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Energy Transition Index

Why in news?

- The World Economic Forum ranked India at 67th place globally on its Energy Transition Index and said it is the only major economy with energy transition momentum accelerating across all dimensions.

Key highlights of the report

- Sweden once again topped the ETI followed by Denmark and Norway. These countries have been in the top three for the past decade.
- India and Singapore (70th) are the only major economies showing transition momentum by advancing sustainability, energy security and equity in a balanced way, according to the report.
- Along with China and Indonesia, India is among the 55 countries that have improved their ETI score by more than 10 percentage points over a decade.
- The US (12), Australia (24) and Estonia (10) scored the highest in energy security which measures the resilience and reliability of supply.
- Brazil (14) and China (17) are among the top 20 countries due to their abundant hydroelectricity capacity and leadership in biofuels. Brazil scored high on energy security and environmental sustainability, accounting for 7 percent of renewable energy production worldwide.
- China leads in renewable energy investments and capacity development, supported by mature domestic supply chains, and in the incubation of industries such as electric vehicles and energy storage.
- India jumped 20 places to the 67th position among 120 countries in the 'Energy Transition Index' (ETI). In 2021, India was in the 87th position among 115 countries.

> **World Economic Forum:**
> - WEF is a Swiss nonprofit foundation established in 1971, based in Geneva, Switzerland.
> - Recognized by the Swiss authorities as the international institution for public-private cooperation.
> - Mission : Committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas.

International Conference on Green Hydrogen(ICGH-2023)   **Environment & Ecology**

Why in news?

- The three-day International Conference on Green Hydrogen (ICGH-2023) at was inaugurated today, by the Union Minister for Power and New and Renewable Energy

About the conference

- It was organized by:
  - Ministry of New and Renewable Energy, in partnership with
  - Ministry of Petroleum and Natural Gas,
  - Council of Scientific and Industrial Research (CSIR)
  - Office of Principal Scientific Advisor to Government of India
  - Confederation of Indian Industry (CII).
  - Aim: To explore on establishment of a Green Hydrogen ecosystem and foster a systemic approach for meeting the global goals for decarbonization through Green Hydrogen.
- Key features of ICGH-2023:
  - The conference would bring global scientific, policy, academic and industrial leaders for plenary talks, expert panel discussions and technical deliberations on green hydrogen value chain.
  - This would provide an opportunity to explore national and global priorities, especially the objectives of India's National Green Hydrogen Mission.
  - It will allow domain-specific research interactions on hydrogen production, storage, distribution, and downstream applications.
  - Green financing, human resource upskilling, startup initiatives and international best practices in Green Hydrogen.
  - It will open doors to the evolving green hydrogen landscape, innovation-driven solutions, and sustainability ecosystem of the sector.

About National Green Hydrogen Mission (NGHM):
- NGHM was launched by the Ministry of New and Renewable Energy in 2021.
- Objective: To make India the Global Hub for production, usage and export of Green Hydrogen and its derivatives for global Clean Energy Transition.
- The Mission will, reduced dependence on fossil fuel imports, and enable India to assume technology and market leadership in Green Hydrogen.
- It is targeted to produce at least 5 million Metric Tonne (MMT) of Green Hydrogen per annum by 2030, with potential to reach 10 MMT per annum with growth of export markets.
- Sub-schemes:
  - Strategic Interventions for Green Hydrogen Transition Programme (SIGHT): It will fund the domestic manufacturing of electrolysers and produce green hydrogen.
  - Green Hydrogen Hubs: States and regions capable of supporting large-scale production and/or utilization of hydrogen will be identified and developed as Green Hydrogen Hubs.

Ground Water Management & Regulation   Environment & Ecology

Why in news?
- Govt. Highlights the Various initiatives and measures taken by the Central Government of India to improve and manage groundwater conditions in the country.

Various initiatives towards Groundwater Management & Regulation
- Central Sector Scheme 'Ground Water Management & Regulation'
- Central Ground Water Board (CGWB)'s Central Sector Scheme 'Ground Water Management & Regulation' aims at delineation of aquifer disposition & their characterization for preparation of aquifer/area-specific groundwater management plans, Ground Water (GW) Monitoring, GW Resource Assessment, GW Regulation, etc. The information generated is shared with States/UTs for their suitable interventions.

Model Bill Groundwater Management & Regulation
- The bill has the provision of rainwater harvesting. So far, 21 States/UTs have adopted and implemented the groundwater legislation along the lines of the Model Bill including West Bengal.
- **Jal Shakti Abhiyan (JSA)**
  - The government of India was first launched in 2019 in water-stressed blocks of 256 districts which continued during the years 2021, and 2022 also (across the entire country both rural and urban areas).
  - Its primary aim is to effectively harvest the monsoon rainfall through the creation of artificial recharge structures, watershed management, recharge and reuse structures, intensive afforestation and awareness generation etc.
- **Amrit Sarovar Mission**
  - The Prime Minister launched Amrit Sarovar Mission on 24th April 2022. The Mission is aimed at developing and rejuvenating 75 water bodies in each district of the country as a part of the celebration of Azadi ka Amrit Mahotsav.
- **Atal Bhujal Yojana**
  - The Central Government is implementing Atal Bhujal Yojana with an outlay of Rs. 6,000 crores, in collaboration with States, in certain water-stressed areas of Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.
  - The primary aim of the scheme is demand-side management through scientific means involving the local communities at village levels leading to sustainable groundwater management in the targeted areas.

National Aquifer Mapping Program (NAQUIM)
- CGWB is implementing the National Aquifer Mapping Program (NAQUIM) in the country and an area of
- 25.15 lakh sq km (the available mappable area) has been covered under the NAQUIM studies.
- The NAQUIM study reports along with management plans are shared with States/UTs for suitable interventions.
- Master Plan for Artificial Recharge to Groundwater- 2020
- Master Plan for Artificial Recharge to Groundwater- 2020 prepared by the CGWB in collaboration with States/UTs envisages the construction of about 1.42 crore Rain Water Harvesting and artificial recharge structures in the country to harness 185 Billion Cubic Metres (BCM) of water.

Why in news?

- There has been a gradual increase in the population of Western Tragopan at Himachal Pradesh's Sarahan pheasantry, the conservation breeding centre, bringing a glimmer of hope for its survival and growth.

About Western Tragopan

- Western Tragopan is also known as the western horned tragopan, is amongst the rarest of all living pheasants.
- Due to its beautiful plumage and large size, this bird is locally known as 'jujurana' or 'king of birds'.
- It is the state bird of Himachal Pradesh.
- It is endemic to the northwest Himalaya, within a narrow range from Hazara in north Pakistan through Jammu and Kashmir and Himachal Pradesh, to the western part of Garhwal.
- The upper part of Great Himalayan National Park's (GHNP) forest zone holds the world's largest known population of western tragopan.
- It prefers a habitat of ringal (dwarf) bamboo beneath dense forest.
- It feeds mostly on leaves, shoots and seeds, but also consumes insects and other invertebrates.

Conservation status of Western Tragopan:

- International Union for Conservation of Nature (IUCN): Vulnerable
- The Indian Wildlife (Protection) Act 1972: Schedule I
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): Appendix

Cnservation efforts for Western Tragopan:

- The bird was bred in captivity by Himachal Pradesh Government which has led to increase in its population.
- In 2019, the plan for reintroduction Western Tragopan from captive breeding to the wildwas approved by the Himachal Pradesh Zoos and Conservation Breeding Society.

Why in news?

- The latest version of the India Energy Security Scenarios (IESS) 2047 V3.0 has been launched by NITI Aayog.

About Revamped India Energy Security Scenarios (IESS) 2047 (IESS 2047 V3.0)

- A Revamped India Energy Security Scenarios (IESS) 2047 (IESS 2047 V3.0) is designed with the help of IIT Bombay.
- It is an open-source tool.
- The revamped IESS 2047 will be updated on a yearly basis.
- The baseline has been standardized in 2020 and calibrated up to 2022.

Features

- Comprehensive assessment of Energy Scenario: It is used to assess the integrated impact of various green energy policies of the Government of India and the demand and supply of energy in the country and helps in analyzing emissions, cost, land, and water requirements till 2047.
- Incorporation of policies related to alternative energy resources: It incorporates several policies related to alternative energy resources like Green Hydrogen, Energy Storage, Renewable Purchase Obligations, PM-KUSUM, offshore wind strategy, Electric Vehicle policy, Energy efficiency, etc.
- Downloadable: This version of IESS is easily downloadable and facilitates users to generate their own pathways.
- Help develop user-specific scenarios: It will help researchers and think tanks to develop user-specific scenarios and the option of customized applications on the basis of the share of industry/services/agriculture, population, the pace of urbanization, end-use energy demand etc.
- Open-Source and User-Friendly: IESS 2047 is a user-friendly interactive tool that can help ministries/departments to develop a variety of energy transition scenarios to achieve net zero.
- Compute energy needs: It provides capabilities to compute the energy needs and estimates of the country and hence reduces India's dependency on external agencies for the estimates.

BIOLOGICAL DIVERSITY BILL, 2022   26/7/23

→ Features :- (BD Act - 2002)

i) Equitable Sharing Benefits

    Safeguard rights of local communities

ii) Nat· Bio-Div· Authority :- Regulatory Body·

iii) State Bio-Div· Boards :- promoting sustainable practices, etc·

iv) Bio-Div· Management committees - Sust· use of Bio resources·

v) Access & Benefit Sharing Agreements (individuals, inst'ns)·

vi) Bio-Div Fund :- Created at both state & centre levels·

→ Significance of Amendment)

Promotes UN-CBD Provision ← (**Nagoya** Protocol)·

Boosting Indian Medicine (AYUSH)

→ +ve's

→ Promotes cultivation of Med'l plants

→ Expansion of Nat· Bio-Div Auth·

→ Recognises Patents· (IPR)·

↑ EoDB (for foreign investments)

Tech· innovation·
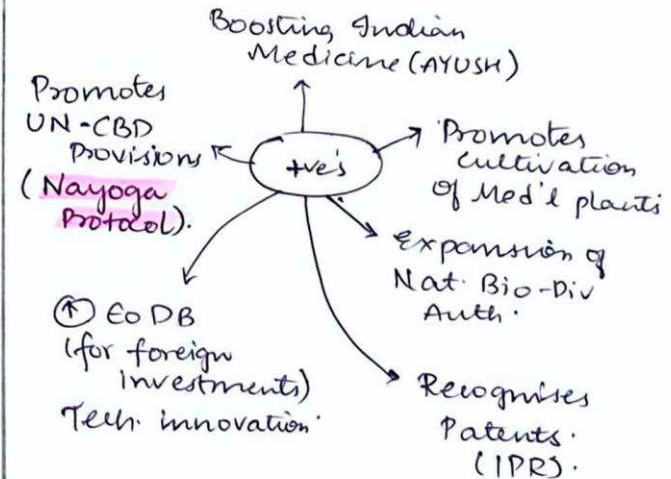
Issue· (BDA-2002)	Changes· (2022)	Issues· (BDA - 2022)
i) "Foreign companies" (not defined	i) Those entities which are "Foreign-controlled" ↔ under companies Act, 2013·	~~Def^n of "Fore~~ → RISK of Bio-Piracy·
ii) "Domestic entities" taking permission frm SBB - "~~for~~" comm -ercial util^n of resources"	ii) Permission from SBB· even for "accessing knowledge of comm'l utils^n of resources" →) **Cartagena Protocol**)·	unclear - whether "Only prior permission" (or) "Approval"·
iii) Equitable Benefit Sharing- not follow -d (undefined)	iii) Ben· sharing - based on agreement b/w "user & local ~~community~~ management committee"	→ removed direct role of local community approval & interests· (E·Sreedhar Committee)
iv) conservation v/s· Development Dilemma	iv) Users of AYUSH- exempted from criminalised offences·	Not defined "Trad'l knowledge" - vague·
v) No provision for Investments from foreign sector	v) encourages foreign investments· (approval from NBA - needed)	

FOREST (CONSERVATION) ACT, 1980

Aims of FC Act :-
- Protect forest (flora, fauna & other ecological components)
- ↓ loss of forest Biodiversity
- Prevent forest lands → agri, grazing, any commercial purposes

Features of FC Act :-
- SG & other authorities - decisions after permission from CG. (Sec-2)
- CG - complete authority to carry out obj of the Act
- Penalties.
- Advisory committee (helps CG) (sec-3)

Imp Sections of FC Act :-
Sec-1 : Law applies to whole India except J & K (only 37 laws applicable)

Sec-2 : "Non-forest purposes" include - Tea, coffee, Spices, Rubber, Palms, Oil-bearing, Medicinal plants.

Issues with FC Act, 1980 :-
- Protection only to areas marked as "forest" in CG/SG records.
- Godavarmam Thirumulpad Case, 1996 SC - re-define to increase scope but all states did not do it.
- Only 21% of forest cover is covered in these provisions
- Lack of public support due to infringement of human rights of poor native people
- Did not recognize role of local forest-dwellers.

Forest Conservation Bill, 2023 | Amendments :-
- Preamble to the Act
- Restrictions on Activities in Forest ↳ any purpose other than reafforestation
- More activities Added.
  → Wild life (Protection) Act :- Zoos & safaris protected areas
  → Eco-tourism facilities
  → Silvicultural operations [enhancing forest growth]
  → Any other purpose specified by CG.
- Land under Purview of the Act

  Declared / notified as forest under "Indian Forest Act" / any law

  land not covered in 1st category but notified as forest on/after oct 1980 in govt record.

- Power to Issue Directions — CG to any authority.
- **Exemptions**
  - Strategic linear projects of "national importance and concerning nat security" within 100 km of International borders, LAC, LoC.
  - Security-related infra upto 10 hectares
  - Construction zoos & wildlife safaris, eco tourism facilities

Issues with Bill :-
- Forest lands which are nt reserved area but are available in govt records before 1980 are not covered. [goes against Godavarman judgement]
- Misuse of terms → 'proposed', 'ecotourism facilities', 'any other purposes'.

Significance of Bill :-
- Incentivise private parties
- Develop carbon sink of 3 Bn tonnes by 2030 (Paris Agreement).
- In line with SDG-15 (Life on Land).

Why in news?
- Japanese regulators began a final inspection before treated radioactive wastewater is released from the wrecked Fukushima nuclear plant into the Pacific Ocean.

Issues with nuclear Wastewater
- Emissions for a long time: Nuclear waste radiates emissions for a long time. Nuclear Wastewater contains many nuclear wastes. So, they cannot be disposed of in the open area.
- Affect the living species and plants: Nuclear wastewater coming from the plant can contaminate the whole water source and affect the living species and plants under the water.
- Research has shown that a number of marine species could have their DNA damaged through extended exposure to radionuclides in seawater. Experiments with both marine and freshwater mussels have found that when radionuclides are present in seawater alongside commonly-occurring metals like copper, the DNA damage caused by radionuclides to the mussels was increased.
- Affects revenue of fish farmers: In a world where global dependence on fisheries for food is increasing and at least 10% of the world's population depends on fisheries for their livelihood, a potentially contaminated environment could result in a contaminated food chain, raising consumer concerns. Fishing groups fear the wastewater release might cause consumers to stop buying seafood from the area.
- Cancer and genetic diseases: 95% of cancers in humans are triggered by exposure to toxic substances present in the environment, food included. If these substances damage genetic material within our cells, that damage must be repaired.
- If that genetic damage happens to egg or sperm cells, it may be passed down from parent to child, triggering new diseases in future generations. To neutralise these complex threats, it's key to ensure that only safe levels of nuclear waste are being released into the ocean.

Why in news?
- The 64th Global Environment Facility's (GEF) governing board has approved plans to establish a new fund to finance the implementation of the Kunming-Montreal Global Biodiversity Framework adopted in December 2022.
- The 64th GEF Council meeting
- The 64th GEF Council meeting was held in Brazil.
- Council members agreed on the establishment of a new trust fund, called the Global Biodiversity Framework Fund and the programming directions for it.

Ratification
- The Global Biodiversity Framework Fund (GBFF) can be ratified by ministers of environment and finance of member countries at the Seventh GEF Assembly in Vancouver, Canada in August.
- The members agreed to support the new agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction.

