO<sub>2</sub>, by either enhancing natural sinks such as mangroves or through geoengineering schemes.
- **Blue Deal:**
  - A "Blue Deal" was promoted to enable the sustainable use of ocean resources for economic growth.
  - It includes **global trade, investment and innovation to create a sustainable and resilient ocean economy.**
  - Focus on **blue food** to ensure marine harvests from all sources are sustainable and socially responsible.
- **High Seas are Unregulated:**
  - No comprehensive legal framework covers the high seas. Oceans cover **some 70% of the earth's surface and provide food and livelihoods for billions of people.**
  - Some activists refer to them as the **largest unregulated area on the planet.**
- **Threat to Ocean:**
  - Threats to the oceans include **global warming, pollution (including plastic pollution), acidification, marine Heatwaves** etc.

### What are the Initiatives to Ensure Sustainable Ocean Ecosystem?

- **Decade of Ocean Science for Sustainable Development:**
  - The UN has proclaimed a Decade of Ocean Science for Sustainable Development (2021-2030) to support efforts to **reverse the cycle of decline in ocean health and gather ocean stakeholders worldwide** behind a common framework.

### World Oceans Day:

- 8<sup>th</sup> June is **World Oceans Day**, the United Nations day for celebrating the role of the oceans in our everyday life and inspiring action to protect the ocean and sustainably use marine resources.
- **Marine Protected Areas:**
  - In general terms, a Marine Protected Area (MPA) is a marine area that provides protection for all or part of the natural resources it contains.
- **GloLitter Partnerships Project:**
  - It is launched by the **International Maritime Organization (IMO) and the Food and Agriculture Organization** of the UNs (FAO) and initial funding from the Government of Norway. It is aimed to prevent and reduce marine plastic litter from shipping and fisheries.
- **India-Norway Ocean Dialogue:**
  - In 2019, the Indian and Norwegian governments **agreed to work more closely on oceans by signing a MoU** and establishing the India-Norway Ocean Dialogue.
- **India's Deep Ocean Mission:**
  - it is a mission mode project to support the Blue Economy Initiatives of the Government of India.
- **India's Indo-Pacific Oceans Initiative (IPOI):**
  - It is an **open, non-treaty based initiative for countries to work together for cooperative and collaborative solutions** to common challenges in the region.



## Water Security in Asia

### Why in News?

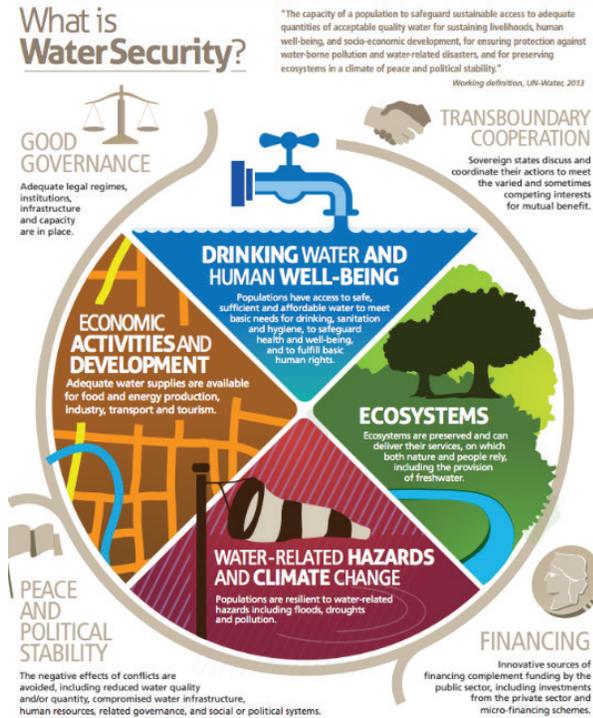
Note:



Recent findings by the scientists of southeast Asian countries show that the **urban water security in Asian cities including Delhi is in decline.**

- The global mega cities like Tokyo, Shanghai, and Delhi are the symbol of the rise of the new Asian century as they are the three biggest in the world, engines of economic growth, producing billions in economic activity for their residents and the world.
- But they have a serious problem i.e., there is not enough fresh water available per person for their daily needs.

### What is Water Security?



### What are the Issues?

- **Amount of Freshwater:**
  - In Asia, there is half as much freshwater as there is globally.
- **Low Water Efficiency:**
  - Despite the comparatively large amount of water used in agriculture production, water efficiency is also among the lowest in the world, and low water productivity results in low crop yields.
- **Urban Pollution:**
  - Water problems are common in many big cities. Degradation of the environment has been caused by population and economic growth due to

industrial activities and discharge of industrial waste in water bodies.

- Existing water resources just cannot meet the rising demand.
- **Climate change:**
  - Due to climate change, extreme weather events like droughts and floods are becoming more frequent, which exacerbates the problem.
- **Examples:**
  - **Over-exploitation in Bangkok, Thailand,** has severely **reduced groundwater levels**, causing land to subside.
    - Water sources around the city are also polluted due to the direct discharge of domestic sewage into drains and canals.
    - Similarly, Bangkok's inadequate drainage capacity and its location in the Chao Phraya River floodplains make it susceptible to flooding.
  - **Hanoi, Vietnam,** is one of the fastest-growing cities in terms of GDP growth, contributing more than 19% of the country's total GDP.
    - The repercussions of this growth are felt directly in its **polluted lakes and rivers due to wastewater from residential and industrial areas.**
  - **Madaba in Jordan is a water-scarce city.**
    - Although 98% of the city's population has access to water, residents are often forced to rely on alternative sources of storage such as large tanks or private water vendors to meet their needs due to inconsistent water supplies.

### What are the Suggestions?

- **Policy Intervention:**
  - Practical interventions can help, like the **integrated urban water security assessment framework**. It can be used to assess the full spectrum of a city's urban water security by considering the driving forces that can impact it.
- **Leveraging Technology:**
  - Researchers at **Thailand's Asian Institute of Technology (AIT) have developed WATSAT**, a web-based water security assessment tool that can evaluate where cities stand by measuring five distinct aspects of urban water security: water supply, sanitation, water productivity, water environment and water governance.

Note:



### ➤ Local Solutions:

- Cities that embrace new ways to manage water can improve the livelihoods of their populations and support continued growth. For example, **Bangkok has adopted incentives for water management** to include the treatment of wastewater at the household level before being released into public water sources.
  - As a part of **Bangkok Vision 2032**, the programme will also monitor the chemical properties of water in canals and improve cleanliness to prevent illnesses and safeguard the environment.
- **Jordan's water action plan** includes building decentralised infrastructures such as rainwater harvesting or wastewater treatment to supplement water supplies. Financial or tax incentives to encourage businesses to reuse treated wastewater instead of freshwater are also managing demand and efficiency.

### ➤ Planning and implementation:

- There is an urgent need for **plans to stop water supply losses due to leaking pipes** which will also increase productivity.
- These include **enhancing financial sustainability** through water tariffs, installing new metering devices, attempting to detect unauthorised usage in water pipelines, and using monitoring systems.
- The strategy also entails **allocating water to repair important ecosystems like forests**, marshes, and rivers for improved conservation, which is another instance of how nature-based solutions play a role.

## India's Largest Floating Solar Power Project

### Why in News?

Recently, the final 20 MW of the 100 MW Ramagundam **floating solar PV** project's commercial operation date was recently announced.

- With this, the **100 MW Ramagundam floating solar PV project in Telangana** is declared operational from 1<sup>st</sup> July 2022.
- It is the **largest project of its kind in India**.

### What are Floating Solar Panels?

- These are Photovoltaic (PV) modules mounted on platforms that float on water reservoirs, lakes, and where conditions are right seas and oceans.
- These platforms are typically moored on calmer bodies of water, such as ponds, lakes or reservoirs.
- These installations are relatively quick to construct, silent to run and require no land levelling or removal of vegetation.



### What are its Key

### Highlights of Ramagundam Project?

- It is endowed with advanced technology and Environment-friendly features.
- The project spreads over **500 acres of the reservoir**. Divided into 40 blocks, each having 2.5 MW.
- Each block consists of **one floating platform and an array of 11,200 solar modules**.
- **The solar modules are placed on floaters manufactured with HDPE (High-Density Polyethylene) material.**
  - The entire floating system is anchored through special **HMPE (High Modulus Polyethylene)** rope to the dead weights placed in the balancing reservoir bed.
  - This project is unique in the sense that **all the electrical equipment** including inverter, transformer, HT panel, and SCADA (Supervisory Control and Data Acquisition) **are also on floating Ferro cement platforms**.

### What are the Environment Benefits of the Project?

#### ➤ Limited Land Required:

- From an **environmental point of view**, the most obvious advantage is the **minimum land requirement** mostly for associated evacuation arrangements.

Note:



- **Reduce Water Evaporation Rate:**
  - Further, with the presence of floating solar panels, the **evaporation rate from water bodies is reduced**, thus helping in **water conservation**.
  - Approximately 32.5 lakh cubic meters per year of water evaporation can be avoided.
- **Efficient in Reducing Co2 Emission:**
  - The water body underneath the solar modules helps in maintaining their ambient temperature, thereby improving their efficiency and generation. Similarly, while **coal consumption of 1,65,000 Tons can be avoided per year; Co2 emission of 2,10,000 tons per year can be avoided**.

### **What are the Related Challenges?**

- **Expensive to Install:**
  - **More money is required to install floating solar panels** than a traditional PV system.
  - One of the main reasons is because the technology is relatively new, thus requires specialized knowledge and equipment.
    - However, as the technology advances, its installations costs are also expected to drop.
- **Limited Application:**
  - Many floating solar installations are large-scale, and **they provide electricity to large communities, companies, or utility companies**.
  - Hence, choosing rooftop installation or ground-mounted solar is more practical.
- **Understanding of Water-bed Topography:**
  - Developing floating solar projects requires a **thorough understanding of water-bed topography** and its suitability for setting up anchors for floats.

### **What are the other Solar Energy Initiatives?**

- **Solar Park Scheme**
  - Plan to build a number of solar parks, each with a capacity of nearly 500 MW, across several states.
- **Rooftop Solar Scheme**
  - To harness solar power by installing **solar panels** on the roof of the houses.
- **Atal Jyoti Yojana (AJAY):**
  - The AJAY scheme was launched in September 2016 for the installation of **solar street lighting (SSL)** systems in states with less than **50%** households covered with **grid power** (as per **Census 2011**).

## **Environment Protection Act, 1986**

### **Why in News?**

The **Ministry of Environment, Forest and Climate Change** proposed **amendments in the Environment Protection Act, 1986**.

- Incidentally, the **Environment Protection Act provisions will be in force for penal provisions of the single use plastic ban** which has come into force recently.

### **What are Key Amendments**

#### **Proposed in the Environment Protection Act?**

- The Ministry has proposed the **decriminalisation of the existing provisions of the EPA, 1986 in order to weed out fear of imprisonment for simple violations**.
  - It involves **removal of imprisonment as a penalty for the “less severe” contraventions**.
    - However, **serious violations of EPA** which lead to **grievous injury or loss of life** shall be covered under the provision of **Indian Penal Code**.
- Failure or contravention or non-compliance of the provisions of EPA such as submitting reports, furnishing information etc. will now be **dealt by imposing a monetary penalty through duly authorised Adjudicating Officer**.
- Instead of imprisonment, the amendments propose the creation of an **Environmental Protection Fund** in which the amount of **penalty imposed** by the Adjudicating Officer after adjudicating the damage to the environment **shall be remitted**.
  - The Central Government may prescribe the manner in which the Protection Fund shall be administered.

### **What is the Environment (Protection) Act, 1986?**

- **About:**
  - The EPA, 1986 establishes the framework for **studying, planning, and implementing long-term requirements of environmental safety** and laying down a system of speedy and **adequate response to situations threatening the environment.**
- **Background:**
  - The roots of the enactment of the EPA lies in the **United Nations Conference on the Human Environ-**

Note:



**ment held at Stockholm** in June, 1972 (Stockholm Conference), in which **India participated, to take appropriate steps for the improvement of the human environment.**

- The **Act implements the decisions made at the Stockholm Conference.**

➤ **Constitutional Provisions:**

- The **EPA Act was enacted under Article 253 of the Indian Constitution** which provides for the enactment of legislation for giving effect to international agreements.
- **Article 48A** of the Constitution specifies that the **State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.**
- **Article 51A** further provides that **every citizen shall protect the environment.**

➤ **Powers of the Central Government:**

- EPA empowers the **Central Government** to establish authorities charged with the **mandate of preventing environmental pollution in all its forms and to tackle specific environmental problems** that are peculiar to different parts of the country.
- EPA also empower the Government to:
  - **Plan and execute a nation-wide programme** for the prevention, control and abatement of environmental pollution.
  - **Lay down standards for the quality of the environment** in its various aspects like **emission or discharge of environmental pollutants from various sources.**
- The **Central government as per the Act has the power to direct:**
  - The **closure, prohibition or regulation of any industry, operation or process.**
  - The **stoppage or regulation of the supply of electricity or water or any other service.**

***What is the Current Status of Offences and Penalties under EPA?***

- Non-compliance or Contravention to any of the provisions of the Act is considered as an offence.
- **Cognizance of Offences:**
  - **No Court shall take cognizance of any offence under this Act except on a complaint** made by:

- The **Central Government or any authority on behalf** of the former.
- A person who has approached the Courts after a **60-day notice** has been furnished to the Central Government or the authority on its behalf.