The proposed fund allocations are as follows
- 20 per cent will go to Indigenous Peoples and local communities (IPLC). This is an aspirational goal.
- 25 per cent will go to GEF agencies and must be enforced.
- Allocation of funds to IPLCs would be reviewed two years after ratification in August.
- SIDS and LDC will get 36 per cent and 3 per cent, respectively. This would be reviewed three years after ratification.

Importance
- The approval is important as nearly 50 per cent of its funds are to be used for biodiversity-related work in the coming years during the GEF-8 period.
- Will provide $1.4 billion to support efforts on environmental protection.
- The establishment of GBFF is the first test of the robustness of the Framework(GEF).

- The role of Indigenous Peoples and local communities as irreplaceable biodiversity stewards has been recognised.

Global Environment Facility's (GEF) Council

- The Council, the GEF's main governing body, comprises 32 members appointed by constituencies of GEF member countries (14 from developed countries, 16 from developing countries, and two from economies in transition).
- Council members rotate at different intervals determined by each constituency. The Council, which meets twice annually, develops, adopts and evaluates the operational policies and programs for GEF-financed activities.
- It also reviews and approves the work program (projects submitted for approval), making decisions by consensus.

The Global Environment Facility (GEF)

- The Global Environment Facility (GEF) was established on the eve of the 1992 Rio Earth Summit.
- Through its strategic investments, the GEF works with partners to tackle the planet's biggest environmental issues.
- The GEF is A UNIQUE PARTNERSHIP of 18 agencies, including United Nations agencies, multilateral development banks, national entities and international NGOs, working with 183 countries to address the world's most challenging environmental issues.
- The GEF is a FINANCIAL
- MECHANISM for five major international environmental conventions:
  - the Minamata Convention on Mercury,
  - the Stockholm Convention on Persistent Organic Pollutants (POPs),
  - the United Nations Convention on Biological Diversity (UNCBD),
  - the United Nations Convention to Combat Desertification (UNCCD) and
  - the United Nations Framework Convention on Climate Change (UNFCCC).
- Other areas of work
  - GEF is also an INNOVATOR AND CATALYST that supports multi-stakeholder alliances to preserve threatened ecosystems on land and in the oceans, build greener cities, boost food security and promote clean energy for a more prosperous, climate-resilient world.
  - The GEF Trust Fund was established to help tackle our planet's most pressing environmental problems.
  - Funds are available to developing countries and countries with economies in transition to meet the objectives of international environmental conventions and agreements.

Diversity for Restoration (D4R) Tool   Environment & Ecology

Why in news?

- Researchers have devised a tool that enables appropriate agroforestry and aids systematic ecosystem restoration.

About the tool

- The Diversity for Restoration (D4R) tool was devised by Bioversity International. It was later modified by another team of researchers to adapt it to the Indian context.
- The team from Ashoka Trust for Research in Ecology and the Environment (ATREE), with the help of Bioversity International, modified it to promote restoration programmes in India.

Features of the tool

- Identifying the match: The tool will help improve the effectiveness of restoration programmes by providing manifold benefits to interested stakeholders while promoting sustainable development. The tool helps the user in identifying species that match their restoration objectives.
- Identification of species: It further helps identify species that can resist local stresses and adapt to evolving environmental conditions.
- Pinpointing suitable areas: It also helps pinpoint areas and regions to procure the seeds for the required species.
- Functional traits: The tool has information about 100 plant functional traits that have been considered to offer the best possible solution. Functional traits include information on economic and ecological uses from the tree species chosen for plantation.

- Habitat predictions: The tool has been incorporated with habitat tv suitability modelling for species-specific suitable habitat predictions under present and future climate scenarios.
- Commercially beneficial trees: The tool informs the user whether the tree species offers timber, fruit, manure or other commercial benefits. It also informs if the tree is resilient to physiological stresses such as extreme high or low temperatures, salinity or acidity tolerance in the soil among others.
- Identification of windbreaks: The tool could also identify windbreakers, the trees can act as a barrier against high winds. The user can also know if the species offers better nitrogen fixing and whether it serves as a good pollinator for birds and bees.
- The score for trees: It provides a score of a particular tree species for plantations. This score helps determine and decide how well the species match the given site conditions and restoration objectives.
- Provides recommendations: The tool also provides varied recommendations that help in maximizing the chances of restoration along with propagation information and monitoring suggestions.

Meri Mati Mera Desh Campaign   Environment & Ecology

Why in news?
- The Union government has launched the 'Meri Maati Mera Desh' campaign, envisaged as a culminating event of the 'Azadi Ka Amrit Mahotsav' celebration of 75 years of Indian Independence.

About the campaign
- Development of garden
- Soil collected from different parts of the country in August will be used to develop a garden along the Kartavya Path in Delhi.
- Events have been planned at the panchayat, village, block, urban local body, and State and national levels, respectively. The panchayat-level programmes will be organised between August 9 and 15.
- A five-point agenda has been developed under this. The five-point agenda includes
    - **Shilaphalakam:** A shilaphalakam (memorial plaque), bearing the ,names of those who have made the supreme sacrifice will be installed. The veers (Bravehearts) include freedom fighters, defence personnel, personnel of the Central Armed Police Forces (CAPF), and State Police, which falls under this.
    - Work for the shilaphalakam may be executed through the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), leveraging local materials and resources.
    - **VasudhaVandhan:** 'VasudhaVandhan' envisages every gram panchayat or village renewing ,Mother Earth by planting 75 saplings of indigenous species and developing an AmritVatika.
    - **VeeronKaVandan:** 'Veeron Ka Vandan' will facilitate freedom fighters, and the families of deceased
    - freedom fighters.
    - **MittiKalash:** Young volunteers and others will collect soil from every panchayat/village and bring it to the block, from where the 'MittiKalash' will be transported to Delhi. The mitti (soil) from all parts of the country will be utilised to develop a unique garden, called the AmritVatika, with the planting of indigenous species.
    - **Azadi Ka Amrit Mahotsav' memorial:** An 'Azadi Ka Amrit Mahotsav' memorial, dedicated to all the heroes
    - who have contributed to the freedom, unity and integrity of the country, will be erected.

Mekedatu Reservoir Project   Environment & Ecology

Why in news?
- Environmentalists advocate for the revival of the raja kaluve network and dead lakes in Bengaluru to resolve the city's drinking water problem instead of moving ahead with the Mekedatu Reservoir Project.

About the project
- The Mekedatu project aims to create a balancing reservoir on the Cauvery River in Karnataka.
- The project was approved by the Karnataka state government in 2017.
- It received approval from the erstwhile Ministry of Water Resources for the detailed project report and is awaiting approval from the Ministry of Environment, Forest and Climate Change (MoEFCC).
- It would help regulate water flow and provide drinking water to Bengaluru, the capital city of Karnataka.
- Additionally, the project intends to support agricultural activities in the Cauvery basin and ensure water availability for farmers in both Karnataka and Tamil Nadu.

- The approval from MoEFCC is in highlights because 63% of the forest area of the Cauvery Wildlife Sanctuary will be submerged.

Opposition from Tamil Nadu
- Mekedatu area represents the last free point in Karnataka from where Cauvery water flows unrestricted into Tamil Nadu.
- Since there is no dam there at present, water from there has been reaching Tamil Nadu without any hindrance. The Tamil Nadu Government has alleged that the Mekedatu dam project is an attempt by Karnataka to block this free flow of water and if the dam is built, Karnataka will only release residual quantities of water to Tamil Nadu.

Scrub Typhus   Environment & Ecology

Why in news?
- The Health department of Kerala has issued an alert against scrub typhus in Alappuzha as fresh cases of the disease have been reported from Kalath and District Court wards in Alappuzha municipality.

About Scrub Typhus
- Scrub typhus is an infectious disease.
- Spread by the bite of infected chiggers (larval mites, similar to mites)
- It is caused by a bacteria called Orientia tsutsugamushi.
- It is also called bush typhus.
- Symptoms- sores, fever, headache, body ache and sometimes rash.
- Infection can cause abnormalities in the heart, lungs and blood

Kaas Plateau   Geography

Why in news?
- A new study of the sediments from a seasonal lake in the **Kaas Plateau in the Satara district of Maharashtra has indicated a major shift in the Indian Summer Monsoons** towards dry and stressed conditions with low rainfall during the Early-Mid–Holocene, around 8664 years BP.

About the study
- Agharkar Research Institute (ARI), Pune, **an autonomous institute of the Department of Science and Technology** along with the National Centre for Earth Sciences, Thiruvananthapuram studied the sediments of a seasonal lake to understand and decipher the past climate of the Kaas Plateau.
- A sediment profile **dating back to 8000 years** was analyzed (by available carbon dates-AMS) to decode the climatic signatures.

Outcomes of the study
- **Existence of an Ancient Lake named the 'Flower Wonder' :** and size that is close to that of its orbital neighbour Earth.
- It appears in Earth's sky always close to the Sun, as either a **"morning star" or an "evening star".**
- While this is also true for Mercury, Venus appears much more prominently, since it is the third brightest object in Earth's sky after the Moon and the Sun, appearing brighter than any other star-like classical planet or any fixed star.

Atmosphere of Venus
- Venus has a **weakly induced magnetosphere.**
- It has an especially thick carbon dioxide atmosphere, which creates, together with its global sulfuric acid cloud cover, an extreme greenhouse effect.
- This extreme greenhouse effect results at the surface in a mean temperature of 737 K (464
- °C; 867 °F) and a crushing pressure of 92 times that of Earth's at sea level, turning the air into a supercritical fluid.
- The 'Flower Wonder' might likely have existed for a longer duration, up to March- April, during the early–mid-Holocene, when the monsoon rainfall (more than 100 rainy days) was undoubtedly better than today.

Modifications of lake
- The signatures of **diatoms, mites, thecamoebians, and sediment** characteristics provided better resolutions regarding the hydrological processes and modification of the seasonal lake.

Freshwater accumulation
- The research indicated that the seasonal lake, the 'Flower Wonder', favoured **freshwater accumulation almost for 8000 years** before the present (BP) and probably dried sometimes after 2000 years BP.

Shifts in monsoon during the Early-Mid-Holocene
- During the early to mid-Holocene, around 8664 years ago, pollen, as well as diatom data, indicated a change in the climate from freshwater to drier conditions with low rainfall.
- However, there was a significant rise in the number of diatoms in between, suggesting a major shift in the Indian summer Monsoon activity during that time, possibly resulting in intermittent humid periods amidst the dry spells.

Weakened southwest Monsoon during the late Holocene and Intensified S-W monsoon during the Early Holocene
- The observations of the scientists showed a decrease in rainfall and a weakened southwest Monsoon during the late Holocene (around 2827 years BP). However, the southwest Monsoon intensified during the Early Holocene, approximately 8000 years ago, and the northeast monsoon relatively weakened around 2000 years ago.

Lake eutrophication
- However, during the recent past (around the last 1000 years), pollen, as well as the presence of a high number of planktonic and pollution-tolerant diatom taxa indicated lake eutrophication, possibly due to human impact and cattle/livestock farming in the catchment.

Kaas Plateau
- Kaas Plateau, nestled in the Western Ghats is about **140 km from Pune**, was included in the **UNESCO World Natural Heritage Site in 2012.**
- It is known as **KaasPathar** in Marathi.
- Its name was erived from the **Kaasa tree**, botanically known as **Elaeocarpusglandulosus (rudraksha family).**
- Designated as a biodiversity hotspot, the Kaas Plateau comes to life with various seasonal flowers forming a floral carpet over the entire lateritic crust during August and September.

Gomati River's Perennial Status   Geography

- A three-year-old government order (GO) issued by the irrigation department of the Uttar Pradesh government declaring the **Gomti as a 'non-perennial river'** has drawn flak from water experts and river rights activists. The GO has surfaced recently but was issued on September 3, 2020.

About the order
- The government order was issued regarding the **floodplain zoning for 12 rivers**, including Gomti.
- The old GO on defining the floodplain of various rivers was brought to public notice as the work on the **green corridor project in Lucknow** which aims to link the western and eastern parts of the city is underway.
- **50 meters from both banks will be declared as no construction.** The demarcation of the floodplain will be made a suitable location by planting a row of suitable plants through the forest department.
- The order says that it's a non-perennial river, **e-flow (environmental flow) cannot be maintained** throughout the year and no surplus water is available to augment the flow.
- The order also declared a 50 metres area from both banks of the river as a no-construction zone.

Issues of declaring a river as Non-Perennial
- **Diversion of environmental concerns:** The declaration of the river as a seasonal one takes away from its importance of protection from pollution, exploitation and encroachment.
- **Against the status quo:**,A river that provides the daily water supply to the state capital. The 960-km- long river also supplies around 450 million litres per day of water to Lucknow throughout the year. Declaring it a 'non-perennial' despite it being a source of large volumes of water goes against the spirit of the river.
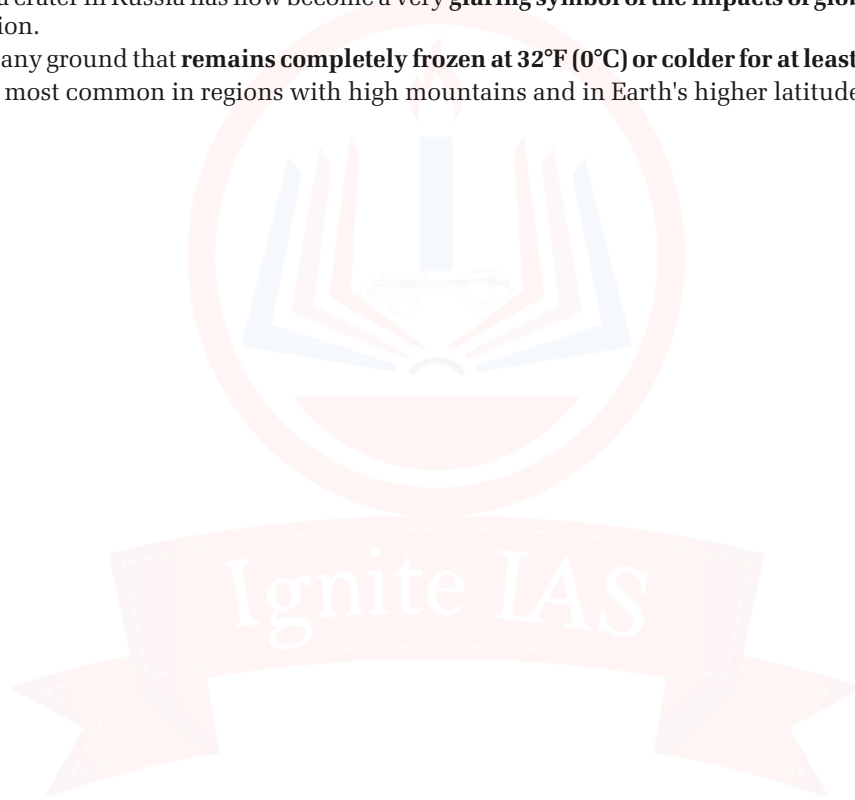
- **Loss of its importance:** Gomti has a very wide floodplain and the river swells up during monsoons and brings abundant water to the Ganga. The river is the lifeline for the people of the area where it flows. The no-perennial status of the river might lead to the loss of its importance.
- **Damage to river water ecosystem:** Since the order maintains that no e-flow can be ensured. Lack of environmental flow in the river leads to damage to the river water ecosystem.
- **Promotes rampant development in floodplains:** Many development projects are likely coming up in UP that are planned around the floodplain areas in the state. The authorities are thus seeking available orders to define the floodplains and this GO has resurfaced.

World's Biggest Permafrost Crater   Geography

- **The Batagaika crater,** the world's largest one kilometre-long permafrost crater, is expanding at a baffling rate due to the thawing of the permafrost, exacerbated by global warming.
- The crater is located in the **Sakha Republic of Russia.**
- In the 1960s, after deforestation led to the melting of the underground **permafrost**, it caused the land to sink forming a crater, what is locally called '**the cave-in' or 'mega-slump.'**
- The Batagaika crater in Russia has now become a very **glaring symbol of the impacts of global warming** due to its rapid expansion.
- Permafrost is any ground that **remains completely frozen at 32°F (0°C) or colder for at least two years straight.**
- Permafrost is most common in regions with high mountains and in Earth's higher latitudes, near the North and South Poles.