➤ **Penalties:**

- In case of **any non-compliance or contravention of the current provisions of the EPA**, or of the rules under this Act, the violator can be punished with **imprisonment up to 5 years** or with a **fine up to Rs 1,00,000**, or with both.
  - In case of **continuation of such violation**, an **additional fine of up to Rs 5,000 for every day during which such contravention continues** after the conviction for the first such contravention can be levied.
  - If the **violation continues beyond a period of one year** after the date of conviction, the offender can be punished with **imprisonment for a term which may extend to seven years.**

***What are the Drawbacks of Environment Protection Act, 1986?***

➤ **Complete Centralisation of the Act:**

- A potential drawback of the Act could be its centralization.
  - While such wide powers are provided to the Centre and **no powers to the state governments**, the former is liable to its arbitrariness and misuse.

➤ **No Public Participation:**

- The Act also says **nothing about public participation** as regards environmental protection.
  - There is a **need to involve the citizens in environmental protection to check arbitrariness and raise awareness** and empathy towards the environment.

➤ **Incomplete Coverage of Pollutants:**

- The Act **does not address modern concepts of pollution** such as **noise, overburdened transport systems** and **radiation waves** which are also an important cause for the deteriorating environment.

***What are the other Initiatives to Protect Environment?***

➤ **India:**

- **National River Conservation Programme**

Note:



- **Green India Mission**
- **National Afforestation Programme**
- **National Coastal Management Programme**
- **National Mission on Himalayan Studies under Climate Change Program**
- **International Conventions to which India is a Signatory:**
  - The **Montreal Protocol to the Vienna Convention** on Substances that deplete the Ozone Layer, 1987.
  - **Basel Convention** on Transboundary Movement of Hazardous Wastes, 1989.
  - **Rotterdam Convention, 1998.**
  - **Stockholm Convention on Persistent Organic Pollutants (POPs).**
  - **UN Framework Convention on Climate Change (UNFCCC), 1992.**
  - **Convention on Biological Diversity, 1992**
  - **UN Convention to Combat Desertification, 1994**

## Regulating Nitrate absorption in Plants

### Why in News?

Researchers from the **National Centre of Biological Sciences, Tata Institute of Fundamental Research, Bengaluru (NCBS - TIFR)** discovered a new pathway that regulates nitrate absorption in plants.

#### Controlling nitrate absorption in plants

A novel pathway has been found, which can use gene editing to achieve this objective



**Approach:** The researchers used rice and tobacco plants to study the mechanism. ■ SPECIAL ARRANGEMENT

- Plants mainly absorb nitrogen from the soil in the form of nitrates and ammonium
- An important macronutrient, nitrogen is a part of chlorophyll, amino acids and nucleic acids

■ There is a need to regulate and optimise nitrogen intake in plants, so that the excess is not dumped in soil and water

■ The hormone auxin is responsible for well-developed roots across all plants, influencing nitrate absorption

#### ALTERNATE PATHWAY

■ The regulatory micro-RNA switch - miR444 - is known to turn off at least five genes

called MADS box transcription factor genes

■ A target gene of miR444 called MADS27, has a three-pronged effect: regulating nitrate absorption and root development, and stress tolerance

■ Tinkering with MADS27 may help regulate nitrate absorption and engineer abiotic stress tolerance

### What is the New Method?

- The researchers investigated a miR444 target gene called MADS27, a transcription factor that has previously received little attention.
  - Transcription factors are proteins involved in the **process of converting, or transcribing, DNA into**

**RNA.** Transcription factors include a **wide number of proteins, excluding RNA polymerase**, that initiate and regulate the transcription of genes.

- The micro-RNA, miR444, activates the **Gene MADS27**, which **regulates nitrate absorption, root development, and stress tolerance, and thus provides a way to control these plant properties.**
  - **The gene MADS27** appears to be an excellent candidate for modification in order to **improve nitrogen use efficiency**, which helps the plant absorb more nitrates, and to **engineer abiotic stress tolerance.**
- This mechanism was studied in both **rice (monocot) and tobacco (dicot) plants** by the researchers. The study was published in the Journal of Experimental Botany.

### What is the Importance of Nitrogen?

- Nitrogen is one of the most important macronutrients needed for development of a plant.
  - However, excessive use of nitrates in fertilisers, for example, can result in nitrate dumping in the soil, resulting in nitrate accumulation in water and soil. This **accumulation contributes to soil and water pollution**, as well as increased contribution to greenhouse gas emissions.
- It is a **part of chlorophyll, amino acids and nucleic acids**, among others.
- It is mostly sourced from the soil where it is mainly absorbed in the form of nitrates and ammonium by the roots.
- Nitrates also **influence genome-wide gene expression**, which in turn influences the root system, the biological clock of plants, leaf growth, and so on.

## Australia Killing Million of its Bees

### Why in News?

Australian authorities have killed millions of honeybees over the past two weeks in an effort to stop a potentially catastrophic parasite plague named **Varroa mite.**

- The decision to kill honeybees could adversely impact the growth of several crops including almonds,

Note:



macadamia nuts, and blueberries that are dependent on hives for pollination.

- Bees are some of the most important pollinators, ensuring food and food security, sustainable agriculture, and biodiversity.



### What is Varroa Mite?

- Its **parasitic insect infects and feeds on honeybees**, often known as the varroa destructor. The small pests, which are reddish-brown in colour, have been **capable of eradicating entire colonies of honeybees**.
- They frequently circulate amongst bees as well as through beekeeping supplies like removed combs.
- Although Varroa mites can feed and live on adult honey bees, they primarily feed and reproduce on larvae and pupae in developing brood, causing malformation and weakening as well as virus transmission.
  - As the mite population in bee colonies grows, the symptoms become more severe. In general, heavy infestations result in crippled bees, impaired flight performance, a lower rate of return to the colony after foraging, and reduced colony productivity.

## Chenkurinji

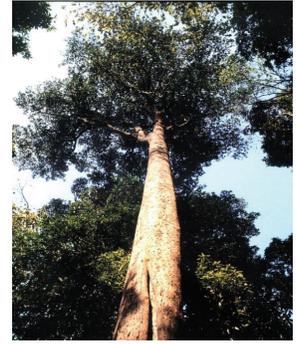
### Why in News?

**Chenkurinji** has been affected due to **climate change**, so, there are different conservation measures are being inducted.

### What do we know about the Species?

- Chenkurinji (*Gluta travancorica*), is a **species endemic to the Agasthyamala Biosphere Reserve**, and inspired the name of the Shendurney Wildlife Sanctuary.

- The **Anacardiaceae family tree was once abundant in the hills** on the southern parts of Aryankavu Pass, but its presence has been rapidly declining over the years.



- *Gluta travancorica* flowers in January on average, but the species has recently reported a tendency to extend the process due to climate change.
- It's used to treat lower blood pressure and treat arthritis.

### What is Agasthyamal Biosphere Reserve?

- The Agasthyamala Biosphere Reserve, located in the **Western Ghats** in the country's south, has peaks that rise 1,868 metres above sea level.
- The site, which is mostly tropical forest, is home to **various species of higher plants, including which are endemic in nature**.
- It is also a **unique genetic reservoir for cultivated plants, particularly cardamom, jamune, nutmeg, pepper, and plantain**.
- The site contains three wildlife sanctuaries, Shendurney, Peppara, and Neyyar, as well as the Kalakad Mundanthurai Tiger reserve.

### What type of conservation measures is being Implemented?

- **'Save Chenkurinji'**, a campaign to be implemented in various areas coming under the Achencoil Forest Division.
  - It aims to plant thousands of saplings as part of the campaign in the ghat sectors of the Kollam and Pathanamthitta districts.
  - Approximately 75 schools in the area where Chenkurinji will be grown with student help.
  - Saplings will be planted in public places in addition to schools, and the forest department has already cultivated thousands of seedlings for Save Chenkurinji.

## Direct-seeded Rice

### Why in News?

Note:



Recently, the state of Punjab was unable to achieve its target in the water-saving method (direct-seeded rice).

### What is Direct Seeded Rice (DSR)?

- **Direct Seeded Rice (DSR)**, also known as the 'broadcasting seed technique,' is a **water-saving method of sowing paddy**.
- In this method, **seeds are directly drilled into the fields. In contrast to the traditional water-intensive method of transplanting rice seedlings from a nursery to waterlogged fields**, this method saves groundwater.
- There is no nursery preparation or transplantation involved in this method.
- Farmers have to only level their land and give one pre-sowing irrigation.

### What are the Advantages of DSR?

- **Require Less Number of Labours:**
  - DSR can **solve labour shortage problems** because like the traditional method it does not require a paddy nursery and transplantation of 30 days old paddy nursery into the main puddled field.
- **Avenues for Groundwater:**
  - It offers **avenues for ground water recharge as it prevents the development of hard crust** just beneath the plough layer due to puddled transplanting.
    - It matures 7-10 days earlier than the puddle transplanted crop, therefore giving more time for management of paddy straw.
- **Increase in Yield:**
  - According to the results from research trials and farmers' field survey, after this technique the yield is one to two quintals per acre higher than puddled transplanted rice.

### What are the Major Issues Related to DSR?

- **Extreme climate:**
  - **High temperatures and deficient rainfall** are mainly to blame.
  - The temperature was in the range of 47-48 degrees Celsius on some days, whereas the ideal temperature is 42-43°C during the period.
  - **Farmers were hesitant** to choose DSR because their wheat crops had already suffered as a result of the heat wave.

### ➤ Reluctance by Farmers:

- **Due to a lack of support from the government** in the form of providing a good variety of weeds, and unable to supply uninterrupted electricity during the sowing season of DSR that's why farmers found it very difficult to irrigate the field using an electric motor.

### ➤ Governance issues:

- Punjab Government's **uninterrupted electricity supply for puddling season which begins in mid-June** is not beneficial for DSR as its sowing season is between **early May to mid-June** and that's why it is beneficial for the traditional method.

### ➤ Other Challenges:

- It includes **closed canals, erratic electricity supply for operating tube wells for irrigation, and issues of weeds and rats**.
- **Water availability was a challenge** due to **deficient to no rainfall** in many parts of the state of Punjab during May.

## Sustainable Use of Wild Species: IPBES Report

### Why in News?

A report released by the **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)** has stated that Sustainable use of wild species can meet needs of billions.

- Delegates from 140 countries came together to discuss and **reach an outcome on the sustainable use of wildlife**.
- The assessment shortlisted five categories of practices used for wild species — **Fishing, Gathering, Logging, Terrestrial animal harvesting** which includes hunting and non-extractive practices such as observing.
- The report is the first of its kind and has been **conceived after a period of four years**.

### What is IPBES?

- It is an **independent intergovernmental body**, established by member States in 2012.
- It **strengthens the science-policy interface for biodiversity and ecosystem services** for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development.

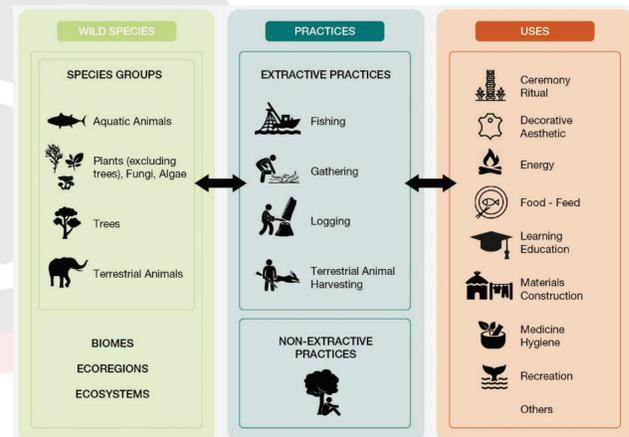
Note:



### What are the Findings?

- **Dependence on Wild Species:**
  - About **70% of the world's poor population** is directly dependent on wild species.
    - 20% source their food from wild plants, algae and fungi.
- **Wild-Species-Important Source of Income**
  - The use of wild species is an **important source of income** for millions of people worldwide.
  - Wild tree species **account for two thirds of global industrial roundwood**; trade in wild plants, algae and fungi is a billion-dollar industry; and even non-extractive uses of wild species are big business.
- **Local Variations:**
  - About 34% of marine wild fish stocks are overfished and 66% are fished within biologically sustainable levels. But within this global picture, there are significant local and contextual variations.
- **Unsustainable Logging of Tree Species:**
  - The survival of an estimated 12% of wild tree species is **threatened by unsustainable logging**.
  - **Unsustainable gathering** is one of the main threats for several plant groups, notably cacti, cycads and orchids.
  - **Unsustainable hunting** has been identified as a threat for 1,341 wild mammal species – with declines in large-bodied species that have low natural rates of increase also linked to hunting pressure.
- **Rural People are at Risk of Unsustainable Use:**
  - Rural people in developing countries are most at risk from unsustainable use of Wild Species, with lack of complementary alternatives often forcing them to exploit wild species already at risk.
    - About 50,000 wild species are used through different practices, including more than **10,000 wild species harvested directly for human food**.
- **Cultural Significance leading to Exploitation:**
  - Certain 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 is also a source of culturally meaningful employment for such communities and they have engaged in the trade of wild species and materials since millennia.

- Wild rice (*Zizania palustris* L.) is a cultural keystone species, providing physical, spiritual and cultural sustenance for many indigenous peoples in the Great Lakes region of North America
- **Drivers and Threats:**
  - Drivers such as land- and seascape changes; climate change; pollution and invasive alien species that impact the abundance and distribution of wild species, and can **increase stress and challenges among the human communities that use them**.
- **Illegal Trade:**
  - Global trade in wild species has expanded substantially in volume, value and trade networks over the past four decades.
  - Illegal trade in wild species represents the **third largest class of all illegal trade** – with estimated annual values of up to USD199 billion. Timber and fish make up the largest volumes and value of illegal trade in wild species.