↱ overflow of waters on land
Floods (MPn. of water Resources)

Vulnerability:

2014
chandigarh
Delhi
Uttarakhand 2021 (River-Glacial)
Bihar flood (2019) (River)
Patna
↗ Brahmaputra River flood Assam floods (2022)
Dam River floods (2017)
Dispur
Kolkata (2017) (WB)
Gandhinagar
Bubaneshwar
Hyd (2020)
Chennai floods (2015) (Urban flooding)
Kerala floods (2018) (River flooding)

• National flood mitigation Project → 11th 5yr plan

NDMA & Rashtriya Barh Ayog

▪ Area Liable to Flood
Avg. 75L Hec Land affected

∟ India → 12% of land area → Vulnerable to floods & river Erosion.

BH 1980 & 2017 → 235 floods (1.3L deaths, 1.93B people affected)
Economic loss ₹59B

The working group on flood control prog (10th 5yr plan)
∟ 45.64 Hectares (Total flood prone area)
∟ 80% can be provided with a resonable degree of protection.

Bodless

CWC : Monitors water level in Rivers & Reservoirs
Responsible for flood alerts (Early warning?)

IMD : Forecasting
ISRO : Sattilite Imagining
NDMA, MHA, BIS, River management Boards
National Commission on floods
Rashtriya Barh Ayog (1980) (Comm.)
• Incident Command System
∟ local level   ↑ EOC's

Committees :
① High level Committee on floods (1957)
② The ministers Committee (1964)
③ Task-force of Fm & Erosion — Control (2004)

Const'n :
- Drainage & Embankments
∟ Entry 17 of State List

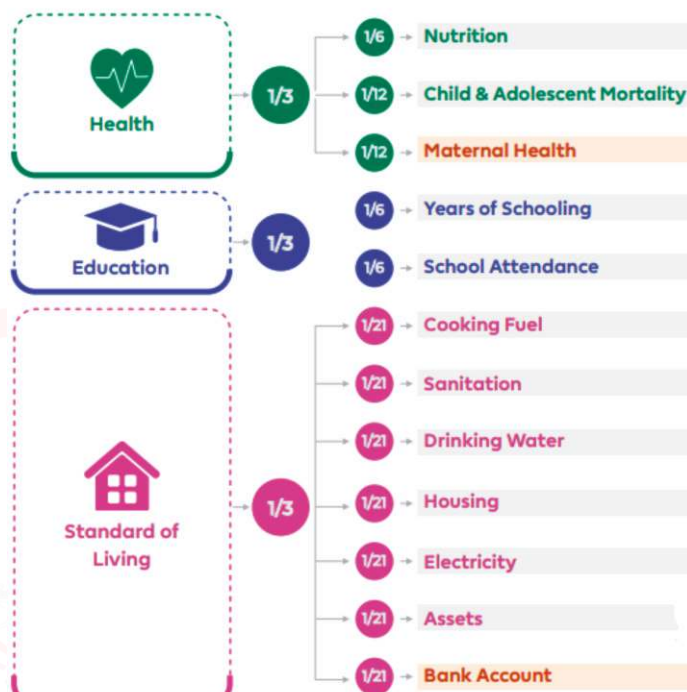| Types	Causes	Consequences	Challenges	Recommendations
Flash Floods	Varying Rainfall distribution (Endogenous) Poor drainage facilities ↑se in ground water levels Cloud bursts Deforestation	① Crop Damage ② Loss of lives (Livestock too) (4) ③ Destruction of habitats ④ ↓ in forests → Ecosystem? National parks ⑤ ⑩ ①②③④ ⑦⑧	① Non Availability of Close contour maps & Digital Elevation models ② Flood forecasting & Warning (IMD) → Does not cover all flood prone areas (automatic, telemetry system) ③ State govt's some → Plans → Sendai ④ Operation of reservoirs by States wrt India & Neighbours (China-India) ⑤ Lack in Datasharing by States wrt Dam safety ↓ — 7 rivers ⑥ Finance ⑦ Climate Change (SDG-13) ⑧ Development → Environ (Conflict) mnt → International Cooperation (Inflow forecasting system)	① Flood Damage assessment / Inspection → Realistic & scientific basis ② R & D and Training on Fm (Nodal agency wise) Pre monsoon, Post monsoon ARC RK — Basin & Sub Basin PM 10 points (Universities) ③ International cooperation SDG-12, Bilateral cooperation ④ Structural measures e.g. Anti-erosion works etc. → Dams & Land → Expert group tech: Hydrological + Hydrodynamic Models ⑤ Regulation of land use in flood prone areas → sci/end structures → Sendai ⑥ Categorisation & Prioritisation of structures in flood plains zoning ⑦ Byelaws & legal framework → Sendai, NDMP 2016 ⑧ Wetland Conservation ⑨ Documentation, Finance ↑ NDMP 2016 → PM 10 points, Data collecting +NGO → Yokohama PM 10 points, ARC report + NGO ⑩ Involvement of Corporate sector · CSR → ARC report, Sendai, NDMA 2009 NGO's ⑪ DPR's (Sustainable) ⑫ Flood Insurance (Minister Committee say) → Sendai → All points help in Disaster Risk Red
River Floods	Snowmelt/Glacial lake outbursts Inadequate capacity of rivers Silting of riverbeds Reduction in carrying capacity ↓ Erosion of beds & banks leading to change in River courses		⑤ Infra ⑥ Coastal wetlands, Estuaries ⑦ Fishsaylse ⑤ Infra ⑥ Economic impacts → Sendai Agony of survivors ⑧ Spread of epidemics → Waterborne Jaundice, Malaria, Typhoid ② ③	
Coastal Floods	Cyclones High Tides Tsunamis Sea levels ↑			
Urban Floods	Concrete Plastic waste Insufficient Drainage Encroachments Deforestation		⑦ DPR's	→ Yokohama

Why in news?

- Recently, The NITI Aayog released the 'National Multidimensional Poverty Index: A Progress Review 2023'.

About National MPI

- The project is aimed at deconstructing the Global MPI and creating a globally aligned and yet customised India MPI.
- It seeks to draw up comprehensive Reform Action Plans with the larger goal of improving India's position in the Global MPI rankings.
- NITI ayog is the nodal agency for the National MPI, ranking States and UTs based on their performance.

Methodology

- It captures overlapping deprivations in health, education and living standards to ascertain multidimensional poverty.
- Each of the specific parameters (under 3 broad categories) is assigned a value to calculate what is called a 'deprivation score'.
- The deprivation score is the sum of the weighted status of all the indicators for an individual – if it is more than 0.33, only then an individual is considered multidimensionally poor.
- The primary data source to arrive at these figures was National Family Health Survey-5 (NFHS-5).

Indicators and their weights

Category	Weight	Indicator	Weight
Health	$1/3$	Nutrition	$1/6$
		Child & Adolescent Mortality	$1/12$
		Maternal Health	$1/12$
Education	$1/3$	Years of Schooling	$1/6$
		School Attendance	$1/6$
Standard of Living	$1/3$	Cooking Fuel	$1/21$
		Sanitation	$1/21$
		Drinking Water	$1/21$
		Housing	$1/21$
		Electricity	$1/21$
		Assets	$1/21$
		Bank Account	$1/21$

Key Findings:

- India has seen a 9.89% decrease in multidimensionally poor people from 2015-16 to 2019-2021, with 13.5 crore people escaping poverty.
- The national MPI value has reduced from 0.123 in 2015-16 to 0.071 in 2019-21, indicating an improvement in the overall well-being of the population
- The rural areas witnessed the fastest decline in poverty from 32.59% to 19.28%, while the urban areas saw a reduction in poverty from 8.65% to 5.27%
- However, one in seven Indians is multidimensionally poor.

States performance

- BIMARU states - The number of people in poverty in rural areas witnessed the fastest decline (from 32.59 to 19.28%), owing to improvements in states like Bihar, UP, MP, Odisha, and Rajasthan.
- The number of states with less than 10% people living in multidimensional poverty doubled in the five years between 2016 and 2021.
- Except for Bihar, no other state in India has more than one-third of its population living in multidimensional poverty.

- The Union Home Minister Amit Shah to launch the 'Vibrant Villages Programme' in Arunachal Pradesh.

About the programme

- The Union Home Minister to inaugurate the 'Vibrant Villages Initiative' in Kibithoo, a village on India's border with China.
- The Vibrant Villages Programme is a centrally sponsored scheme that has identified 2,967 villages in 46 blocks of 19 districts **along the northern border in the states of Arunachal Pradesh, Sikkim, Uttarakhand, and Himachal Pradesh, as well as the Union Territory of Ladakh, for comprehensive development.**

Period and Funds
- According to a Home Ministry statement, the Government of India has approved the initiative, with Central components totalling Rs 4,800 crore, including Rs 2,500 crore specifically for road connectivity, **during the fiscal years 2022-23 to 2025-26.**

Scheme for Minor Rape Victims `Polity`

Why in news?
- The new scheme, is **launched under the aegis of the Nirbhaya scheme**.

About the scheme
- The scheme **aims to ensure both infrastructural and financial support for minor pregnant victims who have no means to fend for themselves.**
- The scheme aims to **facilitate immediate, emergency and non-emergency access** to a range of services including access to **education, police assistance, counseling, legal support, and insurance cover for the girl child victim** and her newborn under one roof. An amount of ₹74.1 crore has been allocated for the same. The Government has **leveraged the administrative structure of Mission Vatsalya** in collaboration with State governments and Child Care institutions [CCIs] to actualize this support to minor victims.
- The new scheme covers minor girls who are victims of penetrative sexual assault and aggravated penetrative sexual assault.
- The new scheme would be **available for girls up to the age of 18 years** at the level of childcare institutions and **for women up to 23 years at aftercare facilities.**

Service for minor rape victims
- Along with legal aid, the girls, who have been abandoned by their family due to forced pregnancy, either due to rape, or any other reason, and have no means to support themselves, will also be provided with safe transportation for attending court hearings.
- The medical benefits available to **beneficiaries of the scheme include maternity, neonatal and infant care.**
- Separate space will be allocated at the child care homes for the scheme's beneficiaries as her needs would be different from other children residing there.
- A **caseworker will be appointed for taking care of the rape victims** and separate funds shall be provided by the Centre to the childcare home sheltering the scheme's beneficiaries.

Digital Personal Data Protection Bill, 2023 `Polity`

Why in news?
- The Bill provides for the processing of digital personal data in a manner that recognizes both the rights of the individuals to protect their personal data and the need to process such personal data for lawful purposes and for matters connected therewith or incidental thereto.

Key objectives
- The Bill protects digital personal data (that is, the data by which a person may be identified) by providing for the following:
    - The obligations of Data Fiduciaries (that is, persons, companies and government entities who process data) for data processing (that is, collection, storage or any other operation on personal data);
    - The rights and duties of Data Principals (that is, the person to whom the data relates);and
    - Financial penalties for breach of rights, duties and obligations.

The Bill also seeks to achieve the following:
- Introduce data protection law with minimum disruption while ensuring necessary change in the way Data Fiduciaries process data;
- Enhance the Ease of Living and the Ease of Doing Business; and
- Enable India's digital economy and its innovation ecosystem.

The Bill is based on the following seven principles:

- The principle of consented, lawful and transparent use of personal data;
- The principle of purpose limitation (use of personal data only for the purpose specified at the time of obtaining consent of the Data Principal);
- The principle of data minimisation (collection of only as much personal data as is necessary to serve the specified purpose);
- The principle of data accuracy (ensuring data is correct and updated);
- The principle of storage limitation (storing data only till it is needed for the specified purpose);
- The principle of reasonable security safeguards; and
- The principle of accountability (through adjudication of data breaches and breaches of the provisions of the Bill and imposition of penalties for the breaches).

The Bill has few other innovative features:

- The Bill is concise and SARAL, that is, Simple, Accessible, Rational & Actionable Law as it—
- Uses plain language;
- Contains illustrations that make the meaning clear;
- contains no provisos ("Provided that…"); and
- Has minimal cross-referencing.
- By using the word "she" instead of "he", for the first time it acknowledges women in Parliamentary law-making.

The Bill provides for following rights to the individuals:

- The right to access information about personal data processed;
- The right to correction and erasure of data;
- The right to grievance redressal; and
- The right to nominate a person to exercise rights in case of death or incapacity.
- For enforcing his/her rights, an affected Data Principal may approach the Data Fiduciary in the first instance. In case he/she is not satisfied, he/she can complain against the Data Fiduciary to the Data Protection Board in a hassle-free manner.

The Bill provides for following obligations on the data fiduciary:

- To have security safeguards to prevent personal data breach;
- To intimate personal data breaches to the affected Data Principal and the Data Protection Board;
- To erase personal data when it is no longer needed for the specified purpose;
- To erase personal data upon withdrawal of consent;
- To have in place grievance redressal system and an officer to respond to queries from Data Principals; and
- To fulfill certain additional obligations in respect of Data Fiduciaries notified as Significant Data Fiduciaries, such as appointing a data auditor and conducting periodic Data Protection Impact Assessment to ensure higher degree of data protection.
- The Bill safeguards the personal data of children also.
- The Bill allows a Data Fiduciary to process the personal data of children only with parental consent.
- The Bill does not permit processing which is detrimental to well-being of children or involves their tracking, behavioural monitoring or targeted advertising.

The exemptions provided in the Bill are as follows:

- For notified agencies, in the interest of security, sovereignty, public order, etc.;
- For research, archiving or statistical purposes;
- For startups or other notified categories of Data Fiduciaries;
- To enforce legal rights and claims;
- To perform judicial or regulatory functions;
- To prevent, detect, investigate or prosecute offences;
- To process in India personal data of non-residents under foreign contract;
- For approved merger, demerger etc.; and
- To locate defaulters and their financial assets etc.
- The key functions of the Board are as under:

- To give directions for remediating or mitigating data breaches;
- To inquire into data breaches and complaints and impose financial penalties;
- To refer complaints for Alternate Dispute Resolution and to accept Voluntary Undertakings from Data Fiduciaries;
- To advise the Government to block the website, app etc. of a Data Fiduciary who is found to repeatedly breach the provisions of the Bill.

Issues in implementation

- **Wide-ranging Exemptions:** The Bill provides extensive exemptions, **especially to government agencies, which may lead to potential misuse or overreach.**
- **Dilution of Data Protection Board's Powers:** **Centralisation of power and potential bureaucratic delays** could impede the efficacy of the Board.
- **Amendment Concerns: Proposed changes to the Right to Information Act, 2005 and overriding provisions of the IT Act, 2000** have been sources of contention. Specifically, the potential erosion of public interest safeguards when sharing personal information of government officials and the shift from compensation to ex-gratia payments **can complicate redressal for data breaches.**
- **International Standards and Comparisons:** With stringent data protection laws in place globally, like the EU's GDPR, **aligning India's Bill with international standards while catering to domestic needs could be challenging.**
- **Operational Challenges for Companies:** Many companies **might have to overhaul their data handling processes,** leading to potential business disruptions and increased costs.
- **Public Awareness: Ensuring citizens are fully aware of their rights and mechanisms** to exercise them will be a significant undertaking.

Intellectual Property Rights Policy Management Framework — Polity

Why in news?

- Ministry of Commerce & Industry has issued clarification regarding Intellectual Property Rights Policy Management framework which covers 8 types of intellectual property rights. National IPR Policy 2016 encompasses all IPRs into a single vision document setting in place an institutional mechanism for implementation, monitoring and review of IP laws.

About the framework

- There are following types of intellectual property rights covered under Intellectual Property Rights Policy Management (IPRPM) framework: (i) Patents, (ii) Trade mark, (iii) Industrial Designs, (iv) Copyrights, (v) Geographical Indications, (vi) Semiconductor Integrated Circuit Layout Design, (vii) Trade Secret, and (viii) Plant Varieties.
- **Types of intellectual property rights covered:** (i) Patents, (ii) Trade mark, (iii) Industrial Designs, (iv) Copyrights, (v) Geographical Indications, (vi) Semiconductor Integrated Circuit Layout Design, (vii) Trade Secret, and (viii) Plant Varieties.
- The details on objectives and activities undertaken since adoption of the policy is given below:
  - Appropriate amendment in IPR Laws and Rules – improving procedural requirements in processing of applications to speed up grant and disposal.
  - Modernisation & Digitisation of IP offices – improvement in functioning and performance of IP Offices as well as streamlining workflow processes.
  - Scheme for Facilitating Start-Ups Intellectual Property Protection (SIPP) to encourage filling of Patent applications by Startups.
  - Reduction in filing Fees for Start-ups, MSMEs, and educational Institutes to encourage Patent filling. Expedited Examination for certain category of applicants, such as Start-ups, small entities, women inventors for expeditious grant of Patents.
  - Awareness initiatives and Programs for stakeholders with an intent to inculcate importance of protecting their IPR at an early stage in the business development cycle.
  - National Intellectual Property Awareness Mission (NIPAM), a flagship program to impart IP awareness and basic training in educational institutes.
  - National Intellectual Property (IP) Awards are conferred every year to recognize and reward the top achievers comprising individuals, institutions, organizations and enterprises, for their IP creations and commercialization.