### What are the Recommendations?

- **Integration of diverse value systems, equitable distribution of costs and benefits, changes in cultural norms and social values** and effective institutions and governance systems can facilitate the sustainable use of wild species in future.
- Addressing the causes of unsustainable use and, wherever possible reversing these trends, **will result in better outcomes for wild species and the people who depend on them**.
- **Bringing scientists and indigenous peoples together** to learn from each other will strengthen the sustainable use of wild species.
  - This is especially important because **most national frameworks and international agreements**

Note:



largely continue to emphasize ecological and some social considerations, including economic and governance issues – while cultural contexts receive little attention.

- **In fishing, fixing current inefficiencies; reducing illegal, unreported and unregulated fishing;** suppressing harmful financial subsidies; supporting small-scale fisheries; adapting to changes in oceanic productivity due to climate change; and proactively creating effective transboundary institutions will help sustainable Use.
  - Countries with robust fisheries management had seen stocks increasing in abundance. The Atlantic bluefin tuna population, for instance, has been rebuilt and is now fished within sustainable levels.

In logging this would entail **management and certification of forests for multiple uses;** technological innovations to reduce waste in manufacturing of wood products; and economic and political initiatives that recognize the rights of indigenous peoples and local communities, including land tenure.

## Dragon Fruit

### Why in News?

Recently, the Centre has decided to promote the growth of dragon fruit, which is recognized as a “**super fruit**” for its health advantages.

- Further, the Centre believes that due to the fruit’s nutritional benefits and global demand, farming in India may be extended.

### What is Dragon fruit?

#### ➤ About:

- **Dragon fruit** grows on the *Hylocereus* cactus, also known as the Honolulu queen.
- The plant is **native to southern Mexico and Central America**. Today, it is grown all over the world.
  - At the moment, **Mizoram tops among the States** that cultivate this fruit.
- It goes by many names, including **pitaya, pitahaya, and strawberry pear**.
- The two most common types have **bright red skin with green scales that resemble a dragon**.



- The most widely available variety has **white pulp with black seeds**, though a less common type with red pulp and black seeds exists as well.
- The fruit is **considered good for diabetic patients**, low in calories and high in nutrients like iron, calcium, potassium and zinc.
- **Largest Producer:**
  - The **world’s largest producer and exporter** of dragon fruit is Vietnam, where the plant was brought by the French in the 19<sup>th</sup> century.
    - The Vietnamese call it **thanh long**, which translates to “dragon’s eyes”, believed to be the origin of its common English name.
    - Apart from Vietnam, this exotic fruit is also grown in the USA, Malaysia, Thailand, Taiwan, China, Australia, Israel, and Sri Lanka.
- **Features:**
  - Its **flowers are hermaphrodites** (male and female organs in the same flower) in nature and open at night.
  - The plant sustains yield for more than 20 years, is **high in nutraceutical properties** (having medicinal effects) and good for **value-added processing industries**.
  - It is a **rich source of vitamins and minerals**.
- **Climate Conditions:**
  - As per the **Indian Council of Agriculture Research**, **the fruit plant doesn’t need much water and can be cultivated on dry land**.
  - The **cost of cultivation is initially high**, but the **plant doesn’t need productive land**; it gives **maximum production from the non-productive, less fertile areas**.

### What are the Related Steps

#### taken by the State Governments?

- The Gujarat Government recently **renamed dragon fruit as kalam (lotus)** and announced an incentive for farmers who cultivate it.
- The **Haryana Government also provides a grant for farmers** who are ready to plant this exotic fruit variety.
- The Government of Maharashtra has taken the initiative to promote dragon fruit cultivation in different areas of the state by providing good quality planting material and subsidies for its cultivation through the **Mission on Integrated Development of Horticulture (MIDH)**.



Note:



# History

## Highlights

- Dr. Syama Prasad Mukherjee
- Alluri Sitarama Raju

### Dr. Syama Prasad Mukherjee

#### Why in News?

The Union Home Minister paid tribute to Dr. Shyama Prasad Mukherjee on his birth anniversary.

#### Who was Dr. Shyama Prasad Mukherjee?

- Shyama Prasad Mukherjee was born in a Bengali Brahmin family on the 6<sup>th</sup> July, 1901, in Calcutta.
- He was an Indian politician, barrister, and academician who served as the **Minister for Industry and Supply** in Prime Minister Jawaharlal Nehru's cabinet.
- At the age of 33, Shyama Prasad Mukherjee became the **youngest vice-chancellor of Calcutta University in 1934**.
- During His term as Vice-Chancellor, **Rabindranath Tagore delivered the university convocation address in Bengali for the first time**, and the Indian vernacular was introduced as a subject for the highest examination.
- He **demanding the partition of Bengal in 1946** to prevent the inclusion of its Hindu-majority areas in a Muslim-dominated East Pakistan.
- He also **opposed a failed bid for a united but independent Bengal made in 1947** by Sarat Bose, the brother of Subhas Chandra Bose, and Huseyn Shaheed Suhrawardy, a Bengali Muslim politician.
- He **founded the Bharatiya Jana Sangh (BJS)**, the predecessor of the modern-day Bharatiya Janata Party (BJP).
- In 1953, to **protest against the special status given to Kashmir** he tried to enter Kashmir without seeking permission and was arrested. He died in mysterious circumstances during detention.



### Alluri Sitarama Raju

#### Why in News?

Prime Minister has unveiled a bronze statue of **Alluri Sitharama Raju** in Andhra Pradesh to celebrate 125<sup>th</sup> birth anniversary on 4<sup>th</sup> July 2022.

- As part of **Azadi Ka Amrit Mahotsav**, Government is giving due recognition to the **contribution of freedom fighters and making people across the country aware of them**.

#### Who Was Alluri Sitarama Raju?

- **About:**
  - He was an Indian revolutionary involved in the Indian independence movement.
  - He was born in **present-day Andhra Pradesh in 1897 or 1898**.
  - He became a sanyasi at the age of 18, and gained a **mystical aura among the hill and tribal peoples with his austerity, knowledge of astrology and medicine, and his ability to tame wild animals**.
- **Freedom Movement:**
  - At a very young age, Raju channelled the **discontent of the hill people in Ganjam, Visakhapatnam, and Godavari into a highly effective guerrilla resistance against the British**.
    - **Guerrilla warfare** is a form of irregular warfare in which small groups of combatants use military tactics including **ambushes, sabotage, raids, petty warfare, hit-and-run tactics, and mobility, to fight a larger and less-mobile traditional military**.



Note:



- Colonial rule **threatened the tribals' traditional podu (shifting) cultivation**, as the government sought to secure forest lands.
  - He became involved in **anti-British activities in response to the 1882 Madras Forest Act**, which effectively restricted the free movement of Adivasis (tribal communities) in their forest habitats and prevented them from practicing a traditional form of agriculture known as podu (shifting cultivation).
  - Rising discontent towards the British led to the **Rampa Rebellion/Manyam Rebellion of 1922**, in which he played a major part as a leader.
- The Rampa Rebellion coincided with **Mahatma Gandhi's Non-Cooperation Movement**. He persuaded people to wear **khadi** and give up drinking.
  - But at the same time, he asserted that India could be liberated only by the use of force, not non-violence.
- He was nicknamed **"Manyam Veerudu" (Hero of the Jungle)** by local villagers for his heroic exploits.
  - In 1924, Raju was taken into police custody, **tied to a tree, and shot by a public execution**, effectively ending the armed rebellion.



Note:



# Geography

## Highlights

- *New Insights in Geology*

- *Derecho*

## New Insights in Geology

### Why in News?

A recent study by a team of scientists at Goa-based **National Centre for Polar and Ocean Research (NCPOR)** has brought new insights into the critical processes involved in the **movement of the earth's tectonic plates**.

### What is NCPOR?

- NCPOR was established as an **autonomous Research and Development Institution** of the **Ministry of Earth Sciences** (formerly Department of Ocean Development) on the 25<sup>th</sup> May 1998.
- It is designated as the **nodal organization** for the co-ordination and implementation of the **Indian Antarctic Programme**, including the maintenance of India's permanent station in Antarctica.
- Year-round maintenance of the two Indian stations (**Maitri & Bharati**) in Antarctica is the primary responsibility of the Centre.
  - Maitri (1989) and Bharati (2011) were established, for carrying out research by the Indian scientists in all disciplines of polar research.

### What do we need to know about the Study by NCPOR?

- **Background:**
  - The buoyant rising of **hot and low-density magma or plumes** from the Earth's interior towards the surface **leads to extensive volcanism** and the **creation of seamounts and volcanic chains** above the ocean floor.
    - However, many times, the magma's buoyant force is **not sufficient to pierce through the lithosphere**.
      - In such cases, plumes tend to dump the material at **sub-lithospheric depths**. When the

tectonic plates that lie over the lithosphere move, **they tend to drag the ponded materials along with them**.

- A fundamental question that remains outstanding in understanding earth's processes is **how far a tectonic plate can drag the plume material** at its base after its initial impact with the plume.
- **About Study:**
  - Scientists studied samples of **igneous rocks collected from near the Ninety East Ridge** in the **Indian Ocean** during an expedition under the **International Ocean Discovery Program (IODP)**.
    - The Ninety East Ridge is an **aseismic ridge located almost parallel** to 90 degrees east longitude in the Indian Ocean. It is approximately 5,000 km in length and has an average width of 200 km.
    - Igneous rock, or magmatic rock, is one of the three main rock types, the others being sedimentary and metamorphic.
      - It is formed through the cooling and solidification of magma or lava.
  - Investigation revealed that some **basaltic samples were highly alkaline** and had very **similar composition to those released by the Kerguelen hotspot** (volcanic hotspot at the Kerguelen Plateau in the Southern Indian Ocean).
    - In addition, **the minimum age of alkaline samples was about 58 million years**, much younger than the adjacent oceanic crust surrounding Ninety East Ridge (around 82-78 million years old)
  - This study proposes that the Indian Tectonic Plate, which was **contemporaneously moving northward at a very high speed**, had dragged a considerable amount of Kerguelen plume material **for more than 2,000 km underneath the Indian lithosphere**.
  - **Subsequent reactivation of deep fractures** may have triggered decompression melting of the underlying plume material and emplaced as **magmatic sills**

Note:



and lava flows near the Nighty East Region around 58 million years ago.

### What do we know about Earth's Crust?

#### ➤ Crust:

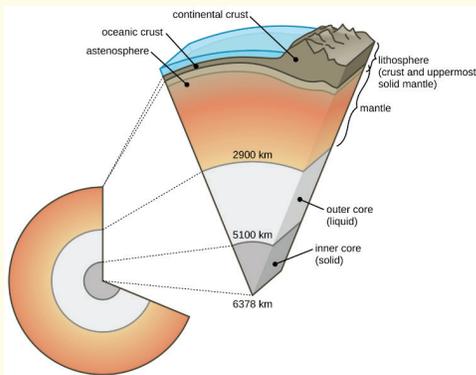
- The **outer superficial layer of the earth is called the "crust"**. In continental regions, the crust can be **divided into two layers**.
  - The **upper layer** which is less dense and granitic in character, is known as **"sial"**, while the **lower layer** which is basaltic in character is known as **"sima"**.
- It extends down to **30 or 40 km beneath continents and to about 10 km beneath ocean basins**.

#### ➤ Mantle:

- The **mantle is located beneath the earth's crust** and has a thickness of about 2900 km.
- It has been divided into two layers: **(i) upper mantle, and (ii) lower mantle**.
- The boundary between these is at about 700 km depth.
- The upper mantle contains a most important zone called the **"asthenosphere"**. It is located at depths between 50 to 100 km.
- This zone **provides lava for volcanic eruptions**.

#### ➤ Core:

- The **core** (inner core and the outer core) accounts for just about **16% of the earth's volume but 33% of earth's mass**.
- Like Mantle, core can also be distinguished into two layers namely **outer core and inner core**.
- The outer core is composed of **iron** mixed with **nickel** and trace amounts of lighter elements.
- The outer core is **not under enough pressure to be solid**, so it is **liquid** even though it has a composition similar to the inner core.



## Derecho

### Why in News?

Recently, a few States of US were hit by a storm system called a **Derecho**, turning Sky Green.

- They mostly **occur across central and eastern parts** of the United States. In 2009 **"Super Derecho"** was **one of the "most intense and unusual derechos ever observed"** in the US as it swept from Kansas to Kentucky (US States) with wind speeds reaching up to 170 km/hr.
- In 2010, **Russia witnessed its first documented derecho**. They have also swept through **Germany and Finland, and more recently in Bulgaria and Poland**.



### What is Derecho?

#### ➤ About:

- A Derecho is **"a widespread, long-lived, straight-line windstorm"** that is associated with a **"band of rapidly moving showers or thunderstorms"**.
  - The **name comes from the Spanish word 'la derecha'** which means 'straight'.
- Straight-line storms are those **in which thunderstorm winds have no rotation unlike a tornado**. These storms travel hundreds of miles and cover a vast area.
- It is a **warm-weather phenomenon** that generally occurs in June and July.
- They are a **rare occurrence as compared to other storm systems like tornadoes or hurricanes**.

#### ➤ Types:

- **Progressive:**
  - A progressive derecho is associated with a **short line of thunderstorms that may travel for hundreds of miles** along a relatively narrow path.

Note:



- It is a summer phenomenon.
- **Serial:**
  - A serial derecho, on the other hand, **has an extensive squall line – wide and long – sweeping across a large area.**
  - It usually occurs during spring or fall.
- **Hybrid:**
  - Hybrid ones have the **features of both progressive and serial derechos.**

### ***What Makes Sky Green Amid Derecho?***

- Severe thunderstorms result in a 'green sky' **due to light interacting with the huge amount of water they hold.**
- The **big raindrops and hail scatter away all but the blue wavelengths** due to which primarily blue light penetrates below the storm cloud.
- This blue then combines with the red-yellow of the afternoon or the evening sun to produce green.



Note:



# Social Issues

## Highlights

- Pasmanda Community
- NFSA Ranking 2022
- Reforms in Education Sector
- Self Help Groups
- Global Gender Gap Index 2022
- Beti Bachao Beti Padhao Scheme
- Mission Shakti
- World Population Prospects 2022

## Pasmanda Community

### Why in News?

Recently, Pasmanda Community has gained attention of many political parties for inclusive growth and eradication of intra caste discrimination.

### Who are Pasmanda Muslims?

- **'Pasmanda'**, a Persian term meaning **"those who have fallen behind"** refers to Muslims belonging to the **shudra (backward) and ati-shudra (Dalit) castes**.
  - It was adopted as an oppositional identity to that of the dominant ashraf Muslims (forward castes) in 1998 by the Pasmanda Muslim Mahaz, a group which mainly worked in Bihar.
- Pasmandas encompass those who are socially, educationally and economically backward and make up the majority of the Muslim community in the country.
- The term **"Pasmanda"** is majorly used by **Muslim associations** in Uttar Pradesh, Bihar, and other parts of India to define themselves as Muslim communities historically and socially oppressed by caste.
- Backward, Dalit and tribal Muslim communities are now organising under the identity of Pasmanda. These communities includes:
  - Kunjre (Raeen), Julahe (Ansari), Dhunia (Mansuri), Kasai (Qureishi), Fakir (Alvi), Hajjam (Salmani), Mehtar (Halalkhor), Gwala (Ghosi), Dhobi (Hawari), Lohar-Badhai (Saifi), Manihar (Siddiqui), Darzi (Idrisi), Vangujjar, etc.

### What are the Provisions Available for Minorities?

- **Constitutional:**
  - **Article 29:**

- It provides that any section of the citizens residing in any part of India having a distinct language, script or culture of its own, shall have the right to conserve the same.
- It grants protection to both religious minorities as well as linguistic minorities.
- However, the SC held that the scope of this article is not necessarily restricted to minorities only, as use of the word 'section of citizens' in the Article includes minorities as well as the majority.

#### ○ Article 30:

- All minorities shall have the right to establish and administer educational institutions of their choice.
- The protection under Article 30 is confined only to minorities (religious or linguistic) and does not extend to any section of citizens (as under Article 29).

#### ○ Article 350-B:

- **The 7<sup>th</sup> Constitutional (Amendment) Act 1956** inserted this article which provides for a Special Officer for Linguistic Minorities appointed by the President of India.
- It would be the duty of the Special Officer to investigate all matters relating to the safeguards provided for linguistic minorities under the Constitution.

#### ➤ Legal:

#### ○ National Commission for Minority Education Institution (NCMEI) Act, 2004:

- It gives minority status to the educational institutions on the basis of six religious communities notified by the government under the NCMEI Act, 2004 – Muslims, Christians, Sikhs, Buddhists, Zoroastrians (Parsis) and Jains.

Note:



### Who are the minorities notified by the Government of India?

- Currently, only those communities notified under section 2(c) of the **NCM Act, 1992**, by the central government are regarded as minority.
- In 1992, with the enactment of the NCM Act, 1992, the MC became a statutory body and was renamed as the NCM.
- In 1993, the first Statutory National Commission was set up and five religious communities viz. The Muslims, Christians, Sikhs, Buddhists and Zoroastrians (Parsis) were notified as minority communities.
- In 2014, Jains were also notified as a minority community.

## NFSA Ranking 2022

### Why in News?

Recently, the **first edition** of the **State Ranking Index** for **National Food Security Act (NFSA), 2013** was released.

### What is the Index all About?

- **About:**
  - The index **seeks to document the status and progress of the implementation of NFSA** across the country and various reform initiatives after consultation with the states.
  - It **highlights the reforms undertaken by the States and Union Territories** and creates a cross-learning environment and scale-up reform measures by all the States and Union Territories.
  - The current index is **largely focused on NFSA distribution** and will include future buyouts, **PMKAY (Pradhan Mantri Garib Kalyan Anna Yojana)** distributions.
- **Basis of the Assessment:**
  - The index for ranking of States and UTs is **built on three key pillars**, which cover end-to-end implementation of NFSA through **Targeted Public Distribution System (TPDS)**. These pillars are-
    - NFSA- coverage, targeting and provisions of the Act
    - Delivery platforms and
    - Nutrition initiatives

### In what ways did the states Perform?

- **General Category States:**
  - **Odisha is ranked first** followed by Uttar Pradesh and Andhra Pradesh in second and third position.
- **Special Category States:**
  - **Tripura ranks top among the special category states** (the North-eastern States, Himalayan States, and Island States).
  - Himachal Pradesh and Sikkim are in second and third place, respectively.
- **Worst Performers:**
  - Punjab, Haryana and Delhi are among the states at the bottom five.

### IMPLEMENTING FOOD SECURITY

How the 20 'general category' states ranked in terms of NFSA implementation

#### TOP THREE

Rank	State	Index score
1	Odisha	0.836
2	Uttar Pradesh	0.797
3	Andhra Pradesh	0.794

#### BOTTOM THREE

18	Delhi	0.658
19	Chhattisgarh	0.654
20	Goa	0.631

### What is the significance of the Index?

- The findings from the exercise **revealed that most states and union territories have fared well in digitization**, Aadhaar seeding, and ePoS installation, which reiterates the strength and scale of the reforms.
  - However, **states and union territories can improve their performance in a few areas**. Exercises, such as conducting and documenting social audits thoroughly and operationalizing functions of state food commissions across states and union territories, will further bolster the true spirit of the Act.
- It will lead to **healthy competition among States** to further their enhance performance.

### What are the Issues Related to the Index?

- It excludes projects and schemes carried out by other ministries and departments within the NFSA.

Note:



- The Index merely indicates the efficiency of TPDS operations; it does not reflect the level of **hunger, malnutrition**, or both in a certain state or union area.

### Why Odisha Ranking Matter?

- Odisha has followed the adoption of the NFSA in the state in 2015 with **robust end-to-end computerization of Targeted Public Distribution System (TPDS) operations**.
- A **3.25 crore digitized beneficiaries database has been hosted in the public domain** and is dynamically updated at 378 **ration card management system (RCMS) centers**, one in each of **314 blocks and 64 urban local bodies (ULBs)**.
- Furthermore, the **Food Supplies and Consumer Welfare Department's** 152 food storage facilities have been **totally automated, with real-time electronic recording of 1.87 lakh MT foodgrains sent to 12,133 fair pricing stores across the State**.
- From July 2021, the **One Nation, One Ration Card (ONORC)** programme was introduced across the state.
  - After its implementation, PDS **beneficiaries can now choose any fair pricing retailer of their choice and convenience to get their monthly benefits**.
  - Every month, approximately **1.10 lakh families receive rations through the intra-state facility** and 533 families through the inter-state programme.

### What is NFSA?

- **Notified on:** 10<sup>th</sup> September, 2013.
- **Objective:** To provide **for food and nutritional security** in the human life cycle approach, by ensuring access to adequate quantities of quality food at affordable prices to people to live a life with dignity.
- **Coverage:** 75% of the rural population and upto 50% of the urban population for receiving subsidized foodgrains under **Targeted Public Distribution System (TPDS)**.
  - Overall, NFSA caters to 67% of the total population.
- **Eligibility:**
  - **Priority Households to be covered under TPDS**, according to guidelines by the State government.
  - Households covered under existing **Antyodaya Anna Yojana**.
- **Provisions:**
  - **5 Kgs of foodgrains per person** per month at Rs. 3/2/1 per Kg for rice/wheat/coarse grains.

- The existing AAY household will **continue to receive 35 Kgs of foodgrains per household per month**.
- **Meal and maternity benefit** of not less than Rs. 6,000 to pregnant women and lactating mothers during pregnancy and six months after the child birth.
- **Meals for children upto 14 years of age**.
- **Food security allowance** to beneficiaries in case of non-supply of entitled foodgrains or meals.
- **Setting up of grievance redressal mechanisms** at the district and state level.

## Reforms in Education Sector

### Why in News?

**The Parliamentary Standing Committee** carried out a review of education standards, accreditation process, research, examination reforms and academic environment in India's higher education institutes.

### What are the Findings of the Report?

- The higher education department of the Union ministry of Education informed the committee that only 30% of the universities and 20% of the colleges are in the accreditation system.
  - Less than 9,000 colleges out of a total of 50,000 colleges are accredited.
- Many deemed universities, in order to make quick money, have started Open Distance Learning courses undermining qualitative research work.
- Several state universities regularly fail to carry out assessments smoothly, often reporting instances like question paper leaks and rampant cases of copying.

### What Do We Know

#### About the Accreditation System?

- **About:**
  - Accreditation is a procedure wherein standardisation happens as to what minimum benchmarks are to be created.
  - It is a formal, independent verification that a program or institution meets established quality standards in terms of testing, inspection, or certification.
- **Significance:**
  - It is an important tool to improve the quality

Note:



of product and services in the field of health, education, food as well as other areas.

- It also promotes the adoption of quality standards relating to Quality Management Systems, Food Safety Management Systems and Product Certification.
- It helps in realizing the objective of improving quality competitiveness of Indian products and services.
- **Grading Process:**
  - Presently, the **National Assessment and Accreditation Council (NAAC)**, an autonomous body under the **University Grants Commission (UGC)**, evaluates higher education institutions on a range of parameters, including teaching-learning, research and infrastructure, and gives institutions grades ranging from A++ to C.
    - If an institution is given a D, it means it is not accredited.
  - The grading remains valid for five years.
- **The International Accreditation Forum:**
  - **IAF** is the world association of Conformity Assessment Accreditation bodies and other bodies interested in conformity assessment in the fields of management systems, products, services, personnel and other similar programs of conformity assessment.
    - **Conformity Assessment Bodies:** These are bodies that can certify product, process or services, management systems or persons.
      - E.g. International Organization for Standardization (ISO).
  - India is also a member.

### **What are the Key Recommendations of the Committee?**

- **Analysis of Issues:**
  - **Issues faced by NAAC and the National Board of Accreditation (NBA)**, which recognises courses offered by higher education institutions, should be analysed and worked on.
- **Frequent Accreditations:**
  - The norms for **frequency and periodicity of the accreditations** be defined so that institutions do not develop a tendency to carry the score for years without a review, which leads to complacency and undermines quality mechanisms.

- **Exam Management:**
  - The committee recommends that the parameter of the institution's exam management competency be also considered as a mandatory norm towards consideration of accreditation.
  - It also suggested strict actions, including derecognition, for higher institutions involved in malpractices in collaboration with coaching centres.
  - All universities and colleges must be scored on how foolproof their examinations are.
- **Deemed Universities:**
  - The So-called "deemed universities" should also **be allowed to use the term 'university'** since there is no such concept in other countries.
- **Funding of Institutions:**
  - To encourage more funding, it suggested "**donations by individuals, alumni and institutions**" should be 100% tax deductible.
- **Digital Courses Norms:**
  - It also noted that **there was an urgent need to revisit and revamp the norms** for starting online courses.
  - With regard to Open Distance Learning courses, the **committee strongly recommended adequate measures** to curb such tendencies after carefully examining the options.

### **What Initiatives have India Taken for the Education Sector?**

- **National Education Policy:**
  - **NEP 2020** aims at making "India a global knowledge superpower".
  - The Cabinet has also approved the renaming of the Ministry of Human Resource Development to the Ministry of Education.
  - The NEP cleared by the Cabinet is only the third major revamp of the framework of education in India since independence.
    - The two earlier education policies were brought in 1968 and 1986.
- **Margadarshan:**
  - Institutions having good accreditation records or the top-performing institutions are selected to mentor relatively newer 10 to 12 potential institutions.
  - Best teaching and learning practices followed in the mentor institute will be simulated in the identified mentee institutions.

Note:



- The mentee institutions will also be provided with funding up to Rs. 50 lakhs (per institution) over a period of three years (in installments), for carrying out various activities like training, workshops, conferences, etc.
- **Academic Bank of Credit:**
  - It is envisaged as a digital bank that holds the credit earned by a student in any course.
  - It is a major instrument for facilitating multidisciplinary and holistic education.
  - It will provide multiple entry and exit options for students in Higher education.
  - It will make the youth future-oriented and open the way for an **Artificial Intelligence (AI)** - driven economy.

## Self Help Groups

### Why in News?

Government is aiming at raising the annual income of each woman in **Self-Help Groups (SHGs)** to Rs 1 lakh by 2024.