- Patent Facilitation Programme has been revamped to scout patentable inventions and provide full financial, technical and legal support in filing and obtaining patents.
- Expand Knowledge Capacity & Skill Building: To promote the study, research, and development of IPR in higher educational institutions, IPR chairs have been set up across the country under the Scheme for Pedagogy & Research in IPRs for Holistic Education and Academia (SPRIHA). Currently, 37 IPR Chairs are incorporated. These Chairs have facilitated 146 Patent filings and 424 Patents registered, 215 IP works published, 1373 total IP Programs conducted, 238 Pedagogy activities undertaken during 2020-21 and 2022-23.
- Commercialization of IP: Technology Innovation Support Centres (TIS) have been set us in various Central and State Universities and State Council for Science & Technology across the country for supporting IPR education, boosting IP filings and enhancing IP commercialization.

Right Area	Legal Provision	Subject	Term of Protection
Patent	Patent Act, 1970 & Patent Rules, 2003 amended in 2014, 2016, 2017, 2019, 2020, and 2021	Must qualify requirements of being novel, Inventive, and having industrial utility	20 years
Trademarks	Trademark Act 1999 & Trademark Rules 2017	Protects brand name, logo, design for a business or commercial enterprise	10 years; renewed for 10 years on payment of additional fees
Designs	Designs Act 2000 & Designs (Amendment) Rules 2021	New or original designs (ornamental/visual appearance discernible to the human eye) which can be replicated industrially	10 + 5 years
Copyrights	Copyrights Act 1957 & Copyrights Rules 2013 amended in 2021	Creative, artistic, literary, Musical, and audio-visual works	Authors – Lifetime + 60 years; Producers – 60 years Performers – 50 years
Geographical Indications	Geographical Indications Act 1999 & GI Rules 2002 amended in 2020	Goods bearing unique characteristics due to geographical linkage – agricultural goods, natural goods, manufactured goods, handicrafts, and foodstuff	10 years, renewed for 10 years on payment of additional fees
Semiconductor Integrated Circuits Layout Design	Semiconductor Integrated Circuits Layout Design Act 2000 & Rules 2001	A layout of transistors and other circuitry elements including lead wires connecting such elements and expressed in any manner in semiconductor integrated circuits	10 years
Trade Secret	Common Law approach covered through IPC, Contract Act, IP Act, and Copyright	Confidential information having commercial value	Till the time confidentiality is safeguarded
Plant Varieties	Protection of Plant Varieties and Farmers Rights Act (PPVFRA), 2001	Traditional varieties and landraces, all developed varieties (non-traditional and non-landrace) in trade/use for older than 1 year and not older than 15 years or 18 years (in case of trees and vines), and new plant varieties	Varies depending on the type of variety

Cantonment boards

↳ British era concept of designating areas that primarily accomodate the military pop. & their installations

* Proclaimed under : Cantonments act 2006
* Control : Governed & controlled by C. govt.
* Under : Ministry of defence
* Services provided : Sanitation, Primary edu., street lighting, water supply, maintenance of roads, bridges & public hospitals

Cantonments	Military stations
→ civilian areas under control of military → notified by act of Parli. (Cantonment act 2006)	→ Purely military - only military personnel & their families reside → created by an executive order by govt. (no statutory backing)

Const.

* Entry 3 of Union list (Schedule VII)
  ↳ urban self - govt. of Cantonments & housing accom. within them is subject matter of Union of India

* Formed to : oversee municipal adm. for civilian pop. in Cantonment area. Ex: Secunderabad can. board

* ## Issues

Strict restrictions on construction, road use, common area occupation	Civilians face challenges in obtaining home loans & govt. schemes → Ex: PM Away Yojana (housing for all in urban areas) (infra. dev.)	basic renovations require multiple permissions	limited trade & business activity & practically no industry (source: Sec. Cantonment board portal)
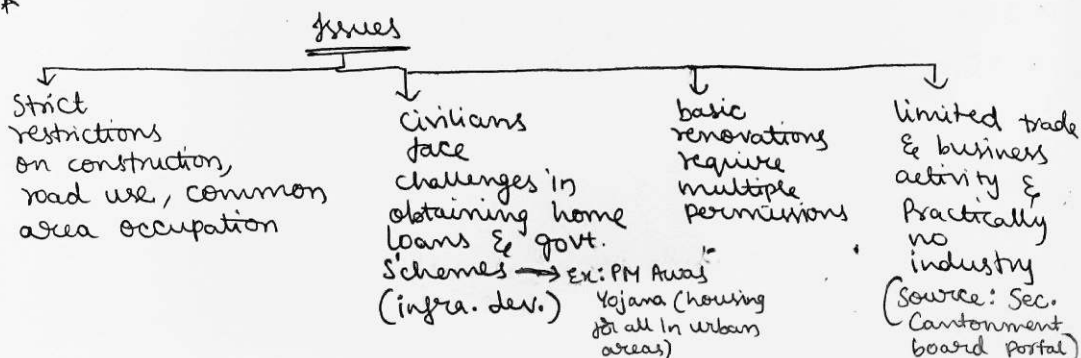
* ## Recent reforms

① Govt. considering abolition of canton. areas (as civilians have issues with restrictions & opportunities)
  ↳ [Army] → against this idea - as it would impact training & adm. of army & security hazard
  • also ↑ chances of encroachments if restrictions are ↓

② 2023 - Mo Defence issued notification for abolition of Cantonment in HP
  ⇒ Ministry planned to disband all cantonments
  → military areas
    ↳ 'exclusive military stations'
  → cantonment (other than military station)
    ↓
    merged with neighbouring Urban local body (ULB)

- Seperation will help military commanders relieve from civilian functions & decision-taking decisions that affect local civilian pop.
- would avoid army officers getting involved in local politics
- civilians - relief from restrictive regulations
- restrictions ↓, decision-making ↑, infra. dev. ↑, urbanisation ↑

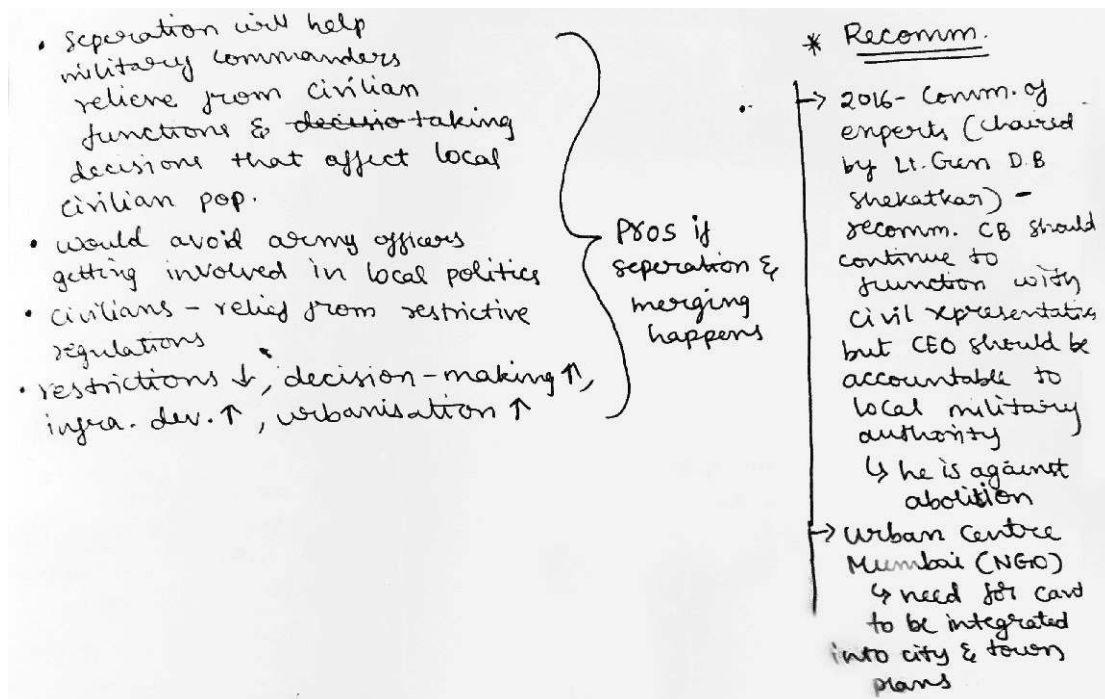Pros if seperation & merging happens

* Recomm.
→ 2016- Comm. of experts (chaired by Lt. Gen D.B Shekatkar) - recomm. CB should continue to function with civil representative but CEO should be accountable to local military authority
  ↳ he is against abolition
→ Urban Centre Mumbai (NGO)
  ↳ need for card to be integrated into city & town plans

Panchayat Development Index   Polity

- The Union Minister of State for Panchayati Raj released a report on the Panchayat Development Index.

Panchayat Development Index (PDI)
- It is a **new initiative by the Ministry of Panchayati Raj to assess the progress of local development** through panchayats, the rural self-government institutions in India.
- The PDI is **based on the concept of Localization of Sustainable Development Goals (LSDGs),** which aims to align the national and global development goals with the local context and priorities.
- It is designed to be a compact and comprehensive statistical tool that captures various aspects of development at the panchayat level.
- It **covers nine themes that reflect the vision of an ideal village**, such as;
  - Poverty-free
  - Child-friendly
  - Clean and green
  - Socially just and secure
  - Women-friendly
  - Healthy
  - Water-sufficient
  - Self-sufficient
  - Well-governed
- The PDI takes into account the inputs, outputs, and outcomes of development interventions in each theme.

Methodology
- The PDI is **calculated by aggregating the scores of indicators under each theme** and then normalizing them on a scale of 0 to 100.
- The **PDI score reflects the level of development achieved by a panchayat** in comparison to other panchayats in the same district, state, or country.
- The PDI categorizes the panchayats into four grades based on their scores:
  - A+   (above 90%)
  - A   (75-90%)
  - B   (60-75%)
  - C   (40-60%)
  - D   (below 40%)

Significance
- The PDI has several applications for policymaking, planning, monitoring, evaluation, and learning.
- It can **help identify the strengths and weaknesses of panchayats in different themes and indicators**, and suggest areas for improvement.
- It helps allocate resources and incentives based on performance and needs. Moreover, it can facilitate peer learning and best practice sharing among panchayats.
- It can **serve as a tool for citizen engagement and social accountability**, as it provides transparent and accessible information on the status of local development.

Trafficking laws in India   Polity

Why in news?
- A plan to help border States and UTs construct infrastructure for the rehabilitation of trafficking victims has been approved by the center.

Status of Trafficking in India
- India is both a destination and a source for human trafficking. Women and girls are primarily trafficked from Nepal, Bangladesh, and Myanmar, where they are lured by the promise of better jobs and living conditions.
- Minor girls or young women make up the majority of those who are trafficked, and once they arrive in India, they are sold and forced into commercial sex work.
- In 2021, data from the NCRB indicated that up to 3912 female victims of human trafficking were rescued. Odisha was rescued with the most victims, 1290, followed by Maharashtra with 890, Telangana with 796, & Delhi with 509.

Laws governing anti-trafficking crimes
- The **Immoral Traffic (Prevention) Act, 1956 (PITA)** was enacted with the intention of putting an end to immoral trafficking and sex work. It was changed twice, once in 1978 and once in 1986.
- The act of child marriage is illegal and punishable under the **2006 Prohibition of Child Marriage Act**.
- The **Child Labour (Prohibition and Regulation) Act of 1986** regulates the working conditions of children in other industries and prohibits children from participating in certain occupations.
- The **Bonded Labour System (Abolition) Act, 1976** precludes frameworks of work where individuals, including youngsters, work under states of bondage to take care of obligation, and furthermore gives a structure to restoring delivered workers.
- The **Juvenile Justice (Care and Protection of Children) Act 2015,** which administers regulations connecting with children alleged and viewed as in struggle with regulation.
- The **Transplantation of Human Organs and Tissues Act, 1994,** makes business managing in human organs a culpable offense.
- The **Protection of Children from Sexual Offences (POCSO) Act of 2012** aims to stop children from being sexually abused for money.
- In 2007, India established Anti-Human Trafficking Units (AHTUs).
- Section 370 of the Indian Penal Code, which deals with buying and selling any person as a slave, was revised in 2013 to include the concept of human trafficking. AHTUs are tasked with "addressing the existing gaps in the law enforcement response," "ensuring a victim-centric approach" that ensures the "best interest of the victim/survivor" and prevents "secondary victimization/re-victimization of the victim," and developing databases on traffickers.

Performance Grading Index   Polity

Why in news?
- Ministry of Education released a report on Performance Grading Index 2.0 for States/UTs for the year 2021-22.

About index
- The Indian Education System is one of the largest in the world with about 14.9 lakh schools, 95 lakh teachers, and nearly 26.5 crore students from varied socio-economic backgrounds.
- The Performance Grading Index (PGI) is a tool to provide insights on the status of school education in States and UTs including key levers that drive their performance and critical areas for improvement.

- **Department of School Education and Literacy** (DoSEL) has designed the PGI to catalyse transformational change in the field of school education.

Objective
- The prime objective of PGI is to **promote evidence-based policy making and highlight course correction to ensure quality education for all.**

Methodology
- The PGI evaluation classifies States and UTs into grade/ levels, as opposed to ranking.
- Grading allows several States and UTs to be considered at the same level, eliminates the phenomenon of one improving only at the cost of others, thereby casting a stigma of underperformance on the latter, though, in effect they may have maintained status quo or even performed better than earlier.

Categories and Domains
- The PGI is structured in two categories, namely, Outcomes, and Governance & Management and comprises 70 indicators
- These categories are further **divided into 5 domains, viz.,**
  - Learning Outcomes (LO),
  - Access (A),
  - Infrastructure & Facilities (IF),
  - Equity (E) and
  - Governance Process (GP).
- The **points assigned to indicators are either 10 or 20,** whereas points assigned to each Domain ranges from 80 to 360.
- The States and UTs have been assessed on the basis of their performance against the benchmark for each indicator.
- Following the same approach of State PGI in the previous years, States/ UTs are graded.

National e-Governance Service Delivery Assessment   Polity

Why in news?
- Department of Administrative Reforms & Public Grievances (DARPG) has released the sixth edition of National e-Governance Service Delivery Assessment (NeSDA) – Way forward Monthly Report for States/UTs, which provides a detailed overview of status of e-service delivery across States/UTs.

About NeSDA Portal:
- The NeSDA (National e-Governance Service Delivery Assessment) framework was launched in August 2018 to evaluate the effectiveness of e-Governance service delivery mechanisms.
- The Department has released two editions of the NeSDA study: NeSDA 2019 and NeSDA 2021.
- The framework is based on the Online Service Index (OSI) of the UN eGovernment Survey.
- It covers six sectors: Finance, Labour & Employment, Education, Local Government & Utilities, Social Welfare (including Agriculture & Health), and Environment (including Fire) sectors.

Key Findings and Impact:
- The NeSDA study has led to improvements in the country's e-Governance landscape, resulting in the following key takeaways:
- Increase in e-Service Delivery.
- Rise in the use of Integrated/Centralized Portals for the delivery of e-Services.
- Improvement across assessment parameter scores.

Biennial Assessment:
- The Department conducts the NeSDA study every two years.
- It assesses the effectiveness of e-Governance service delivery in States, Union Territories (Uts), and focus Central Ministries.
- The study helps respective governments enhance the delivery of citizen-centric services and facilitates the sharing of best practices across the country.

Why in news?
- Recently, the **third edition** of the report titled '**Export Preparedness Index (EPI) 2022**' for States/UTs of India was released

About the Report:
- **The report is released by** NITI Aayog
- **Aim:** To evaluate the export performance and pending potential of the Indian States and Union Territories.
- **Export Preparedness Index (EPI)** is a comprehensive tool which measures the export preparedness of the States and UTs in India.
- The index undertakes a **comprehensive analysis** of States and UTs across export-related parameters in order to identify their strengths and weaknesses.
- Developing the methodology for the index is an evolving process which constantly incorporates stakeholder feedback.

4 Pillars are
- **Policy Pillar:** This pillar looks at how well states and UTs have adopted policies that support exports at the state and district levels, and how effective their institutional frameworks are for implementing those policies.
- **Business Ecosystem:** This pillar evaluates the quality of the business environment in states and UTs, including the availability of business-supportive infrastructure and the connectivity of transport networks.
- **Export Ecosystem:** This pillar examines the state of export-related infrastructure in states and UTs, as well as the trade support services they provide to exporters, and the level of research and innovation activities that foster export competitiveness.
- **Export Performance:** This pillar is an outcome-based indicator that assesses the growth of exports from states and UTs over the previous year, and their degree of export diversification and global presence.

Highlights of the Report
- The EPI 2022 Report analysed the export readiness of different states in India and found that the **coastal states, such as Tamil Nadu, Maharashtra, Karnataka and Gujarat, were the best performers in all categories.**
- These states have taken proactive steps to create export-friendly policies and plans at the state and district levels. However, the report also pointed out that many states still need to improve their business and export environment to boost their export potential.
- The report suggested that **state governments should design solutions that suit their specific challenges and opportunities in the export sector**. They should also leverage their unique products and promote them in the global market.
- **States should invest in research and development to foster innovation and enhance their export efficiency and diversification**. By identifying new markets and products based on their competitive advantage, they can increase their share in global trade.

Performance of State/UTs
- The EPI 2022 report has ranked **Tamil Nadu as the top performer among all States/UTs** with a score of 80.89 out of 100. Tamil Nadu has scored high on all four pillars of the index, especially on policy and business ecosystem.
- Tamil Nadu is followed by Maharashtra, Karnataka and Gujarat as the top four performers in the index.
- Among UTs, Delhi has emerged as the top performer followed by Chandigarh and Puducherry (55.64).
- Among landlocked states, Rajasthan has topped the index followed by Telangana and Haryana.
- Among Himalayan states, Uttarakhand has ranked first followed by Himachal Pradesh and Jammu & Kashmir.
- Among northeastern states, Assam has secured the top position followed by Tripura and Manipur.

Why in news?
- Addressing the G20 Energy Ministerial meeting in Goa Prime Minister recently announced that India has commenced the rollout of 20% ethanol-blended petrol this year and the country's aim is to cover the entire nation by 2025.

About Ethanol blending
- The **Ethanol Blended Petrol Programme** was launched in 2003 with an aim to promote the use of renewable and environmentally friendly fuels and reduce **India's import dependence for energy security**.
- Starting with **5% blending**, the government has set a target of **10% ethanol blending** by 2022 and **20% blending (E20) by 2030.**
- The programme is implemented in accordance with the **National Policy on Biofuels**.
- Under this programme, **oil marketing companies (OMCs)** will procure ethanol from domestic sources at prices fixed by the government.
- Till 2018, only sugarcane was used to derive ethanol. Now, the government has extended the ambit of the scheme to include food grains like **maize, bajra, fruit and vegetable waste**, etc. to produce ethanol.
- This move helps farmers gain additional income by selling the extra produce and also broadens the base for ethanol production in the country.

India's plan to achieve E20 target by 2025
- Diversified Feedstocks –In addition to sugarcane many mills/distilleries now use various feedstocks such as B-heavy molasses, direct sugarcane juice, rice, maize, and other grains.
- Increased Production - The country's ethanol supply to oil marketing companies (OMCs) rose significantly from 38 crore liters in 2013-14 to 559 crore liters in 2022-23. This growth indicates a robust production system in place.
- Higher Yields from Grains - Grains give higher ethanol yields compared to molasses. For instance, rice produces 450-480 liters from one ton, while maize gives 380-400 liters. These higher yields can boost overall ethanol production.
- Consistency in supply of ethanol throughout the year as some companies have innovated technologies where distilleries operate on multiple feedstocks throughout the year.

National Policy on Biofuels:
- India's **Ministry of Petroleum and Natural Gas** published its "**National Policy on Biofuels**" in 2018 and further amended it in June 2022.
- The policy's objective is to reduce the **import of petroleum products** by fostering domestic biofuel production.
- The recent amendment has changed the following, selected elements in the **2018 National Policy on Biofuels:**
- Advance the deadline to reach the **blending target of 20% bioethanol in petrol**, from 2030 to 2025-26.
- Make additional feedstock eligible for the production of biofuels.
- The policy supersedes **India's 2009 National Biofuel Policy**. Building on the amended National Policy on Biofuels, India published a "**Roadmap for Ethanol Blending in India 2020-25**".

GM Crops

Economy

Why in news?
- GEAC approval for gm mustard(Dhara Mustard Hybrid-11 (DMH-11).

What are gm seeds?
- Conventional plant breeding: small Genes
- Genetic engineering:alien gene
- Ex:1. gm cotton(Bacillus thuringiensis)-2002
- 2.gm brinjal
- GM SEEDS ACROSS WORLD:maize,canola,soybean

Who approves Seeds?
- Genetic engineering appraisal committee.

- Ministry: environment, forest and climate change
- Responsible for:
  - appraisal of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
  - for appraisal of proposals relating to release of genetically engineered (GE) organisms and products into
- the environment including experimental field trials.

STATUS OF GM CROPS TILL NOW:
- Till now only cotton- commercial cultivation
- Now mustard- 2nd crop [Genes: soil bacterium called Bacillus amyloliquefaciens.]

SIGNIFICANCE OF GM MUSTARD
- Country's 1st transgenic food crop
- self-sufficient in cooking oils(India produces only 8.5-9 million tonnes (mt) of edible oil annually,
- imports:14- 14.5 million tonne, foreign exchange of$18.99 billion 2022)

CONCERNS AGAINST GM MUSTARD
- Displacement of labour
- Undermining population of honey bees
- Regulation: environment protection act
- Unapproved gm variant : 1lakh fine and 5 yr jail term
- **Benefits of genetically modified seeds**
  1. Decrease cost of weeding(gm cotton)
  2. Cost of pesticides.
  3. Increase production, income of farmer
  4. Follows malthusian theory5. Nutritious food
  6. Desirable traits
- **Challenges of gm seeds**
  - Disruption of ecosystem and biodiversity
  - Foods with allergic or toxic reaction
  - Increased cost of cultivation
  - unintended genetic modif

Farmer Distress Index — Economy

Why in news?
- The 'Farmers Distress Index' is being developed by the Central Research Institute for Dryland Agriculture (CRIDA) in India. It will serve as an early warning system for addressing farmers' distress and improving their well being.

Farmers' Distress Index
About
- The farmers' distress index is a **comprehensive tool designed to monitor and assess the level of hardship** and suffering faced by farmers in different regions.
- By using multiple sources of data and conducting standardized phone interviews, the index aims to identify early warning signs of distress, which can then be used by various stakeholders to take proactive steps and prevent or mitigate the adverse effects on farmers.
- It uses multiple data sources to identify early warning signs of distress in order to take proactive steps for preventing/mitigating distress.
- By providing a numerical representation of distress levels, the **index helps policymakers, government agencies**, NGOs, and other stakeholders to prioritize their efforts and resources to support vulnerable farmers effectively. **Early identification of distress signs enables timely intervention,** potentially reducing the incidence of farmer suicides and ensuring the overall well-being of agricultural communities.

Key indicators to evaluate the level of distress

- **Exposure to climatic events:** It assesses the impact of droughts, floods, crop failure due to pest attacks, and livestock deaths on farmers.
- **Debt Burden:** It evaluates the extent of the financial burden and debt-related issues faced by farmers, which is often a significant factor contributing to distress.
- **Adaptive capacity**: It considers the ability of farmers and local governments to cope with adverse situations through various schemes and support mechanisms.
- **Landholding and irrigation facilities**: Landholding size and access to irrigation facilities can significantly impact a farmer's ability to withstand distress.
- **Sensitivity and adaptation strategies**: It looks at the farmer's capacity to adapt and implement strategies such as growing contingency crops to mitigate the impact of crop failure.
- **Triggers for immediate distress**: Health- related expenditures and other immediate triggers for distress are considered to identify vulnerable farmers.
- **Socio-psychological factors**: This indicator takes into account the psychological and social impacts of distress on farmers.

Methodology

- Based on the data collected and the assessment of the indicators, **each farmer is assigned a distress score between 0 and 1**. The scale ranges from 0 (no distress) to 1 (extreme distress).
- Distress levels are further categorized into different ranges: a score between 0 and 0.5 indicates low distress, between 0.5 and 0.7 indicates moderate distress, and above 0.7 indicates severe distress.

Gati Shakti Infrastructure Platform   Economy

Why in news?

- The government is working on a mechanism to share data with industry and potential investors about multi-modal connectivity and other infrastructure captured on the PM Gati Shakti platform.

About platform

- The PM Gati Shakti platform is a significant initiative by the Indian government **aimed at enhancing multi-modal connectivity** and improving physical and social infrastructure across the country.
- It serves as a **comprehensive repository of geospatial data**, providing valuable information about various infrastructure projects.
- The **Network Planning Group (NPG) operates within the platform** and plays a crucial role in evaluating and facilitating large central infrastructure projects.
- It was launched in 2021 as a National Master Plan for Multi-modal Connectivity.
- It is part of the government's vision to invest Rs111 lakh crore in infrastructure over the next five years under the National Infrastructure Pipeline.

Features

- The platform **integrates multiple layers of geospatial data**, offering a comprehensive view of various infrastructure projects, their locations, and connectivity.
- PM Gati Shakti **emphasizes multi-modal connectivity**, which means it focuses on integrating different modes of transportation like roads, railways, waterways, and airways to create a seamless and efficient transportation network.
- The NPG is responsible for **evaluating and facilitating infrastructure projects**, ensuring they align with the country's development goals and are executed effectively.
- The government is now working on a mechanism to **share data from the platform with the industry and potential investors,** enabling them to make informed decisions about investments and business opportunities.

Significance

- PM Gati Shakti aims to **boost infrastructure development** across the country, which is crucial for economic growth, job creation, and improving the quality of life for citizens.
- By sharing infrastructure data with industry and investors, the platform can **attract private sector participation and foreign investments** in key projects, leading to accelerated development.
- Emphasizing multi-modal connectivity can lead to the **seamless movement of goods and people**, reducing logistics costs and improving overall efficiency.

Why in news?
- Delhi HC rejects PepsiCo's appeal over potato patent

Case Details
- The patent is for the potato plant variety FL-2027 (commercial name FC-5).
- Pepsi's North America subsidiary Frito-Lay has the patent until October 2023.
- For India, PIH has patented FC-5 until January 2031 under the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001.
- The FC-5 variety, used to make Lay's chips, is grown under a contract farming deal, by 12,000 farmers in Gujarat's Sabarkantha district.
- PIH has a buyback agreement with some Gujarat farmers.
- It has now accused 11 farmers of illegally growing, producing and selling the variety "without permission of PIH".
- The government reportedly held out-of-court settlement talks with the company, which eventually announced the withdrawal of cases.

Farmers argument
- Farmers say that the agreement was only that PIH would collect potatoes of diameter greater than 45 mm.
- Farmers would store the smaller potatoes for sowing next year.
- Some of the other accused farmers said they got registered seeds from known groups and farmer communities.
- They had been sowing these for the last four years or so, and had no contractual agreement with anyone.
- They said they learnt they were growing a registered variety only when they got a court notice.

Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001
- Enacted by India in 2001 **adopting sui generis system**.
- It is in conformity with **International Union for the Protection of New Varieties of Plants (UPOV)**, 1978.
- The aim of the act is the establishment of an effective system for the **protection of plant varieties**, the **rights of farmers** and **plant breeders** and to encourage the development of new varieties of plant.
- The act also establishes **Protection of Plant Varieties and Farmers' Rights Authority** under the **Ministry of Agriculture and Farmers Welfare.**
- The major function of Authority includes
  - Registration of new plant varieties;
  - Documentation of varieties registered;
  - Preservation of plant genetic resource;
  - Maintenance of the National Register of Plant Varieties and
  - Maintenance of National Gene Bank (for conserving seeds of registered varieties).
- The legislation recognizes the contributions of both commercial plant breeders and farmers in plant breeding activity and also provides to implement TRIPs in a way that supports the specific socio-economic interests of all the stakeholders including private, public sectors and research institutions, as well as resource-constrained farmers.

Rights under the Act
- **Breeders' Rights**: Breeders (Seed Producers) will have exclusive rights to produce, sell, market, distribute, import or export the protected variety.
  - A breeder can exercise for civil remedy in case of infringement of rights
- **Researchers' Rights**: Researcher can use any of the registered variety under the Act for conducting an experiment or research.
  - Researchers can use the initial source of variety for the purpose of developing another variety but repeated use needs the prior permission of the registered breeder.
- **Farmers' Rights**: A farmer who has evolved or developed a new variety is entitled to registration and protection in like manner as a breeder of a variety.
  - A farmer can save, use, sow, re-sow, exchange, share or sell his farm produce including seed of a variety protected under the PPV&FR Act, 2001

- However, the farmer shall not be entitled to sell branded seed of a variety protected under the PPV&FR Act, 2001.
- There is also a provision for compensation to the farmers for non-performance of variety.
- The farmer shall not be liable to pay any fee in any proceeding before the Authority or Registrar or the Tribunal or the High Court under the Act.
- Farmers are eligible for recognition and rewards for the conservation of Plant Genetic Resources of land races and wild relatives of economic plants.

International Union for the Protection of New Varieties of Plants (UPOV)

- The International Union for the Protection of New Varieties of Plants (UPOV) is an intergovernmental organization with headquarters in Geneva (Switzerland).
- UPOV was established by the International Convention for the Protection of New Varieties of Plants. The Convention was adopted in Paris in 1961 and it was revised in 1972, 1978 and 1991.
- UPOV's mission is to provide and promote an effective system of **plant variety protection**, with the aim of encouraging the development of new varieties of plants, for the benefit of society.
- The UPOV Convention provides the basis for members to **encourage plant breeding** by granting breeders of new plant varieties an intellectual property right: **the breeder's right**.
- In the case of a variety protected by a breeder's right, the authorization of the breeder is required to propagate the variety for commercial purposes. The **breeder's right is granted by the individual UPOV member**
- Only the breeder of a new plant variety can protect that new plant variety. It is not permitted for someone other than the breeder to obtain protection of a variety.
- There are no restrictions on who can be considered to be a breeder under the UPOV system: a breeder might be an individual, a farmer, a researcher, a public institute, a private company etc.
- **India is not a member**.

India and Efta Free Trade Agreement Economy

Why in news?
- India and the four European Free Trade Association(EFTA)states—Iceland, Liechtenstein, Norway and Switzerland— have recently expressed their willingness to resume their negotiations towards a Trade and Economic Partnership Agreement (TEPA).

European Free Trade Association (EFTA)
- It is a regional trade organization that consists of **four member states: Iceland, Liechtenstein, Norway and Switzerland**.
- It was established in 1960 as an alternative to the European Economic Community (EEC), which later became the European Union (EU).
- It aims to **promote free trade and economic integration among its members**, as well as with other countries around the world.
- One of the main instruments of the EFTA's external trade policy is the negotiation of free trade agreements (FTAs) with third countries.
- The EFTA's FTAs are compatible with the rules and principles of the World Trade Organization (WTO) and complement the bilateral agreements that the EFTA states have with the EU.

Areas of interest for EFTA negotiations
- **Industrial goods**
    - EFTA seeks to **eliminate tariffs and other barriers** to trade for industrial goods, including fish and other marine products, as well as processed agricultural products.
    - EFTA also aims to ensure effective rules of origin, customs procedures, technical regulations, standards and conformity assessment procedures.
- **Services**
    - EFTA seeks to **improve market access and national treatment for service providers** in various sectors, such as financial services, telecommunications, transport, tourism, professional services & environmental services.
    - EFTA also aims to ensure a high level of protection for intellectual property rights, including geographical indications.