### What are SHGs?

- **About:**
  - Self-Help Groups (SHGs) are **informal associations of people who choose to come together to find ways** to improve their living conditions.
  - It can be defined as **self-governed, peer-controlled information group of people with similar socio-economic background** and having a desire to collectively perform common purpose.
  - SHG rely on the **notion of "Self Help" to encourage self-employment** and poverty alleviation.
- **Objectives:**
  - To build the **functional capacity of the poor and the marginalized** in the field of employment and income generating activities.
  - To **resolve conflicts through collective leadership** and mutual discussion.
  - To provide **collateral free loan with terms decided by the group** at the market driven rates.
  - To work as a **collective guarantee system for members** who propose to borrow from organised sources.

- The poor collect their savings and save it in banks. In return they receive easy access to loans with a small rate of interest to start their micro unit enterprise.

### What is the Need for SHGs?

- One of the reasons for rural **poverty** in our country is low access to credit and financial services.
- A Committee constituted under the **chairmanship of Dr. C. Rangarajan** to prepare a comprehensive report on 'Financial Inclusion in the Country' identified four major reasons for lack of financial inclusion:
  - Inability to provide collateral security,
  - Poor credit absorption capacity,
  - Inadequate reach of the institutions, and
  - Weak community network.
- The existence of sound community networks in villages is increasingly being recognised as **one of the most important elements of credit linkage** in the rural areas.
- They help in **accessing credit to the poor and thus, play a critical role in poverty alleviation.**
- They also help to **build social capital among the poor, especially women.** This empowers women and gives them greater voice in the society.
- Financial independence through self-employment has **many externalities such as improved literacy levels, better health care** and even better family planning.

### What is the Significance of SHGs?

- **Social integrity:**
  - SHGs encourages collective efforts for combating practices like dowry, alcoholism etc.
- **Gender Equity:**
  - SHGs empowers **women and inculcates leadership skill** among them. Empowered women participate more actively in gram sabha and elections.
  - There is evidence in this country as well as elsewhere that formation of Self-Help Groups has a multiplier effect in improving women's status in society as well as in the family leading to improvement in their socio-economic condition and also enhances their self-esteem.
- **Voice to Marginalized Section:**
  - Most of the beneficiaries of government schemes have been from weaker and marginalized

Note:



communities and hence their participation through SHGs ensures social justice.

➤ **Financial Inclusion:**

- Priority Sector Lending norms and assurance of returns incentivize banks to lend to SHGs. The **SHG-Bank linkage programme pioneered by NABARD has made access to credit easier** and reduced the dependence on traditional money lenders and other non-institutional sources.

➤ **Alternate source of Employment:**

- It eases **dependency on agriculture by providing support in setting up micro-enterprises** e.g., personalised business ventures like tailoring, grocery, and tool repair shops.

### What are the Issues?

➤ **Lacks up-gradation of skills:**

- Most SHGs are **not making use of new technological innovations** and skills. This is because there is limited awareness with regards to new technologies and they **do not have the necessary skills to make use of the same**. Furthermore, there is a lack of effective mechanisms.

➤ **Weak Financial Management:**

- It is also found that in certain units the return from the business is not properly invested further in the units, **and the funds diverted for other personal and domestic purposes** like marriage, construction of house etc.

➤ **Inadequate Training Facilities:**

- The training facilities given to the members of SHGs in the specific areas of product selection, quality of products, production techniques, managerial ability, packing, other technical knowledge **are not adequate to compete with that of strong units**.

➤ **Lack of Stability and Unity Especially among Women SHGs:**

- In the case of SHGs dominated by women, it is found that **there is no stability of the units as many married women** are not in a position to associate with the group due to the shift of their place of residence.
- Moreover, there is no unity **among women members** owing to personal reasons.

➤ **Inadequate Financial Assistance:**

- It is found that in most of the SHGs, **the financial assistance provided to them by the agencies concerned is not adequate** to meet their actual requirements. The financial authorities are not giving adequate subsidies to meet even the labour cost requirements.

### What is the Role of SHGs in Women Empowerment?

- Self-help group (SHG) movement is one of the most powerful incubators of female resilience and entrepreneurship in rural areas. It is a **powerful channel for altering the social construct of gender in villages**.
- Women in rural areas are **now able to create independent sources of income**. While there were many young semi-literate women who have home-grown skills, the absence of capital and regressive social norms prevents them from taking a full plunge in any decision-making role and setting up their own independent business.
- Women are working in **multiple sectors as Business Correspondents (BC), Bank Sakhis, Kisan Sakhis and Pashu Sakhis**.

## Global Gender Gap Index 2022

### Why in News?

Recently, the **World Economic Forum (WEF)** ranked **India at 135 out of 146 countries** in its **Global Gender Gap (GGG) Index for 2022**.

- India's **overall score has improved from 0.625 (in 2021) to 0.629**, which is its **seventh-highest score in the last 16 years**.
  - **In 2021**, India was ranked 140 out of 156 countries.
- The **gender gap** is the difference between women and men as reflected in social, political, intellectual, cultural, or economic attainments or attitudes.

#### INDIA'S REPORT CARD

Index/sub-index	2022 (146 countries)		2021 (156 countries)	
	Rank	Score	Rank	Score
Global Gender Gap Index	135	0.629	140	0.625
Political empowerment	48	0.267	51	0.276
Economic participation & opportunity	143	0.350	151	0.326
Educational attainment	107	0.961	114	0.962
Health and survival	146	0.937	155	0.937

Source: World Economic Forum

Note:



### What is the Global Gender Gap Index?

#### ➤ About:

- It **benchmarks countries** on their progress towards **gender parity in four Key dimensions with Sub Metrics**.
  - Economic Participation and Opportunity
  - Educational Attainment
  - Health and Survival
  - Political Empowerment
- 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**.
- It is the **longest-standing index**, which tracks progress towards closing these gaps over time **since its inception in 2006**.

#### ➤ Objectives:

- To serve as a compass to track progress on relative gaps between women and men on health, education, economy and politics.
- Through this annual yardstick, the stakeholders within each country are able to set priorities relevant in each specific economic, political and cultural context.

### What has India Fared on Four Key Dimensions?

#### ➤ Political Empowerment (Percentage of Women in Parliament and in Ministerial Positions):

- India ranks the highest (48<sup>th</sup> out of 146).
- Notwithstanding its rank, its **score is quite low at 0.267**.
  - Some of the best ranking countries in this category score much better.
  - For instance, **Iceland is ranked 1 with a score of 0.874 and Bangladesh is ranked 9 with a score of 0.546**.

#### ➤ Economic Participation and Opportunity (Percentage of women in labour force, Wage Equality for similar work, Earned income):

- 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**.
  - In 2021, India was pegged at **151 out of the 156 countries**.
- India's score is **much lower than the global average**,

and only Iran, Pakistan and Afghanistan are behind India on this metric.

#### ➤ Educational Attainment (Literacy Rate and the Enrolment rates in Primary, Secondary and Tertiary education):

- India **ranks 107<sup>th</sup> out of 146**, and its score has **marginally worsened since last year**.
  - In 2021, India was **ranked 114 out of 156**.

#### ➤ Health and Survival (Sex ratio at birth and Healthy Life Expectancy):

#### What are the Indian Initiatives to reduce Gender Gap in Social, Economic and Political Life?

##### ➤ Economic Participation and Health and Survival:

- **Beti Bachao Beti Padhao**: It ensures the protection, survival and education of the girl child.
  - **Mahila Shakti Kendra**: Aims to empower rural women with opportunities for skill development and employment.
  - **Mahila Police Volunteers**: It envisages engagement of Mahila Police Volunteers in States/UTs who act as a link between police and community and facilitates women in distress.
  - **Rashtriya Mahila Kosh**: It is an apex micro-finance organization that provides micro-credit at concessional terms to poor women for various livelihood and income generating activities.
  - **Sukanya Samridhi Yojna**: Under this scheme girls have been economically empowered by opening their bank accounts.
  - **Female Entrepreneurship**: To promote female entrepreneurship, the Government has initiated Programmes like Stand-Up India and Mahila e-Haat (online marketing platform to support women entrepreneurs/SHGs/NGOs), Entrepreneurship and Skill Development Programme (ESSDP).
  - **Kasturba Gandhi Balika Vidyalaya**: They have been opened in Educationally Backward Blocks (EBBs).
- ##### ➤ Political Reservation: Government has reserved 33% of the seats in Panchayati Raj Institutions for women.
- **Capacity Building of Elected Women Representatives**: It is conducted with a view to empowering women to participate effectively in the governance processes.

Note:



- India is ranked the last (146) among all the countries.
- Its score hasn't changed from 2021 when it was ranked 155<sup>th</sup> out of 156 countries.

### What are Global Findings?

- **Ranking:**
  - Iceland has retained its position as the world's most gender-equal country, among 146 nations on the index.
  - Finland, Norway, New Zealand and Sweden are the top five countries on the list respectively.
  - Afghanistan is the worst-performing country in the report.
- **Scenario:**
  - Overall GGG is closed by 68.1%. At the current rate of progress, it will take 132 years to reach full parity.
  - Although no country achieved full gender parity, the top 3 economies closed at least 80% of their gender gaps,
    - Iceland (90.8%)
    - Finland (86%),
    - Norway (84.5%)
  - South Asia will take the longest to reach gender parity, which is estimated to be likely in 197 years.
- **Impact of Covid-19:**
  - The progress toward gender parity has been halted and even reversed due to the Covid-19 pandemic.
  - Women have borne the brunt of the recession, widely dubbed the 'shecession', largely because they work in sectors that were most impacted, such as retail and hospitality.
  - The pandemic recession has hit women harder than the 2009 financial crisis impacted male workers.

### What is World Economic Forum?

- **About:**
  - The World Economic Forum is the International Organization for Public-Private Cooperation.
  - It was established in 1971 as a not-for-profit foundation and is headquartered in Geneva, Switzerland.
- **Major Reports:**
  - Energy Transition Index
  - Global Competitiveness Report
  - Global IT Report

- WEF along with INSEAD, and Cornell University publishes this report.
- Global Gender Gap Report
- Global Risk Report
- Global Travel and Tourism Report

## Beti Bachao Beti Padhao Scheme

### Why in News?

According to recent guidelines issued by the Ministry of Women and Child Development, **Beti Bachao Beti Padhao (BBBP) Scheme** will be extended to all Districts.

### What are the Guidelines?

- The ministry has now targeted improvement in the **Sex Ratio at Birth (SRB) by 2 points every year**, improvement in the percentage of **institutional deliveries** at 95% or above.
- **Increasing girls' participation in sports** by identifying talent and linking them with appropriate authorities under '**Khelo India**'.
- Promoting self-defence camps, construction of girls' toilets, making available sanitary napkin vending machines and sanitary pads, especially in educational institutions, awareness about **PC-PNDT (Pre-Conception & Pre-Natal Diagnostic Techniques) Act 1994, etc.**
  - **PC-PNDT act** aims to **ban the use of sex selection techniques** before or after conception and **prevent the misuse of a prenatal diagnostic technique** for sex-selective abortion.
- Zero-budget advertising and encouraging greater spend on activities that have on-ground impact.
  - In 2021 parliamentary committee on empowerment of women in **its report** stated that nearly 80 % funds for the BBBP scheme **has been used for advertising, and not on sectoral interventions such as women's health and education.**
- Strengthen **One-Stop Centres (OSCs)**, set up to help women facing violence, including domestic violence and trafficking, by adding 300 OSCs in districts which either have a high rate of crimes against women or are geographically large, preferably in **aspirational districts.**

Note:



## IN THE WORKS

■ Additional 300 One-Stop Centres to be set up; existing centres to be upgraded

■ Govt to introduce free day-care crèche facilities through Palna

■ Half-Way Homes to be set up under Anti-

Trafficking Units, where a group of victims, ready for reintegration, can live and work out of

■ Hubs for empowerment of women to be set up at Central, states and districts levels to merge and monitor schemes

### What is BBBP?

#### ➤ About:

- It was launched in January 2015 with the aim to address sex selective abortion and the declining child sex ratio which was at 918 girls for every 1,000 boys in 2011.
- This is a joint initiative of the Ministry of Women and Child Development, Ministry of Health and Family Welfare and Ministry of Human Resource Development.
- The programme is being implemented across 405 districts in the country.

#### ➤ Main Objectives:

- Prevention of gender-biased sex-selective elimination.
- Ensuring survival & protection of the girl child.
- Ensuring education and participation of the girl child.
- Protecting rights of Girl children.

#### ➤ Performance Analysis:

- **Sex Ratio at Birth:**
  - **Sex Ratio at Birth (SRB)** has improved by 16 points from 918 (2014-15) to 934 (2019-20), as per the **Health Management Information System (HMIS) data**.
  - **Notable Examples (Districts):**
    - Mau (Uttar Pradesh) from 694 (2014-15) to 951 (2019-20),
    - Karnal (Haryana) from 758 (2014-15) to 898 (2019-20),
    - Mahendergarh (Haryana) from 791 (2014-15) to 919 (2019-20), etc.
- **Health:**
  - **ANC Registration:** Percentage of 1<sup>st</sup> Trimester ANC (AnteNatal Care) Registration has shown

an improving trend from 61% in 2014-15 to 71% in 2019-20.

- **Institutional Deliveries:** Percentage of Institutional Deliveries has shown an improving trend from 87% in 2014-15 to 94% in 2019-20.

#### ○ Education:

- **Gross Enrolment Ratio (GER):** GER of girls in the schools at secondary level has improved from 77.45 (2014-15) to 81.32 (2018-19) as per Unified District Information System for Education (UDISE) provisional data.

- **Toilet for girls:** Percentage of schools with functional separate toilets for girls has shown improvement from 92.1% in 2014-15 to 95.1% in 2018-19.