- **Investments**
  - EFTA seeks to **establish a comprehensive** **framework for the promotion and protection** **of investments**, including provisions on national treatment, most-favoured-nation treatment, fair and equitable treatment, expropriation and compensation, transfers, dispute settlement and corporate social responsibility.
- **Government procurement**
  - EFTA seeks to **ensure transparency, non- discrimination and fair competition in government procurement** markets, as well as mutual access to procurement opportunities at central and sub-central levels of government.

E-Way Bill Economy

Why in news?
- The GST Council, proposed to **make an e-way bill** **mandatory for the intra-state movement of** **gold, gold jewellery and precious stones.**

About e-way bill
- An e-way bill is an electronic document that contains details of the goods being transported from one place to another. It is generated online through a portal or an app by the supplier, transporter or recipient of the goods.
- It is mandatory for inter-state and intra-state movement of goods worth more than Rs 50,000 in India.
- The GST e-way bill **became mandatory from April 1, 2018 for all inter-state transport of goods valued above Rs 50,000**.
- Starting from **April 15, 2018**, it was **made compulsory for** the **moving goods within a state** in a phased manne

Features of E-way bill
- It is valid for a specified period depending on the distance to be covered by the goods.
- It can be cancelled or modified within 24 hours of generation if the goods are not transported or there is a change in the details.
- It can be extended before or after its expiry if there is a delay in transportation due to unforeseen circumstances.
- It can be verified by the tax authorities or the enforcement agencies through a QR code or a unique number.
- It can be integrated with the vehicle tracking system or the RFID tags for real-time monitoring of the goods.
- It is generated for the movement of goods worth more than Rs. 50,000. However, **in the** **case of gold, gold** **jewellery and precious** **stones it must be more than Rs 2 lakh.**

Internationalisation of Rupee Economy

Why in news?
- The Reserve Bank of India (RBI) and the Central Bank of the UAE signed an agreement to establish a local currency settlement system to promote the use of the Indian rupee and the UAE dirham bilaterally.

Internationalisation of the rupee
- Internationalisation of the rupee refers to the **process of increasing the use and acceptance** **of the rupee in international transactions,** such as trade, investment, borrowing, lending, and reserve holding.
- It involves **enhancing the liquidity and depth of the rupee market**, promoting the use of rupee-denominated instruments and contracts, and facilitating the settlement of cross-border transactions in rupees.
- It also implies that the rupee becomes a reserve currency for other countries, which means that they hold a portion of their foreign exchange reserves in rupees.

Steps taken to Promote Rupee
- The Reserve Bank of India (RBI) and the government have taken several measures to promote the internationalisation of the rupee over the years.
- **Liberalising the current account convertibility** **of the rupee** allows residents and non- residents to freely exchange rupees for foreign currencies for trade and other current account transactions.
- **Allowing non-residents to invest in rupee- denominated debt instruments** issued by the government, corporates, and banks, subject to certain limits and conditions.
- Establishing offshore centres for trading and clearing of rupee derivatives, such as Singapore, London, Dubai, and Hong Kong, to facilitate hedging and risk management by foreign investors and borrowers.

- **Signing currency swap agreements with various countries**, such as Japan, China, UAE, Sri Lanka, etc., to provide liquidity support to each other in times of need.
- **Issuing sovereign bonds denominated in foreign currencies**, such as Masala bonds (in US dollars), Samurai bonds (in Japanese yen), etc., to diversify the sources of external financing and create a benchmark for other Indian issuers.

Benefits of Internationalization:

- **Smoother International Trade:** Internationalization of the rupee allows parties to transact directly in rupees, eliminating the need for currency conversions. This can simplify cross-border trade and reduce transaction costs.
- **Increased Efficiency:** By using the rupee for international transactions, businesses can avoid the risks and costs associated with currency fluctuations and exchange rate conversions.
- **Boost to Indian Economy:** Internationalization of the rupee can enhance the status of the Indian economy and increase its influence in global financial markets.
- **Reduced Dependence on Foreign Currencies:** By promoting the use of the rupee in international transactions, India can reduce its reliance on foreign currencies and strengthen its economic independence.

Internationalisation Approach:

- **Increased Cross-Border Transactions:** Internationalization involves encouraging and facilitating more cross-border transactions involving the rupee.
- **Capital Account Convertibility:** Internationalization of the rupee often involves adopting full capital account convertibility, which allows for the free movement of capital between countries.
- **Promoting Acceptance:** Efforts are made to promote the acceptance of the rupee as a means of payment in international trade and cross-border transactions.

Changes to Advance Rupee Internationalisation:

- Several changes might be implemented to advance the internationalisation of the rupee:
- Aim for complete convertibility by 2060, enabling unrestricted financial investment flow between India and other countries.
- Create a more extensive and liquid rupee bond market to draw in foreign investors & offer rupee investment options.
- To streamline trade settlement procedures, encourage Indian exporters & importers to invoice transactions in rupees.
- Construct more currency exchange contracts, similar to the one with Sri Lanka, to settle business and financial deals in rupees.
- Provide tax incentives to international companies to promote the use of rupees in Indian operations.
- Maintain stability in currency management and enhance the exchange rate regime to inspire trust.
- To raise the rupee's profile and acceptability, work to have it recognised as an official currency by international organisations.
- Put into practise the Tarapore Committees' suggestions, which include lowering the budget deficit, inflation, and the amount of non-performing assets in the banking industry.

Way forward

- To overcome these challenges and achieve greater internationalisation of the rupee, India needs to adopt a gradual and calibrated approach that balances its benefits with its costs and risks.
- **Liberalising the capital account** further by easing or removing some of the existing controls on capital flows, especially for long-term investments that can enhance India's productive capacity and growth potential.
- **Strengthening India's macroeconomic fundamentals** by maintaining fiscal discipline, monetary stability, external balance, and financial resilience can boost confidence and credibility in India's economy and currency.
- **Enhancing India's integration with the global economy** by pursuing trade liberalisation, regional cooperation, multilateralism, and strategic partnerships with key countries can increase India's share and role in global trade and finance.
- **Developing India's domestic financial market** by improving its infrastructure, regulation, supervision, innovation, and inclusion can create a vibrant and efficient market for rupee-denominated instruments and contracts.
- **Promoting India's soft power and cultural diplomacy** by leveraging its rich and diverse heritage, culture, values, and achievements, which can enhance its image and influence in the world and generate goodwill and affinity for India and its currency.

Why in news?
- TheUnion Minister of Commerce and Industry, Consumer Affairs, Food and Public Distribution praised the remarkable growth of procurement from the Government e-Marketplace (GeM) in the last three years, which has increased by ten times.

About Government e-Marketplace (GeM)
- Government e-Marketplace (GeM) is a very audacious move by the government to change how government ministries and departments, public sector undertakings, and other top autonomous organizations of the Central Government acquire products and services.
- The GeM is a website that the Ministry of Commerce and Industry of the Government of India developed in 2016 to make it easier for different government agencies and organizations to purchase products and services.
- All government agencies, businesses in the public sector, independent groups, and other organisations are welcome.
- The GeM portal currently offers the employment of transport services along with more than 7400 products in around 150 product categories.
- **GeM is an entirely digital, cashless, and system-driven e-marketplace** that makes it possible to purchase everyday goods and services with little to no interaction from humans.
- Nation of origin Sellers must specify the Country of Origin each time a new product is registered on GeM.

Significance
- **GeM largely** removes the need for human interaction **during order placement, vendor registration, and payment processing.**
- **GeM is an open platform** that places no restrictions on legitimate vendors who want to work with the government.
- **Direct purchases on GeM** can be completed in a matter of minutes, and the entire process is online, integrated from beginning to end, and equipped with online tools for determining price justification.
- In comparison to other popular e-procurement systems used by the Government sector, **the bidding/Reverse Auction (RA) facility** on GeM is among the **most transparent and effective** for higher-value purchases.
- GeM is an **entirely secure platform**, and both buyers and sellers electronically sign all documents on GeM at various stages.
- GeM can **entice more suppliers, particularly small and medium-sized businesses,** to engage in government procurement procedures, increasing competition and improving the government's financial value.

Context
- The India-UK Free Trade Agreement (FTA) is a complex and ambitious project that aims to enhance the economic ties between the two countries. However, many challenges and disagreements need to be resolved in the ongoing negotiations.
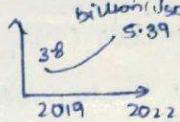
Details
- According to sources, the FTA talks between India and the UK have faced some **challenges due to the lack of political stability in the UK in the past and the introduction of new elements in the current negotiations**. These include labour and environmental standards, which are being negotiated for the first time, and global value chains, which are also a new feature of the FTA.
- India's main objective is **to secure a comprehensive deal that does not compromise its interests**, especially since this deal will set a precedent for its future trade pacts with other partners, such as the EU (European Union) and the EFTA (European Free Trade Association) countries viz., Iceland, Liechtenstein, Norway and Switzerland.
- The **FTA with the UK is also seen as a model for future FTAs with other countries**, especially the EU, which makes India more cautious about the outcome.
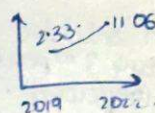
India - UK FTA

Data

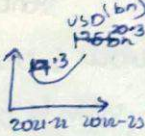i. Acc to Min of External Affairs 2021-22 Annual report

(i) Imports from UK — billion (USD) 38 → 5.39 (2019 → 2022). Ind. accounts UK's 12th largest trading partner

(ii) Exports by Ind — 7.33 → 11.06 (2019 → 2022) USD (bn)

(iii) Total bilateral trade — ↑ 19.3 USD 2023 15.6bn (2021-22 → 2022-23)
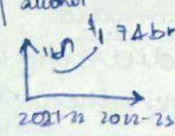
(iv) Ind major exports:
- ready made garments
- Textiles
- gems & jewellery
- engg goods
- petroleum products
- Spices

Ind imports:
- precious stones
- Ores & metal scrap
- Iron & steel
- cosmetics
- aluminium product
- alcohol

(v) FDI Ind received — ↑ 17.4bn (2021-22 → 2022-23)

Ind - UK
Benefits to Ind (FTA)

[POL] ⇒ Shared democratic values, UNSC permanent member support

[Defence] ⇒ monitoring, Joint military exercise, aids make in Ind.

[Bilateral] ⇒ Ind-UK JWG on counter terrorism, cyber dialogue etc.

[Nuclear] ⇒ Nuclear collab agreement (2015)

[Terrorism] ⇒ strengthening UNCIT)

[Edu] ⇒ SLT agreement. Health collab. ppl to ppl contact (Yoga, festivals etc).

Benefits to Ind (FTA)

i) Greater market access (US UK avg eco)

ii) aids ongoing eco progress — (FDI to Ind. $33 bn (2000-2023)) UK 6th largest investor to Ind.

(iii) access to advanced tech & research, development facilities

(iv) Competitiveness advantage —

(v) ↑ service trade —
Acc to Deloitte report. service sector 10% FDI from UK (2021). NSO ↑ imports from exports to ind. export to Ind KPMG (2013 → 2020)

(vi) Consumer benefits.

(vii) Diaspora — Ind. 1.6 mn ppl in UK (eco survey)

Strategic benefits to Ind

(i) UNSC (UK is permanent member)

(ii) World Bank
Ind voting share ⇒ 3.06%
UK " " ⇒ 3.90%
→ 5th largest voter

(iii) Making Ind skill capital MOU with UK (Eco survey)

(iv) IMF

(v) Pak - ↗ urr comprehensive conad (untn Currency) UK aids incountering terrorism. terrorism

(vi) Countering BRI by giving money to poor nation

(vii) ↑ partnership v/s geo.

(viii) Act

Benefits to UK

i) ↓ tariff barriers -
[Avg tariff on UK exports to Ind is 18%.]

ii) Market access -
Ind's overall import market sni $1.38 bn [by 2035)

iii) ↑ competitiveness
UK alcohol 150% tariff.

iv) Invsmt
Ind 2nd largest investor in UK (Eco survey)

v) Job opportunities, innov^n in digital era

vi) UK trade as independent partner.

Strategic benefits to UK

i) Counter China.
ii) WTO
iii) G20.
iv) Artemis accord.
v) ↑ coop^n with South asian & southeast ~
vi) Indian ocean region.

Challenges for UK -

i) Data localiz^n. (free data flow)
ii) Wants liberal rule of origin.
iii) Wants liberaliz^n of highly protected service markets (telecomm^n, legal & fin^l)
(But Ind says no)

Challenges for Ind

i) IPR strict laws → affects affordable medicine
Ind doesn't want to compromise generic drugs IPR

ii) Complexities in global values chain (diff countries, parts)

iii) Inadequate data protect^n laws.

iv) Rules of origin shld be strict to ↓ 3rd party interference.

v) Labour & envi commitments.

vi) UK wants free cross border data flow.

vii) Impacts make in Ind

viii) Agriculture (UK net agri importer)

Way forward

i) Addressing issues
ii) Strengthen market infra.
iii) Enhanced coop^n.
iv) Timely updations.

Critical Minerals for India

Economy

Why in news?

- The Union Minister of Coal, Mines & Parliamentary Affairs has released the country's first report on "Critical Minerals for India", which was prepared by an expert team appointed by the ministry.

About critical minerals

- Critical minerals are minerals that are essential for the economic development and national security of a country, but have limited availability and high supply risks.
- Different countries have identified their own lists of critical minerals based on their specific needs and priorities. For example, the US has 35 critical minerals, the EU has 30, Australia has 24 and Japan has 31.

About critical minerals for India

- Expert Committe under Ministry of Mines has identified a set of 30 critical minerals for India.
- The list comprises 30 minerals, including 17 rare earth elements (REEs) and six platinum-group elements (PGE), each designated as critical based on their economic importance and limited availability in India's geological reserves.
- Some of the minerals are antimony, beryllium, bismuth, cobalt, copper, gallium, germanium, graphite, hafnium, indium, lithium, molybdenum, niobium, nickel, PGE, phosphorous, potash, REE, rhenium, silicon, strontium, tantalum, tellurium, tin, titanium, tungsten, vanadium, zirconium, selenium, and cadmium.

Significance of Critical minerals for India

- Critical minerals are required to meet the manufacturing needs of green technologies, such as zeroemission vehicles, wind turbines, solar panels and hydrogen.
- Critical minerals are also vital for information and communication technologies, such as semiconductors, high-end electronics, telecommunications and digital infrastructure.
- Critical minerals are also key for advanced manufacturing inputs and materials, such as defence applications, permanent magnets, ceramics, alloys and superconductors.
- These materials are important for India to strengthen its national security and strategic capabilities in sectors like defence, space and nuclear energy.

Challenges India faces in securing supply of Critical minerals

- It is largely dependent on imports from other countries, especially China.
- India also lacks adequate exploration, mining, processing and recycling capacities for critical minerals. India has limited reserves for critical minerals and over-reliance on imports comes with cost of increased price fluctuations, supply chain disruptions and geopolitical concerns.
- However, India can look to diversify our source of supply of minerals from different countries. India's recent agreement with US over joining Minerals supply partnership is a right step and bilateral agreements can be made with countries (Australia, Chile, South Africa) who have rich reserves of critical minerals.

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PM-PRANAM Scheme

Economy

Why in news?

- The PM-PRANAM scheme is a new initiative by the government to promote the use of nutrient-based, biofertilizers for sustainable agriculture. The scheme has a total outlay of ₹3,60,128.6crore and will be implemented in collaboration with the State governments.

About PM PRANAM Scheme

- It is abbreviated as PM Programme for the Revival, Enlightenment, Enhancement, & Enhancement of Mother Earth.
- Its primary objective is to decrease the reliance on chemical fertilizers and encourage the well-balanced application of alternative fertilizers.
- This initiative will alleviate the financial burden of subsidies on chemical fertilizers, which is expected to reach Rs 2.25 lakh crore in the fiscal year 2022-2023.
- Furthermore, it will bolster the resilience of Indian agriculture in response to the evolving climate. States that maintain a lower consumption of chemical fertilizers compared to their three-year average will receive incentives.