#### ○ Attitudinal Change:

- The BBBP scheme has been able to bring the focus on important issue of female infanticide, lack of education amongst girls and deprivation of their rights on a life cycle continuum.
- Beti Janmotsav is one of the key programmes celebrated in each district.

### What are the Related Initiatives?

- **Beti Bachao Beti Padhao**
- **Sukanya Samridhi Yojana**
- **CBSE Udaan Scheme**
- **National Scheme of Incentive to Girls for Secondary Education**
- **National Girl Child Day**
- **Scheme for Adolescent Girls**
- **Sukanya Samridhi Yojana**

## Mission Shakti

### Why in News?

Recently, the Ministry of Women and Child Development has issued detailed guidelines for the 'Mission Shakti' scheme.

- The norms of 'Mission Shakti' **will be applicable with effect from 1<sup>st</sup> April 2022**.

### What do we need to know about Mission Shakti?

- **About:**

Note:



- 'Mission Shakti' was launched during the **15<sup>th</sup> Finance Commission** period 2021-22 to 2025-26.
  - **Mission Shakti** is an **integrated women empowerment programme** is launched as an umbrella scheme for the **safety, security and empowerment of women** for implementation.

#### ➤ Components:

- **Sambal:**
  - It is for **Safety and Security of Women**.
  - It consists of schemes of **One Stop Centre (OSC)**, **Women Helpline (WHL)**, **Beti Bachao Beti Padhao (BBBP)**, with a new component of **Nari Adalats** - women's collectives to promote and facilitate alternative dispute resolution and gender justice in society and within families.
- **Samarthya:**
  - It is for **Empowerment of Women**.
  - It consists of erstwhile schemes of **Ujjwala**, **Swadhar Greh** and **Working Women Hostel** have been included with modifications.
    - In addition, the existing schemes of **National Creche Scheme for children of working mothers** and **Pradhan Mantri Matru Vandana Yojana (PMMVY)** under umbrella **Integrated Child Development Services ICDS** have now been included in Samarthya.
    - A new component of **Gap Funding for Economic Empowerment** has also been added in the Samarthya Scheme.

#### **What are the Services & Activities Involved?**

- **Emergency/ Immediate services & short-term care:**
  - National toll-free number and **integrated services** such as **temporary shelter**, **legal aid**, **psycho-social counselling**, **medical assistance**, **police facilitation** and **link them with existing services** etc. through **One Stop Centres**.
- **Institutional Care for long term support:**
  - Taking care of the needs of women **right from the conception stage till the time they need such care and support**.
  - **SakhiNiwas** or **Working Women Hostel** will provide a safe and secure place for the working women.
- **Behaviour Change Communication for dignity and prevention of crime and violence against women:**
  - This would include **large scale awareness pro-**

**grams and community engagement** for gender sensitisation.

- In addition, **engaging with men and boys** would be done to partner for **countering violence against women and Gender stereotypes**.

#### **What are the Objectives of Mission Shakti?**

- Provide **immediate and comprehensive** continuum of care, support and assistance to women **affected by violence and for those in distress**.
- To put in place **quality mechanisms** for rescue, protection and rehabilitation of women in need of assistance and **victims of crime and violence**.
- To improve **accessibility to various government services** available for women at various levels.
- **Making people aware** about **Government schemes and programmes** as well as **legal provisions** to fight social evils like **dowry, domestic violence, Sexual Harassment at Workplace** and to promote **gender equality** etc.
- **Collaboration** with partner Ministries/ Departments/ States/ UTs for convergence of policies, programmes/ schemes and to create an enabling environment for **public private partnership** for safety and empowerment of women across sectors.
- To prevent **gender-biased sex selective elimination**; to ensure survival, protection, education and development of the **girl child**.
- It also seeks to **reduce the care burden on women** and increase **female labour force** participation by promoting skill development, capacity building, financial literacy, access to microcredit etc.

## **World Population Prospects 2022**

### **Why in News?**

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**.

### **What is the World Population Prospects?**

- The Population Division of the UN has been publishing the **WPP in a biennial cycle since 1951**.

Note:



- Each revision of the WPP provides a historical time series of population indicators starting in 1950.
- It does so by taking into account newly released national data to revise estimates of past trends in fertility, mortality or international migration.

World Population	Year
1 billion	1804
2 billion	1927
3 billion	1959
4 billion	1974
5 billion	1987
6 billion	1998
7 billion	2011
8 billion	2022

Source: United Nations Population Fund

### What are the Findings of the Report?

- **Population Grows, but the Pace is Declining:**
  - 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.
  - In 2020, the **global growth rate fell under 1% per year** for the first time since 1950.
- **Rates Vary 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 46 Least Developed Countries (LDCs) are **among the world's fastest-growing.**
    - Many are **projected to double in population between 2022 and 2050**, putting additional pressure on resources and posing challenges to the achievement of the **UN's Sustainable Development Goals (SDGs).**
- **The Population of Elderly is Increasing:**
  - The share of the global population aged 65 years or above is projected to rise **from 10% in 2022 to 16% in 2050.**
- **Demographic Dividend:**
  - 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.
- **International Migration:**

- International migration is having an **important impact on population trends for some countries.**
- For high-income countries between 2000 and 2020, the contribution of international migration to population growth exceeded the balance of births over deaths.
- Over the next few decades, **migration will be the sole driver of population growth in high-income countries.**

### What are the Findings Related to India?

- India's growth rate stood at 2.3 % in 1972, which has dropped down to less than 1% now.
  - In this period, the number of children each Indian woman has during her lifetime has **come down from about 5.4 to less than 2.1 now.**
  - This means that Indian has attained the **Replacement Fertility Rate**, at which a population exactly replaces itself from one generation to the next.
- **Fertility rates have been declining, so have mortality rates** with increased access to healthcare and advances in medicine.
  - Population of **0-14 years and 15-24 years will continue to decline** while those of 25-64 and **65+ will continue to rise for the coming decades.**
- This reduction of premature mortality for successive generations, **reflected in increased levels of life expectancy at birth, has been a driver of population growth in India.**

### What are the Recommendations?

- **Countries with ageing populations should take steps to adapt public programmes to the growing proportion of older persons**, including by improving the sustainability of social security and pension systems and by **establishing universal health care and long-term care systems.**
- To maximize the potential benefits of a favourable age distribution, countries **need to invest in the further development of their human capital by ensuring access to health care and quality education at all ages** and by promoting opportunities for productive employment and decent work.
- For those already in the 25-64 age bracket, there is a need for skilling, which is the **only way to ensure they are more productive and have better incomes.**



Note:



# Art & Culture

## Highlights

- Statue of Peace of Swami Ramanujacharya
- Declaring Mangarh Hillock as a Monument of National Importance
- UNESCO's Convention on Intangible Cultural Heritage
- Conservation of Ancient Buddhist site

## Statue of Peace of Swami Ramanujacharya

### Why in News?

Recently, in Srinagar, Union Home Minister Shri Amit Shah unveiled Swami Ramanujacharya's **Statue of Peace**.

### Who was Ramanujacharya?

- **Ramanujacharya** was Born in 1017 in **Sriperumbudur in Tamil Nadu**.
- Ramanujacharya is revered as a **Vedic philosopher and social reformer**.
- He travelled across India, advocating **equality and social justice**.
- **He Brought the** treasure of Vedic literature **to the doorsteps of the common man**.
- **Advocated the** philosophy of Visistadvaita, qualified monism.
- **Dispelled the Mayavada concept, the world is illusionary**.
- **Became the preceptor of the Bhakti movement and the source for all other Bhakti Schools of thought**.
- **He was an** inspiration for mystic poets like Kabir, Meerabai, Annamacharya, Bhakta Ramdas, Thyagaraja, and many others.
- **Initiated the** concept that Nature and her resources like Water, Air, Soil, Trees, etc., are sacred and should be protected from pollution.



### Why is It called Statue of Peace?

- The installation of this peace statue will bring the  **blessings and message of Ramanujacharya to Kashmiris**

**of all religions and will take Kashmir further on the path of peace and progress.**

- It would further enhance the development of the people of Kashmir without any discrimination.

### What is the Saint

#### Ramanuj's Connection with Kashmir?

- Ramanujacharya **visited Kashmir in the 11<sup>th</sup> Century to get an important manuscript called Bodhayana Vritti, a treatise on the Brahma Sutras**.
  - The Bodhayana Vritti had the reputation of being the most **authoritative explanation of the Brahma Sutras**.
- His disciple **Kuresha accompanied him and committed the entire text to memory** as local scholars did not permit Ramanujacharya to carry the manuscript out of Kashmir.
- After returning to Srirangam, Ramanujacharya dictated the Sri Bhashyam, the commentary on Brahma Sutra and the Acharya's most notable work, to Kuresha, who wrote it down.
- Ramanujacharya again returned to Kashmir after 2 years to dedicate Sri Bhashyam to the region.

## Declaring Mangarh Hillock as a Monument of National Importance

### Why in News?

A report by the **National Monuments Authority (NMA)** called for the Mangarh hilltop in Rajasthan to be **designated as a national monument in honor of 1500 Bhil tribal freedom fighters**.

Note:



**What is National Monuments Authority (NMA)?**

- It was established under the **Ministry of Culture** in accordance with the requirements of the **Ancient Monuments and Archaeological Sites and Remains AMASR (Amendment and Validation) Act, 2010**.
- The NMA has been delegated specific tasks for the **conservation and preservation of monuments and sites, including control of the banned and restricted areas surrounding centrally designated monuments**.
- One of the NMA's roles is to **evaluate granting permits** to applicants for construction-related activities in restricted and regulated areas.

**What are Monuments of National Importance?**

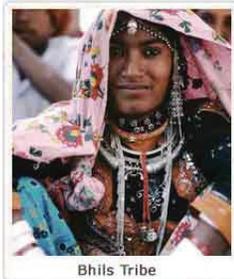
- National ancient Monuments are defined **under the Ancient Monument and Archaeological Sites and Remains Act, 1958**.
- The Act defines Ancient Monument as **any structure or monument or any cave, rock sculpture, an inscription that is of historical, or archaeological interest**.
- The **Central Government is authorised to maintain, protect and promote the monuments**.

**What is the Background of the Mangarh Hillock?**

- The hillock, 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 17<sup>th</sup> November, 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.

**What is Bhil Tribe?**

- **About:**
  - **Bhils** are commonly referred to as **Rajasthan's bowmen**. They are India's most widely dispersed tribal communities.
  - They are **South Asia's largest tribe**.
  - They are broadly classified into **two types**:
    - **Central or pure bhills**



Bhils Tribe

- **Eastern or Rajput Bhils.**

- The central Bhils can be found in the mountain regions of Madhya Pradesh, Maharashtra, Gujarat, and Rajasthan in India, and also can be found in Tripura's northwestern regions.
- They are considered as **Schedule Tribe** in Andhra Pradesh, Chhattisgarh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tripura.
- **Historical Perspective:**
  - Bhils are members of the pre-Aryan race.
  - The term '**Bhil**' is derived from the word **villu or billu, which is known as Bow in the Dravidian language**.
  - The name Bhil is also mentioned in the ancient epics of Mahabharata and Ramayana.

## UNESCO's Convention on Intangible Cultural Heritage

**Why in News?**

India has been elected to the **Intergovernmental Committee of UNESCO's 2003 Convention** for the Safeguarding of the **Intangible Cultural Heritage (ICH)** for the 2022-2026 cycle.

- India has served as a **member of the ICH Committee twice** — from 2006 to 2010 and from 2014 to 2018.
- Earlier, **Durga Puja** in Kolkata was inscribed on the **UNESCO's Representative List of the Intangible Cultural Heritage (ICH) of Humanity**.

**What is Intangible Cultural Heritage?**

- Intangible cultural heritage is the **practices, expressions, knowledge and skills that communities, groups and sometimes individuals recognise as part of their cultural heritage**.
- Also called **living cultural heritage**, it is usually **expressed in one of the following forms**:
  - Oral Traditions
  - Performing Arts
  - Social Practices
  - Rituals and Festive events
  - Knowledge and Practices concerning nature and the universe
  - Traditional Craftsmanship

Note:



### What is the Significance of India's Election to the Convention?

- It will help India focus on **fostering community participation, strengthening international cooperation through intangible heritage, promoting academic research** on intangible cultural heritage and aligning the work of the Convention with the **UN Sustainable Development Goals**.
- India will have **the opportunity to closely monitor the implementation of the 2003 Convention**.
- India shall **endeavour to encourage international dialogue** within the State Parties to the Convention to better showcase the diversity and importance of living heritage.

### What is UNESCO's Convention for Safeguarding the Intangible Heritage?

- **About:**
  - The Convention of the Safeguarding of the Intangible Cultural Heritage was adopted by the **United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2003** and entered into force in 2006.
  - It comprises **24 members and is elected in the General Assembly of the Convention** according to the principles of equitable geographical representation and rotation.
    - Members of the Committee are **elected for a term of four years**.
- **Purpose:**
  - **To safeguard the expressions of intangible cultural heritage** that are endangered by the processes of globalization.
  - **To ensure respect for the intangible cultural heritage** of the communities, groups and individuals.
  - **To raise awareness at the local, national and international levels** of the importance of intangible cultural heritage.
- **Publications:**
  - Representative List of the Intangible Cultural Heritage of Humanity.
  - List of Intangible Cultural Heritage in Need of Urgent Safeguarding.
  - Register of good safeguarding practices.