- These states will receive a 50% grant based on the savings in subsidies, which they can allocate for asset creation, technological integration, and initiatives aimed at raising awareness about alternative fertilizers.
- Active involvement in the reduction of fertilizer usage will be encouraged among farmers, panchayats, farmer producer organizations, and self-help groups.
- This initiative aligns with the government's emphasis on promoting sustainable and environmentally conscious agricultural practices.
- It will complement existing programs such as the **National Mission for Sustainable Agriculture (NMSA), National Initiative on Climate Resilient Agriculture (NICRA),** and **PM Krishi Sinchaayi Yojna .**

Benefits of PM PRANAM Scheme Reduction in Subsidy Expenditure
- **PM Pranam** has the potential to curtail the government's subsidy expenditure by endorsing alternative or bio-fertilizers. The government's ambition to establish 10,000 Bio-Input Resource Centres, creating a nationwide network for micro-fertilizer and pesticide production, underscores its commitment to this approach. Through the promotion and adoption of these bio-fertilizers, PM Pranam can gradually alleviate the fiscal burden associated with chemical fertilizer subsidies.
- **Control of Fiscal Deficit**: The reduction in subsidy costs facilitated by **PM Pranam** can contribute significantly to controlling India's fiscal deficit. Fiscal deficits pose considerable economic challenges, and one effective way to address this issue is by diminishing subsidies.
- **Phased Transition Away from Chemical Fertilizer Subsidies: PM Pranam** has the potential to expedite the gradual reduction of chemical fertilizer subsidies. By offering support and incentives for the adoption of alternative fertilizers, the government can systematically reduce its financial commitment to chemical fertilizer subsidies.
- **Empowerment of Farmer Fertilizer Cooperatives: PM Pranam** can empower farmer fertilizer cooperatives to expand their biofertilizer production. Such support can lead to increased economies of scale and the establishment of a more extensive distribution network for alternative fertilizers.
- **Stimulating Sales and Distribution Networks:** It is essential to devise pricing and margin strategies for biofertilizers that motivate sales and distribution networks. **PM Pranam** can facilitate this process by providing incentives to cooperatives and businesses engaged in biofertilizer production and distribution.
- **Demonstration and Certification**: **PM Pranam** can endorse initiatives that showcase the effectiveness of alternative fertilizers in real farming scenarios. This is critical for building trust and encouraging farmers to embrace these products. The certification of these bio-fertilizers can also ensure quality and enable farmers or their associations to command better prices for their agricultural produce.

Green Credit Programme — Economy

Why in news?
- The draft Green Credit Programme Implementation Rules 2023, notified by the Union Ministry of Environment, Forests and Climate Change.

About 'Green Credit Scheme'
- The proposed 'Green Credit Scheme', as it is called, allows agencies, they could be private companies, village forest communities, to identify land and begin growing plantations.
- After three years, they would be eligible to be considered as compensatory forest land if they met the Forest Department's criteria.
- An industry needing forest land could then approach the agency and pay it for parcels of such forested land, and this would then be transferred to the Forest Department and be recorded as forest land.
- The participating agency will be free to trade its asset, that is a plantation, in parcels, with project proponents who need forest land.
- Once finalised, the scheme will overhaul the compensatory afforestation process by accrediting private or public-private partnership companies to raise plantations near reserved forests which can be bought in lieu of projects involving forest diversion.
- If the company raising the plantation doesn't wish to trade it, it can retain it and harvest the timber once ready.

Understanding the current system:
- Under the Forest Conservation Act 1980, each time forest land is diverted for non-forest purposes like mining or industry, the project developer is supposed to identify land and pay for planting forests over an equal area of non-forest land, or when that is not available, twice the area of degraded forest land.

- It also must pay the State Forest Department the current economic equivalent, called **Net Present Value**, of the forest land.
- This money currently gets collected under the **Compensatory Afforestation Fund**.
- It's then the Forest Department's responsibility to grow appropriate vegetation that, over time, would grow into
- Industries have often complained that they find it hard to acquire appropriate non-forest land, which has to be contiguous to an existing forest.
- Nearly ?50,000 crores had been collected by the Centre over decades, but the funds were lying unspent because States were not spending the money on regrowing forests.
- The Supreme Court intervened, a new law came about with rules for how this fund was to be administered.
- About ?47,000 crores had been disbursed to States until August, but it has barely led to any rejuvenation of forests.

Gramodyog Vikas Yojana   Economy

Why in news?
- The Lieutenant Governor of Delhi distributed Honey Bee Boxes and Toolkits to 130 beneficiaries under the GramodyogVikasYojana' of the Khadi and Village Industries Commission (KVIC).

Gramodyog Vikas Yojana
About
- GramodyogVikasYojna (GVY) is a scheme **launched by the Union Ministry of Micro, Small and Medium Enterprises (MSME) to support the development of village industries in India.**
- It provides various facilities and services to artisans and entrepreneurs who are engaged in different types of village industries such as agarbatti, khadi, pottery, honey, leather work, plumbing etc.
- It is **implemented by the Khadi and Village Industries Commission (KVIC)** through its field offices & institutions.

Objectives
- To **create employment opportunities** and income generation in rural areas.
- To preserve and promote the traditional skills and crafts of rural artisans.
- To **upgrade the technology and quality** of the products of village industries.
- To provide training and skill development to the artisans and entrepreneurs.
- To enhance the marketability and competitiveness of the products of village industries.
- To **provide social security and welfare measures** to the artisans and entrepreneurs.

Features
- The **central government funds the scheme entirely as a central sector scheme**. This ensures that the resources for implementing the various sub-schemes under the scheme are adequate and timely.
- The **scheme includes various sub-schemes** such as Market Promotion and Development Assistance (MPDA), Prime Minister Employment Generation Programme (PMEGP), etc.
- These sub-schemes address the different needs and challenges of the village industries sector, such as technology upgradation, infrastructure development, credit facilitation, skill development, marketing support, etc.
- The scheme **aims to improve the productivity, wages, employment and sales of the village industries** and make them more competitive in the domestic and international markets. It also supports the establishment of new enterprises and the growth of existing ones in rural areas, thereby creating more income and employment opportunities for the rural population.

Sub-schemes under GVY are:
- **Market Promotion and Development Assistance (MPDA)**
  - This scheme helps in the marketing and branding of Khadi and village industry products by providing financial assistance to the Khadi institutions, sales outlets, franchisees and e-commerce platforms. It also supports product development, design intervention, packaging, publicity and exhibitions.
- **Interest Subsidy Eligibility Certificate (ISEC)**
  - This scheme offers interest subsidies to the Khadi institutions for taking loans from banks and financial institutions for working capital and fixed capital requirements. The scheme covers 75% of the interest charged by the banks on the loans availed by the Khadi institutions.

- **Worksheet Scheme for Khadi Artisans**
  - This scheme provides financial assistance to the Khadi artisans for building or improving their worksheds. The scheme aims to improve the working conditions, productivity and earnings of the Khadi artisans. The scheme provides a subsidy of 75% of the project cost for individual worksheds and 90% for community worksheds.
- **Prime Minister's Employment Generation Programme (PMEGP)**
  - This is a credit-linked subsidy programme that aims to create employment opportunities through micro-enterprises in the non-farm sector. The scheme provides a subsidy of 15% to 35% of the project cost to the beneficiaries who set up micro-enterprises with loans from banks. The scheme covers manufacturing, service and trading sectors.
- **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY)**
  - These are life insurance and accidental insurance schemes for the Khadi and village industry artisans at a low premium. The schemes provide a cover of Rs. 2 lakh each for death or disability due to any cause. The premium is Rs. 330 per annum for PMJJY and Rs. 12 per annum for PMSBY.

KVIC
- KVIC is a statutory body established under the Khadi and Village Industries Commission Act, 1956.
- The KVIC is charged with the planning, promotion, organisation and implementation of programmes for the development of Khadi and other village industries in the rural areas in coordination with other agencies engaged in rural development wherever necessary.
- It functions under the Ministry of MSMEs.
- The broad objectives that the KVIC are
  - The social objective of providing employment.
  - The economic objective of producing saleable articles.
  - The wider objective of creating self-reliance amongst the poor and building up of a strong rural community spirit.

World Investment Report 2023 by UNCTAD   Economy

Why in news?
- The United Nations Conference on Trade and Development (UNCTAD) published the World Investment Report 2023, which showed that developing countries in Asia received $662 billion in foreign direct investment (FDI) in 2022, representing about 50% of the total global inflows.

About the report
- The UNCTAD's World Investment Report 2023 analyzed the trends and prospects of FDI in different regions and sectors, as well as the impact of the COVID-19 pandemic and the recovery efforts.
- The report highlighted that **India and ASEAN** **were the most stable destinations for FDI, with growth rates of 10% and 5%, respectively**, and strong performance in project announcements.

Key findings of the Report
- India and ASEAN were the most buoyant recipients of the Foreign direct investment (FDI), with increases of 10 and 5%, respectively.
- **FDI inflows were higher in developing countries** compared with those in developed economies.
- China, the second largest FDI host country in the world, saw a 5% increase.
- FDI in the **Gulf region declined**, but the number of project announcements increased by two thirds.
- Inflows in many **smaller developing countries were stagnant**, and FDI to the least developed countries (LDCs) declined.
- Much of the growth in international investment in **renewable energy** has been **concentrated in developed countries**.
- The **investment gap** across all sectors of the **Sustainable Development Goals has increased** to more than $4 trillion per year from $2.5 trillion in 2015.
- The largest gaps are in energy, water and transport infrastructure.
- **Suggestions made in the Report**
  - The report emphasizes the **need for more investment in sustainable energy for all**, as most of the FDI in renewable energy has been concentrated in developed countries.

- The report calls for more **support for developing countries to bridge the gap by mobilizing massive investments in clean energy**, which require about $1.7 trillion per year but only received $544 billion in FDI in 2022.
- The report suggests **reducing the risk of energy transition investment in developing countries** through various instruments, such as loans, guarantees, insurance and equity, from both public and private sources, as well as multilateral development banks. It also proposes a "new model of climate-aligned dealmaking".

United Nations Conference on Trade and Development
- It is a permanent **inter-governmental body** established by the United Nations General Assembly in 1964.
- It is responsible for dealing with development issues, particularly international trade.
- Framing policies in various domains such as trade, technology, finance, aid, and transport are the most important priorities of UNCTAD.
- The Conference ordinarily **meets once in four years.**
- The second UNCTAD Conference took place in New Delhi, India in 1968.
- **Members:** 195 countries
- **Headquarters:** Geneva, Switzerland
- **Reports published by the UNCTAD:** Trade and Development Report, The Least Developed Countries Report and Commodities and Development Report etc.

Why in the news?

- This year marked the 25th anniversary of the strategic partnership between France and India, the Indian Prime Minister recently visited France.

India-France relationship

- India and France have traditionally had close and friendly relations.
- The two countries entered into a Strategic Partnership in 1998, which is emblematic of their convergence of views on a range of international issues apart from a close and growing bilateral relationship.

- <u>Here are some key points about the India-France relationship:</u>
  - **Trade:** Both countries have a centuries-old history of trade relations. In recent years, trade between India and France has been growing steadily, with France being India's ninth-largest trading partner in the European Union.
  - **People-to-People Ties**: Enhancing mobility partnership and skill-set cooperation to foster academic collaboration and meet the needs of skill development.
  - **Science, Technology, and Academic Cooperation**: Collaboration between research institutions in scientific, critical technologies, health, cyber, digital regulatory frameworks, and digital technologies.
  - **Defence:** India and France have a strong defense partnership, with France being one of India's key suppliers of military hardware. The two countries have also conducted joint military exercises, such as the Varuna naval exercise.
  - **Culture and Education:** India and France have a rich cultural exchange, with many Indian students studying in France and vice versa. The two countries also collaborate on scientific research and development.
  - **Climate Change:** India and France have a shared commitment to combating climate change and have worked together on initiatives such as the International Solar Alliance.

## Significance of India-France relationship:

- In the broader picture, the France-India strategic relationship is built on a respect for each other's strategic autonomy.
- France has remained steadfast in its refusal to comment on India's internal affairs or its foreign policy choices.
- While France has taken a leading role in the western pushback to Russia's war in Ukraine, it has not joined other western countries in publicly exhorting India to change its stand.
- In 1974, and in 1998, France did not join the western push to sanction India for its nuclear tests either; it even stepped in with uranium supplies to power the Tarapur reactors.

- Seven bilateral joint working groups in various fields exist which are:
  - IT & Telecommunications
  - Roads
  - Sustainable Urban Development
  - Agriculture and Food Processing
  - Mineral Exploration and Development
  - Energy
  - Post
- Bilateral consular relations are guided by the following four agreements:
  - **India-France Extradition Treaty (August 2005)**
  - **India-France Mutual Legal Assistance Treaty (MLAT) in Criminal Matters (10 October 2005)**
  - **India-France Agreement on the Transfer of Sentenced Persons (January 2008)**
  - **India-France agreement on exemption of visa requirements for diplomats (October 2013)**

India-France Strategic Partnership

- India's strong economic influence in the UK is evident as it is the second largest job creator in the country, highlighting the importance of maintaining a cordial relationship.
- France stands out as a strong ally of India, seeking to establish a direct relationship in various aspects.
- France has been considered India's new best friend, as it has consistently stood by India and been more proactive than Russia in their relationship.

- France was the first country to sign a strategic relationship agreement with India, highlighting their progressive and neutral stance in international conflicts.
- India and France's relationship strengthened when France delivered Raphael Jets to India during the Chinese aggression, highlighting their support for each other.
- France calls for a multilateral world where India is seen as a major stakeholder, highlighting the importance of involving all countries in decision-making processes.
- France and India recognize the importance of cyber security in combating lone wolf attacks and foreign terrorist activities, highlighting the need for cooperation in this area.
- France's support for India is evident in their cooperation, as France typically only invites countries actively involved in previous cold era groupings.
- France has consistently been a supportive country for India, particularly in its bid for a seat on the UN Security Council.
- France's assistance to India's missions to Venus and Mars further strengthens their technological partnership.
- France is one of the biggest investors in India, with 1000 French companies generating employment and contributing to the economy.
- France and India have a strong partnership in the field of renewable energy, as they jointly launched the International Solar Alliance in 2015.
- India seeks support from both the US and France for a permanent seat on the United Nations Security Council, highlighting its ambition for a stronger global presence.
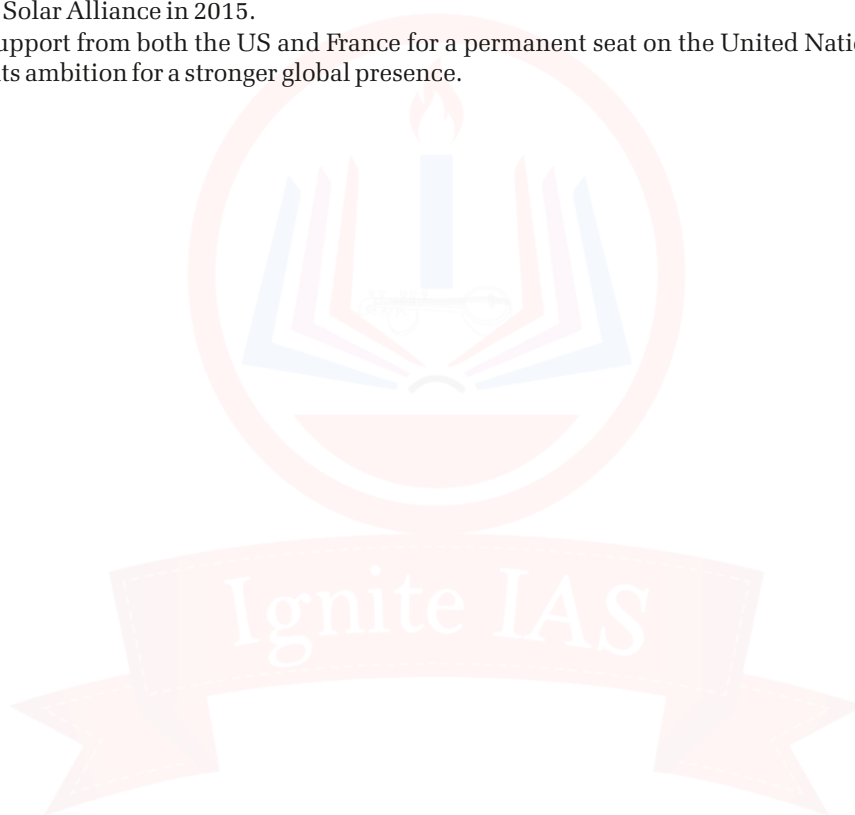
Why in news?