### Which Indian Elements were Recognized as ICH?

- India has **14 intangible cultural heritage elements** on the prestigious UNESCO Representative List of ICH of Humanity.
- Other than the Durga Puja there are **13 Traditions in India recognised by UNESCO as ICH**.

Existing Traditions of India Recognised by UNESCO	
1. Tradition of Vedic chanting, 2008	8. Buddhist chanting of Ladakh: recitation of sacred Buddhist texts in the trans-Himalayan Ladakh region, Jammu and Kashmir, India, 2012
2. Ramlila, the traditional performance of the Ramayana, 2008	9. Sankirtana, ritual singing, drumming and dancing of Manipur, 2013
3. Kutiyattam, Sanskrit theatre, 2008	10. Traditional brass and copper craft of utensil making among the Thatheras of Jandiala Guru, Punjab, India, 2014
4. Ramman, religious festival and ritual theatre of the Garhwal Himalayas, India, 2009	11. Yoga, 2016
5. Mudiyyettu, ritual theatre and dance drama of Kerala, 2010	12. Nowruz, 2016
6. Kalbelia folk songs and dances of Rajasthan, 2010	13. Kumbh Mela, 2017
7. Chhau dance, 2010	

## Conservation of Ancient Buddhist site

### Why in News?

**Archaeological Survey of India (ASI)** will conserve the **Ancient Buddhist site** on the bank of Bhima River near Kanaganahalli (forming part of Sannati site) in Kalaburagi district, Karnataka.

- The conservation project will reset the **remains of Maha Stupa retrieved in the excavation to their original positions** without much ornamentation and reconstructing of fallen portions of the Ayaka platforms using newly-fabricated bricks of the same size, shape and texture.

### What are the Findings of the Excavation?

- **Ashokan Edict:**
  - The **Edicts of Ashoka** are a collection of **more than thirty inscriptions on the pillars**, as well as boulders and cave walls, attributed to Emperor Ashoka of the Mauryan Empire who reigned from 268 BCE to 232 BCE.
- **Maha Stupa:**
  - A **Maha Stupa** was discovered 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.

Note:



- The Maha Stupa is believed to have been developed in three constructional phases – **Maurya, Early Satavahana and Later Satavahana periods** stretching from 3<sup>rd</sup> Century B.C. to 3<sup>rd</sup> Century A.D.
- The Stupa is believed to have been destroyed in an earthquake.
- Stupa is **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**.

#### ➤ Other Findings:

- Sculptural rendering of **Jataka stories**.
  - The Jatakas are an important part of Buddhist art and literature.
  - They **describe the previous existences or births of the Buddha (the Enlightened One) when he appeared as Bodhisattvas** (beings who are yet to attain enlightenment or moksha), in both human and non-human forms.
- **Shatavahana monarchs and certain unique depictions of Buddhist missionaries** sent by Ashoka to different parts.
- **72 drum-slabs** decorated with a variety of **Dharma-Chakras**.
- Sculptures of Yakshas and lion.
  - Yakshas (male nature spirits) are **personifications of the natural world**.

- Over time they were worshipped as minor gods in both the Buddhist and Hindu pantheons, often functioning as protectors of the earth's riches, and they became associated with wealth.
- **Brahmi inscriptions** with varied paleographical features.
  - Brahmi script is **one of the oldest writing systems**, having been used in the Indian subcontinent and Central Asia during the final centuries BCE and the early centuries CE.

#### Who were Satavahanas?

- In the Deccan, the **Satavahanas established their independent rule after the decline of the Mauryas**. Their rule lasted for about 450 years.
- They were **also known as the Andhras**.
- The **Puranas and the Nasik and Nanaghad inscriptions** remain important sources for the history of Satavahanas.
- The **founder of the Satavahana dynasty was Simuka**. The greatest ruler of the Satavahana dynasty was Gautamiputra Satakarni.
- The Satavahanas **patronized Buddhism and Brahmanism**. Brahmanism was revived by the Satavahanas **along with the performance of asvamedha and rajasuya sacrifices**.
- They also **patronized the Prakrit language and literature**.



Note:



# Security

## Highlights

- National Investigation Agency
- China's new High-Tech Aircraft Carrier Fujian

## National Investigation Agency

### Why in News?

Recently, the Union Home Ministry handed over the probe into the barbaric killing of a pharmacist at Amravati in Maharashtra to the **National Investigation Agency (NIA)**.

### What is the National Investigation Agency (NIA)?

#### ➤ About:

- The **NIA** is the **Central Counter-Terrorism Law Enforcement Agency of India** mandated to investigate all the **offences affecting the sovereignty, security and integrity of India**. It includes:
    - Friendly relations with foreign states.
    - Against atomic and nuclear facilities.
    - **Smuggling of arms, drugs and fake Indian currency** and infiltration from across the borders.
    - The offences under the **statutory laws enacted to implement international treaties, agreements, conventions and resolutions of the United Nations**, its agencies and other international organisations.
  - It was **constituted under the National Investigation Agency (NIA) Act, 2008**.
  - The agency is empowered to deal with the investigation of terror related crimes across states **without special permission from the states** under **written proclamation from the Ministry of Home Affairs**.
  - **Headquarters:** New Delhi
- #### ➤ Origin:
- In the **wake of the 26/11 Mumbai terror attack in November 2008**, which shocked the entire world, the then **United Progressive Alliance government** decided to establish the NIA.

- In **December 2008**, former **Union Home Minister P. Chidambaram** introduced the **National Investigation Agency Bill**.

- The agency came into existence on **31<sup>st</sup> December 2008**, and started its functioning in 2009. **Till date, the NIA has registered 447 cases**.

#### ➤ Jurisdiction:

- The law under which the agency **operates extends to the whole of India and also applies to Indian citizens outside the country**.
- **Persons in the service of the government** wherever they are posted.
- **Persons on ships and aircraft registered in India** wherever they may be.
- Persons who commit a **scheduled offence** beyond India against the Indian citizen or affecting the interest of India.

### How does the NIA take up a probe?

#### ➤ Referral:

- **State government:**
  - As provided under **Section 6 of the Act**, **State governments can refer the cases** pertaining to the scheduled offences registered **at any police station to the Central government** (Union Home Ministry) **for NIA investigation**.
    - After assessing the details made available, the **Centre can then direct the agency to take over the case**.
  - State governments are required to extend all assistance to the NIA.
- **Central government:**
  - **In India:** When the Central government is of the **opinion that a scheduled offence has been committed** which is required to be investigated under the Act, it may, suo motu, direct the agency to take up the probe.

Note:



### What are Scheduled Offences?

- The schedule to the Act specifies a list of offences which are to be investigated and prosecuted by the NIA.
- The list includes
  - Explosive Substances Act
  - Atomic Energy Act
  - Unlawful Activities (Prevention) Act
  - Anti-Hijacking Act
  - Suppression of Unlawful Acts against Safety of Civil Aviation Act
  - SAARC Convention (Suppression of Terrorism) Act
  - Suppression of Unlawful Acts Against Safety of Maritime Navigation and Fixed Platforms on Continental Shelf Act
  - Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act
  - Any other relevant offences under the Indian Penal Code, Arms Act and the Information Technology Act.
  - Narcotic Drugs and Psychotropic Substances Act
- **Outside India:** Where the Central government finds that a **scheduled offence has been committed at any place outside India** to which this Act extends, it can also **direct the NIA to register the case and take up investigation.**
- **Sanction:**
  - For **prosecuting the accused under the Unlawful Activities (Prevention) Act, 1967 (UAPA)** and certain other scheduled offences, the **Agency seeks the sanction of the Central Government.**
    - The sanction is granted under the UAPA based on the report of the **'Authority'** constituted under section 45 (2) of the UAPA.
- **Other:**
  - There is an **exclusive Left Wing Extremism (LWE) cell** to effectively deal with cases related to **terror financing aspects of Naxalite groups.**
  - While investigating any scheduled offence, **the agency can also investigate any other offence which the accused is alleged to have committed** if the offence is connected to the scheduled offence.
  - After investigation, the cases are placed before the **NIA Special Court.**

### What is NIA Special Courts?

- The Central Government for the trial of Scheduled Offences constitutes **one or more Special Courts under Section 11 and 22 of the NIA Act 2008.**
- **Composition:**
  - The Special Court shall be presided over by a **judge to be appointed by the Central Government on the recommendation of the Chief Justice of the High Court.**
  - The Central Government may, if required, appoint an additional judge or additional judges to the Special Court, on the recommendation of the Chief Justice of the High Court.
- **Jurisdiction of Special Courts:**
  - The Special Courts have all powers of the court of sessions under the **Code of Criminal Procedure, 1973.**
  - Where **any question arises as to the jurisdiction of any Special Court**, it shall be referred to the **Central Government** whose **decision in the matter shall be final.**
  - **The Supreme Court** can transfer a case pending before a Special Court to any other Special Court within that State or any other State in some exceptional cases where it is not feasible to conduct a peaceful, fair, impartial and speedy trial.
    - Similarly, the **High Court** has the power to transfer a case pending before a Special Court in a State to any other Special Court within that State.

### What are the Recent Amendments in the NIA Act?

- NIA was **amended in 2019** with the objective of speedy investigation and prosecution of certain offences, including those committed outside India.
- The amendment focussed on three main areas:
  - **Offences outside India:**
    - The **original Act** allowed NIA to investigate and prosecute offences within India.
      - The **Amended Act** empowered the agency to investigate offences committed outside India, subject to international treaties and domestic laws of other countries.
  - **Widening the scope of Law:**

Note:



- The amendment has allowed the NIA to investigate, in addition, cases related to:
  - **Human trafficking**
  - **Counterfeit currency or banknotes**
  - Manufacture or sale of prohibited arms
  - **Cyber-terrorism**
  - Offences under the Explosive Substances Act, 1908.
- **Special Courts:**
  - The 2008 Act constituted Special Courts for conducting the trial of offences under the Act.
    - The **2019 amendment allowed the central government to designate Sessions Courts as Special Courts** for the trial of scheduled offences under the Act.
    - The central government is required to consult the Chief Justice of the High Court under which the Sessions Court is functioning, before designating it as a Special Court.
  - **State governments may also designate Sessions Courts as Special Courts** for the trial of scheduled offences.

## China's new High-Tech Aircraft Carrier Fujian

### Why in News?

Recently, China unveiled its **first indigenous aircraft carrier**, the **new-generation Fujian (Type 003)**.

- China now has the **most number of aircraft carriers after the U.S.**

### What is Fujian?

- **About:**
  - The Fujian has been named after **China's eastern coastal province which lies across from Taiwan**.
  - The Fujian joins two other carriers currently operated by China — **Shandong (Type 001)**, commissioned in 2019, and the **Liaoning (Type 002)**, bought second-hand from **Ukraine** in 1998.
    - The Type 003 carrier **more technologically advanced** than its predecessors Shandong and Liaoning.
- **Features:**

- The Fujian's displacement is 80,000 tonnes, much more than the existing Chinese carriers, and comparable to U.S. Navy aircraft carriers.
- The Fujian has been fitted with the latest launch technology — **the Electromagnetic Aircraft Launch System (EMALS)**, first developed by the U.S. Navy.
- It also has a **straight flat-top flight deck for take-offs** and landings;
  - The two existing vessels use a ski jump-style ramp. A ski-jump is an **upward-curved ramp that allows aircraft to take off from a runway that is shorter** than the aircraft's required takeoff roll.

### How is this Aircraft Significant for China?

- China has **staked claim over almost all of the South China Sea** and has deployed naval assets as a show of power in the strait that separates Taiwan from the Chinese mainland.
- With the Fujian, China is **likely to get more room to operate in the South China Sea and Taiwan Straits**.
- The Indian Navy has a sizeable presence in the **Indian Ocean** but the capabilities of the Fujian provide China with a leeway to head to India's backyard, where it is increasing its presence.
- China has already acquired the **Hambantota port in Sri Lanka** as a debt swap, is modernising **Pakistan's Gwadar port** on the **Arabian Sea** and has expanded its naval base in the strategically important **Horn of Africa nation** of Djibouti.
- However, even as China expands its military strength, the U.S. remains far ahead. At present, the **United States is the world's leader in aircraft carriers**, with 11 nuclear-powered vessels, followed by China, Britain and Italy.

### What is EMALS?

- **About:**
  - It is a catapult system which helps to provide the extra push to aircrafts. Once the catapult is released, **the aircraft attached to the catapult moves forward with great speed in a short time, which helps it to gain the speed required to take off** before it reaches the end of the runway.
    - Catapult Assisted Take-off But Arrested Recovery or (CATOBAR) is one such system. In this, an aircraft takes off from a completely flat deck with the help of catapults.

Note:



- There are **two types of catapult systems** — steam-powered, and electromagnetic ones called EMALS.

- While the former uses steam pressure to fire catapults, EMALS uses linear induction motors. The **electromagnetic force generated is used to launch the aircraft.**
- Compared to steam catapults, EMALS is **more reliable, requires less maintenance, recharges faster, doesn't take up much space on a carrier and is energy-efficient.**

#### ➤ **India's Status:**

- In 2017, the U.S. provided India with its EMALS technology, developed by the U.S. defence company General Atomics Aeronautical Systems Inc.
- India explored the possibility of installing the system, but the **Navy dropped the plan due to budget constraints.**
- However, the state-owned Bharat Electronics Limited in Bengaluru is **reportedly working on an EMALS model that could be tested for CATOBAR operations on Indian warships** in the near future.

### **What is the Status of Aircraft Carrier in India?**

#### ➤ **INS Vikramaditya:**

- It is the **Indian Navy's largest aircraft carrier** and warship converted from the Russian Navy's decommissioned Admiral Gorshkov/Baku.
- INS Vikramaditya is a **modified Kiev-class aircraft carrier** that was commissioned into service in November 2013.
- It works on a Short Take-Off But Arrested Recovery, or **STOVAR mechanism** with an angular ski-jump.
  - STOVAR is a system used for the launch and recovery of aircraft from the deck of an aircraft carrier, combining elements of **"short take-off and vertical landing" with "catapult-assisted take-off but arrested recovery"**.

#### ➤ **INS Vikrant:**

- India's second aircraft carrier named INS Vikrant, set to be commissioned later this year, will use the **CATOVAR system** to launch aircraft.
- Its construction propelled India into a select group of countries having capabilities to build state-of-the-art aircraft carriers.
- Operational Modalities: According to the Indian Navy, the warship will operate **MiG-29K fighter jets, Kamov-31 helicopters, MH-60R multi-role helicopters** and the **indigenously manufactured Advanced Light Helicopters (ALH).**

# Miscellaneous

## Highlights

- Acharya Prafulla Chandra Ray
- National Statistics Day
- Kai Chutney: Odisha
- Fields Medals 2022
- Kill Switch

## Acharya Prafulla Chandra Ray

### Why in News?

Recently, **Ministry of Culture** organised a curtain raiser for two days International Conference on the “Contributions of Acharya Prafulla Chandra Ray as a Chemist and Freedom Fighter” at the **Department of Chemistry, Delhi**.

### What do we know about the Conference?

- **About:**
  - The Conference will be held on the **161<sup>st</sup> birth anniversary of Acharya Prafulla Chandra Ray** on 2<sup>nd</sup>-3<sup>rd</sup> August 2022, under the aegis of **Azadi Ka Amrit Mahotsav**.
  - **The Department of Chemistry** is celebrating its centenary year along with the **University of Delhi** and **Vijnana Bharti (VIBHA)** is going to organize jointly with **Indraprastha Vigyan Bharti, New Delhi** and the **Ministry of Culture, Government of India, New Delhi**.
- **Objective:**
  - Expand the **legacy and contribution** of Acharya Prafulla Chandra Ray in Society, with an aim to **increase general awareness** and background of **ancient chemistry** along with its importance.
    - It is unexpected that the **government** is updating the **education system from the traditional concept of the 1980's** to align with the **aspirational goals of 21<sup>st</sup> century education including SDG4 (Quality Education)**, while building upon India's traditions and value systems.

### Who was Acharya Prafulla Chandra Ray?

- Known as “**Father of Indian Chemistry**”, Prafulla

Chandra Ray (1861-1944) was a well-known **Indian scientist and teacher** and one of the first “**modern**” Indian chemical researchers.

- Originally trained at the **University of Edinburgh**, he worked for many years at **Presidency College in Calcutta** and then at **Calcutta University**.
- He discovered the stable compound **Mercurous Nitrite** in **1895**.
- The British Government **first honored him with the imperial title of CIE (Companion of the Indian Empire)**; and then with the **Knighthood** in **1919**.
- In 1920, he was elected **General President of the Indian Science Congress**.
- As a nationalist **he also wanted the Bengalis to come up in the world of enterprise**.
  - He himself set an example by establishing a **chemical firm called the Bengal Chemical and Pharmaceutical Works (1901)**.
- He was a true rationalist and was completely **against the caste system** and other irrational social systems. He persistently carried on this work of social reformation till he passed away.
- A **postage stamp** was issued on him by **India Post** on **2<sup>nd</sup> August 1961** to commemorate his Birth Anniversary.



## National Statistics Day

### Why in News?

India observes National Statistics Day on 29<sup>th</sup> June every year to honour the work and contribution of late **Professor and Scientist Prasanta Chandra Mahalanobis** in the field of Statistics and economic planning.

Note:



- On this occasion, MoSPI (Ministry of Statistics and Programme Implementation) also recognizes outstanding contributions to the official statistical system through high-quality research in the fields of applied and theoretical statistics through awards established for this purpose.

### What are the Key Highlights of the Day?

- **Aim:**
  - To popularise the **use of statistics in everyday life** and sensitise the public as to how statistics help in shaping and framing policies.
  - **To raise public awareness**, especially among the younger generation, about the role of statistics in socio-economic planning.
- **Theme for 2022**
  - **'Data for Sustainable Development'**
    - Every year, Statistics Day is commemorated with a theme of current national importance.

#### Who was Prasanta Chandra Mahalanobis?

##### ➤ About:

- Prasanta Chandra Mahalanobis was a **world-renowned Indian statistician** who **founded the Indian Statistical Institute (ISI) in 1932**.
- He was a physicist by training when he became interested in statistics after reading *Biometrika*, a reputable peer-reviewed statistics journal at the time. Fascinated, he purchased the entire set of volumes of the journal.
- He soon discovered that **statistics could be used in a variety of fields**, including meteorology and anthropology, and this proved to be a watershed moment in his scientific career.
- Dr. Mahalanobis made numerous contributions to statistics, including the **'Mahalanobis distance'**, which is a statistical measure. In addition, he was a pioneer in the field of anthropometry, or the **study of human measurements**, in India, and he assisted in the design of large-scale sample surveys and sampling methods.



- He also created the **Feldman-Mahalanobis model**, a Neo-Marxian model of economic development that was **used in India's Second Five Year Plan**, which **promoted rapid industrialization of the country**.

- Mahalanobis also **served on India's first Planning Commission**. He also **received several awards, including the Padma Vibhushan**.

##### ➤ Relations with Rabindranath Tagore:

- They first met in **Shanti Niketan in 1910**.
- Rabindranath Tagore, who was close to Mahalanobis, wrote in the second volume of *Sankhya*, "These are the dance steps of numbers in the arena of time and space, which weave the maya of appearance, the incessant flow of changes that ever is and is not."
- Mahalanobis wrote a series of essays titled **'Rabindra Parichay' ('Introduction to Rabindra')** for the prestigious Bengali magazine, *Probashi*.
- PC Mahalanobis also helped Rabindranath Tagore in setting up *Vishva Bharti*.

##### ➤ Timeline:

- **1930:** Proposed the **Mahalanobis Distance** for the first time, which is a measure of comparison between two data sets.
- The formula is used to find the distance between a point and a distribution, based on measurements in multiple dimensions. It is widely used in the field of cluster analysis and classification.
- **1932:** Founded the ISI in **Kolkata (formerly Calcutta)** which was declared as an **institute of national importance in 1959**.
- **1933:** Launched **'Sankhya: The Indian Journal of Statistics'**.
- **1950:** Established the **National Sample Survey** and set up the **Central Statistical Organisation** to coordinate statistical activities.
- **1955:** Became a member of the Planning Commission and continued in that capacity till 1967.
- He was instrumental in formulating **India's second five-year-plan (1956-1961)**, which laid the blueprint for **industrialisation and development in India**.
- **1968:** Honoured with the **Padma Vibhushan**.
- He was also conferred a large number of awards by international organisations.

Note:



## Kai Chutney: Odisha

### Why in News?

In Odisha, scientists are making a presentation for the **Geographical Indications (GI)** registry of Kai Chutney.

- The GI tag would help develop a structured hygiene protocol in the preparation of Kai Chutney for standard wider use. GI labels enhance the reputation and value of local products and support local businesses.
- In 2019, Odisha received the **GI Tag for Odisha Rasagola**.

### What are the Weaver Ants?

- Kai (Red Weaver Ant) Ants, scientifically called ***Oecophylla smaragdina***, are abundantly found in Mayurbhanj throughout the year. They construct nests with leaves of host trees.
  - The nests are **strong enough to withstand wind and are impermeable to water**.
  - Kai's nests are **usually elliptical in shape and range in size from a single small leaf folded and bound onto itself to large nests** consisting of many leaves and which measure over half a meter in length.
- The family consists of **three category members - workers, major workers and queens**.
  - Workers and major workers are **mostly orange-colored**.
- They **feed on small insects and other invertebrates**, their prey being mainly beetles, flies and hymenopterans.
- Kais are **bio-control agents**. They are aggressive and prey on most arthropods entering their territory.
- Due to their predatory habit, Kais are **recognized as biological control agents in tropical crops as they are able to protect a variety of crops** against many different insect pests. In this way, they are utilized indirectly as an alternative to the chemical insecticides.



### What is Kai Chutney?

- **About:**
  - The Kai Chutney is prepared from the Weaver ants and are popular in **Odisha's Mayurbhanj district among the people, mostly tribals**.

- When required, leafy nests of ants are plucked from their host trees and collected in a bucket of water before sorting and separation from leaves and debris.

### ➤ Significance:

- It helps in getting rid of flu, common cold, whooping cough, to increase appetite, enhance vision and eyesight naturally.
- The tribal healers **also prepare medicinal oil, which is used as baby oil and externally used to cure rheumatism, gout, ringworm and other skin diseases**.
- So it is the **only panacea for the tribes**.

### What is Geographical Indication Status?

#### ➤ About:

- GI is an indication used to **identify goods having special characteristics** originating from a definite geographical territory.
- The Geographical Indications of Goods (**Registration and Protection**) Act, 1999 seeks to provide for the registration and better protection of geographical indications relating to goods in India.
  - The Act is administered by the Controller General of Patents, Designs and TradeMarks-who is the Registrar of Geographical Indications.
  - The Geographical Indications Registry is located at Chennai.
- The registration of a geographical indication is valid for a period of 10 years. It can be renewed from time to time for a further period of 10 years each.
- It is also a part of the **World Trade Organisation's Trade-Related Aspects of Intellectual Property Rights (TRIPS)**.
  - **Recent Examples: Judima Wine Rice (Assam), Tirur Vetilla (Kerala), Dindigul Lock and Kandangi Saree (Tamil Nadu), Odisha etc.**

#### ➤ Significance of GI Tag:

- Once the GI protection is granted, **no other producer can misuse the name to market similar products**. It also provides comfort to customers about the authenticity of that product.
- Having a GI tag for a product **prevents unauthorised use of a registered Geographical Indication by others, boosts exports of Indian Geographical indications** by providing legal protection and also enables seeking legal protection in other **WTO (World Trade Organizations)** member countries.

Note:



## Fields Medals 2022

### Why in News?

Recently, **Ukrainian mathematician Maryna Viazovska** along with other three mathematicians **received the prestigious Fields Medals.**

- Fields medal is often described as the ***Nobel Prize in mathematics.***

### What are the Key Highlights about Field Medal?

- **About:**
  - The Fields Medal is awarded **every four years to one or more mathematicians** under the age of 40.
  - Fields Medal is awarded at the International Congress of the ***International Mathematical Union (IMU).***
    - IMU is an international **non-governmental and non-profit scientific organization.**
      - The purpose of IMU is to **promote international cooperation in mathematics.**
  - Fields medal is awarded to **recognize outstanding mathematical achievement** for existing work and for the promise of future achievement.
  - The Fields Medal Committee is chosen by the Executive Committee of the International Mathematical Union and is normally **chaired by the IMU President.**
- **History:**
  - The 1924 ICM in Toronto adopted a resolution that at each conference, two gold medals would be awarded to recognise outstanding mathematical achievement.
  - The Canadian mathematician Prof J C Fields, who was secretary of the 1924 Congress, later donated funds to establish the medals, which were named in his honour.
  - In 1966, it was agreed that, in light of the great expansion of mathematical research, up to four medals could be awarded at each Congress.
  - It was first awarded in **1936.**

### What about the Indian-origin winners?

- Among the more than **60 mathematicians who have been awarded the Fields Medal** since 1936, there are two of Indian origin:
  - Akshay Venkatesh of the Institute for Advanced Study at Princeton (2018)
  - Manjul Bhargava of the Department of Mathematics at Princeton University (2014).

## Kill Switch

### Why in News?

The recent 'Uber Files' reveal that the company had deployed kill switches, purportedly to destroy sensitive data that could have been legitimately accessed by police and officials.

### What is Kill Switch?

- **About:**
  - A kill switch is a mechanism used to shut down or disable a device or program.
  - In the manufacturing sector, they are deployed to **terminate operations to arrest damage in assembly lines or save a worker's life.**
  - They serve a similar purpose in the digital world but instead of hardware, they are mostly software-based.
  - The purpose of a kill switch is usually to prevent theft of a machine or data or shut down machinery in an emergency.
- **Indian context:**
  - There was rape in a moving vehicle by the Uber driver, after that case, there was a suspension on uber for two months.
  - Further regulatory authorities found many discrepancies around the company like,
    - VAT (value added tax) return violations.
    - Blocking access to data for Indian authorities.
    - No physical presence of operations and Indian operations are being ran from Netherlands headquarters.



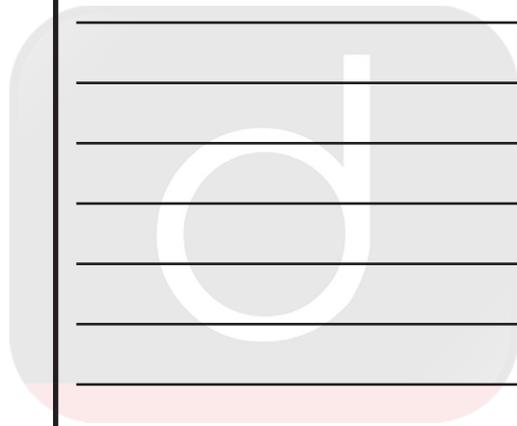
Note:





**Key Points**

**Details**



**Summary**