- Four multilateral agencies have launched a priority research agenda on June 28, 2023, to better advocate for increased research and investment in antimicrobial resistance (AMR).

About the agenda

- The agenda prioritises 40 research topics for evidence generation to inform policy and interventions by 2030.
- It also aims to guide a variety of stakeholders in generating new evidence to address antimicrobial resistance, with a focus on low- and middle-income countries.
- The agenda will serve as a guide for countries, research institutes and funding bodies to support One Health AMR research. It will also allow policymakers, researchers, and the multidisciplinary scientific community to collaborate across sectors.
- **It defined 'One Health' as an integrated, <u>unifying approach that aims to sustainably</u> <u>balance and optimise the</u> <u>health of people, animals and ecosystems.</u>**
- <u>The concept acknowledges the health of humans, domestic and wild animals, plants, and the larger environment, including ecosystems, are inextricably linked and interdependent. At this One Health interface, addressing global health issues necessitates a multisectoral, multidisciplinary response to AMR.</u>
- The 'Quadripartite' — comprising the <u>United Nations (UN) Food and Agriculture Organization (FAO), the UN Environment Programme (UNEP), the World Health Organization (WHO)</u> and the <u>World Organisation for Animal Health (WOAH)</u> — released the One Health Priority Research Agenda on Antimicrobial Resistance through a webinar.
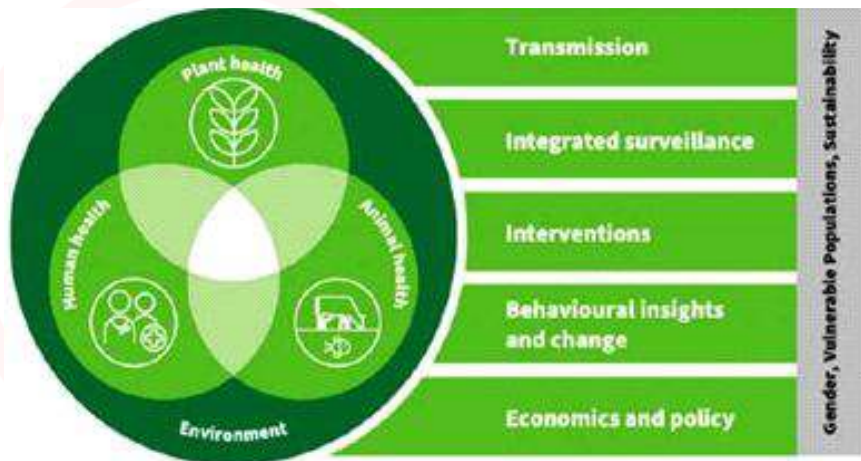
Transmission

- This pillar focuses on the **environment, plant, animal, and human** sectors where AMR transmission, circulation and spread occur.
- This includes what drives this transmission across these areas, where these interactions occur, and the impact on different sectors.

Integrated surveillance

- This pillar aims to identify cross-cutting priority research questions in order to improve common technical understanding and information exchange among One Health stakeholders.
- The surveillance aims for harmonisation, effectiveness, and implementation of integrated surveillance with a focus on LMICs.

Interventions

- This pillar focuses on programmes, practises, tools, and activities aimed at preventing, containing, or reducing the incidence, prevalence, and spread of AMR.
- This also calls for the best use of existing vaccines, as well as other One Health-related measures to reduce AMR.

Behavioural insights and change

- The priority research areas under this pillar are concerned with comprehending behaviour across various groups and actors involved in the development and spread of AMR at the One Health interface.
- It focuses on research addressing human behaviour that affects AMR, including ways to combat it.

Economics and policy

- From a One Health standpoint, this pillar addressed investment and action in AMR prevention and control.
- This pillar also takes into account the **cost-effectiveness of an AMR investment case, financial sustainability, and long-term financial impact.**

Closing remarks
- This **research agenda aims to direct future research in One Health AMR with a focus on low-resource** settings.
- The agenda also emphasises the importance of developing research capacity in LMICs, which will be critical for addressing research gaps and developing evidence.
- The agenda at the regional and national levels requires tailoring and the development of specific research questions.

Trends in Childhood Immunisation   Science & Technology

Why in news?
- Over 4 million more children were vaccinated in 2022 compared to the year before, the World Health Organization (WHO) and United Nations Children's Fund (UNICEF).

Key facts
- **The number of children missing out on any vaccination** – so-called zero-dose children – improved from 18.1 million in 2021 to 14.3 million in 2022, nearly back to pre-pandemic 2019 level with 12.9 million.
- Coverage of a third dose of vaccine protecting against **diphtheria, tetanus, and pertussis (DTP3) recovered from 81% in 2021 to 84% in 2022.**
- The proportion of children receiving a first dose of measles vaccine **increased from 81% in 2021 to 83% in 2022, well below the 2019 level of 86%.**
- **Global coverage for the first dose of HPV in girls** raised from 16% in 2021 to 21% in 2022.
- **Coverage of yellow fever vaccine** in the countries at risk of it is 48%, well below the 80% coverage that is recommended.

Immunization Agenda 2030
- **IA2030 sets an ambitious, overarching global vision** and strategy for vaccines and immunization for the decade 2021–2030.
- It was co-created with thousands of contributions from countries and organizations around the world.
- It draws on lessons from the past decade and acknowledges continuing and new challenges posed by infectious diseases **(e.g. Ebola, COVID-19).**

Key challenges
- **In 2022, 14.3 million infants did not receive an initial dose of DTP vaccine**, pointing to a lack of access to immunization and other health services, and an additional 6.2 million are partially vaccinated.
- Of the 20.5 million, just under 60% of these children live in 10 countries: **Angola, Brazil, the Democratic Republic of the Congo, Ethiopia, India, Indonesia, Mozambique, Nigeria, Pakistan and the Philippines.**
- **Monitoring data at subnational levels** is critical to helping countries prioritize and tailor vaccination strategies and operational plans to address immunization gaps and reach every person with life-saving vaccines.
- **World Health Assembly adopted the global strategy towards eliminating cervical cancer**. In this strategy, the first of the 3 pillars require the introduction of the HPV vaccine in all countries and has set a target of reaching **90% coverage.**
- **With introduction currently in 67% of Member States**, large investments towards introduction in low and middle-income countries will be required in the next 10 years as well as programme improvements to reach the 90% coverage targets in low and high-income settings alike will be required to reach the 2030 targets.

Timeline	Vaccines	Coverage (%)	Timeliness (%)
Birth	BCG	93	63.4
	OPV-0	67	97
6 weeks	OPV-1	96.5	58
	DPT-1	97	56.7
10 weeks	OPV-2	95	32.6
	DPT-2	95	39.4
14 weeks	OPV-3	91	22
	DPT-3	91	21.4
9-12 months	Measles	29.5	88.1

Why in news?
- India is home to nearly 20% of the world's population, two-thirds of which reside in rural areas. Apart from a rising population, India has experienced a steep rise in the burden of lifestyle-related non-communicable diseases.
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About palliative care
- **Palliative care is the branch of medicine focusing on improving the quality of life and preventing** suffering among those with life- limiting illnesses.

Aim
- **It aims to identify patients at risk of over- medicalisation at the expense** of **quality of life** and financial burden on the family. It is often misinterpreted as end-of-life care. However, palliative care aims to improve the quality of life by addressing the **physical, psychological, spiritual, and social domains of** the health of people suffering from life- limiting diseases like heart failure, kidney failure, certain neurological diseases, cancer, etc.

Need of palliative care
- Palliative care in India has largely been available at tertiary healthcare facilities in urban areas. Due to this skewed availability of services, it is accessible to only 1-2% of the estimated 7-10 million people who require it in the country.
- **For example**: A medical oncologist from Kerala, as many as 7 out of 10 patients he sees daily need palliative care.
- **Post-independence India has made considerable efforts to improve the health of its people**. A three-tier **health system, multiple national health programmes and schemes**, and the **Ayushman Bharat Health Insurance Scheme** are all **positive steps taken towards universal health coverage**.
- But despite these efforts, **55 million people in India are pushed below the poverty line every** year due to health-related expenditures. Over-medicalisation plays a significant role in this financial burden.

Government programme
- **The National Programme for Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke (NPCDCS), now the National Programme for Prevention & Control of Non-Communicable Diseases (NP- NCD),** includes chronic diseases whose treatment contributes the most to health- related expenses. These diseases progress to a stage where, in an ideal scenario, palliative care should take over curative care.

Why in News?
- Researchers have come up with a new and highly efficient optical limiter using a novel 2D material, 'hematene'.

About Hematene Nanoflakes for Optical Limiters
- **Hematene Nanoflakes' Potential:** Nanoflakes of hematene, extracted from iron ore (hematite), have been discovered to withstand and shield from high laser intensities effectively.
- **Optical Limiters Application:** Hematene nanoflakes can be used to create optical limiters, devices that protect sensitive optical equipment from light-induced damage.
- **Protection Against Laser Radiation:** Laser sources emit concentrated and powerful radiation that can be harmful to optical devices such as sensors, detectors, etc.
- **Control of Light Transmission:** Optical limiters control the amount of light passing through them, thereby preventing damage to optical components when the input intensity increases.
- **Applications:** Optical limiters find utility in various fields, including laser technologies, military applications, telecommunications, aircraft, and scientific research.

Key Facts about Hematene:
- **Source:** Hematene is extracted from naturally occurring hematite, which is the mineral form of iron(III) oxide. The extraction process involves sonication, centrifugation, and vacuum-assisted filtration.
- **Thickness and Photocatalysis:** Hematene measures just three atoms thick and exhibits more efficient photocatalysis.

- Ferromagnetic Properties: Hematene displays ferromagnetic properties, making it behave like a common magnet.
- **Performance in Optical Limiting:** Hematene nanoflakes demonstrate exceptional optical limiting of green laser light (532 nm) while maintaining a high linear transmission (about 87%) for low-intensity light.

STARFIRE Algorithm Science & Technology

Why in News?
- Recently, Scientists at Raman Research Institute (RRI), an autonomous institute of the Department of Science and Technology have developed an algorithm names STARFIRE to tackle unwanted Radio Frequency Interference (RFI) in space, enriching data obtained from space-based astronomy missions.

About STARFIRE: Revolutionizing Space-Based Astronomy with Advanced RFI Estimation
- STARFIRE (Simulation of TerrestriAl Radio Frequency Interference in oRbits around Earth) is an advanced algorithm developed to estimate and map unwanted Radio Frequency Interference (RFI) signals in space.
- To develop this algorithm, scientists utilized data on FM transmitter stations from six countries, including Canada, the USA, Japan, Australia, Germany, and South Africa.

Applications and Potential impact
- **Estimation and Identification of RFI:** STARFIRE can estimate and identify RFI emitted by various sources, such as FM radio stations, Wi-Fi networks, mobile towers, radar, satellites, and communication devices.
- **Enriching Space-Based Astronomy Missions:** By mitigating unwanted RFI signals, STARFIRE revolutionizes space-based Astronomy missions, enhancing data quality and insights into the early Universe.
- **Early Universe Studies:** The algorithm aids astronomers in studying the early Universe by estimating and mapping unwanted RFI signals in space.
- **Tuning Radio Antennas:** STARFIRE enables tuning radio antennas within the 40 to 200 MHz range to detect the 21-cm hydrogen line, revealing cosmic secrets.
- **Designing Instruments for Space-Based Missions:** The algorithm helps design instruments that operate optimally in the presence of RFI, leading to improved data collection and analysis.
- **Application in PRATUSH Mission:** STARFIRE is utilized in missions like PRATUSH, which studies the birth of stars and galaxies using the 21-cm hydrogen line from the far side of the moon.
- **Antenna and Instrument Fine-Tuning:** STARFIRE plays a crucial role in fine-tuning antennas and instrument components for successful data gathering.
- **Orbit Selection for Future Missions:** The algorithm aids in identifying low RFI orbits, particularly in the ~100 MHz frequency range, making them suitable for scientific experiments.
- **Flexibility in Antenna Properties:** STARFIRE allows adjusting properties of transmitting and receiving antennas, facilitating meaningful experimental results from astrophysical radio signals.
- **Adaptable Mathematical Formulation:** STARFIRE's generic mathematical formulation makes it adaptable for various applications, benefiting missions with low RFI orbits.

Radio Frequency Interference (RFI)
- RFI is a form of electromagnetic interference (EMI) that impacts devices or circuits operating with radio frequencies.
- **Impact on Space Systems:** RFI in space can significantly affect the quality and reliability of satellite communications, navigation systems, and remote sensing equipment.
- **Interference with Scientific Instruments:** Space-based instruments, such as radio telescopes and radars, can also be affected by RFI, leading to interference with scientific observations and measurements.
- Ensuring RFI-free space environments is crucial for the smooth functioning of various space-based systems and to enable accurate scientific exploration and data gathering.
- Efforts to mitigate RFI are essential to enhance the overall performance and reliability of space missions and research.

Mosaic Virus

Why in news?

- Farmers in Maharashtra have said their tomato crop was impacted by attacks of the **cucumber mosaic virus (CMV), while growers in Karnataka blamed the tomato mosaic virus (ToMV)**.
- **About CMV and ToMV**
- The two plant pathogens have similar names and cause similar damage to crops, but they belong to different viral families.
- ToMV belongs to the Virgaviridae family and is closely related to the tobacco mosaic virus (TMV).
- ToMV hosts include tomato, tobacco, peppers, and certain ornamental plants.
- CMV has a much larger host pool that includes cucumber, melon, eggplant, tomato, carrot, lettuce, celery, cucurbits and some ornamentals. CMV was identified in cucumber in 1934, which gave the virus its name.
- **Spread of virus:**
- ToMV spreads mainly through infected seeds, saplings, agricultural tools and often, through the hands of nursery workers who have failed to sanitise themselves properly before entering the fields.
- CMV is spread by aphids, which are sap-sucking insects.
- CMV too can spread through human touch, but the chances of that are extremely low.

Fusobacterium Bacteria

Why in news?

- A new study could help expand the range of treatment options for a condition that affects millions of women with chronic pain and infertility.

About the bacteria

- Theexperiment was conducted with a cohort of **155 women in Japan, of which 79 were diagnosed with endometriosis while 76 were healthy.** Researchers found a species of **Fusobacterium bacteria in 64% of endometriosis patients**, while it was present in 7% of those who did not have the condition.
- **To assess the direct effect of the bacteria on the disease**, the scientists transplanted endometrial tissue inside the abdominal cavity of two sets of mice, one infected with a bacterium of the genus Fusobacterium and another without the bacteria.
- **They found that the bacteria triggered the growth of larger lesions** of endometriosis in the former mice, relative to the latter.

About Endometriosis

- Endometriosis is a disease in which tissue **similar to the lining of the uterus grows outsidethe uterus**. It can cause severe pain in the pelvis and make it harder to get pregnant.
- **Endometriosis can start at a person's first menstrual period** and last until menopause.
- With endometriosis, tissue similar to the lining of the uterus grows outside the uterus. This leads to inflammation and scar tissue forming in the pelvic region and (rarely) elsewhere in the body.
- **The cause of endometriosis is unknown**. There is no known way to prevent endometriosis. There is no cure, but its symptoms can be treated with medicines or, in some cases, surgery.
- **It causes a chronic inflammatory reaction** that may result in the formation of scar tissue (adhesions, fibrosis) within the pelvis and other parts of the body.
- <u>Symptoms:</u> Endometriosis often causes severe pain in the pelvis, especially during menstrual periods. Some people also have pain during sex or when using the bathroom. Some people have trouble getting pregnant.
- <u>Causes:</u> Endometriosis is a complex disease that affects many women globally from the onset of their first period (menarche) through menopause, regardless of ethnic origin or social status.
- <u>Impact:</u> Endometriosis has significant social, public health and economic implications. It can decrease quality of life due to severe pain, fatigue, depression, anxiety and infertility.
- <u>Prevention:</u>At present, there is no known way to prevent endometriosis. Enhanced awareness, followed by early diagnosis and management may slow or halt the natural progression of the disease and reduce the long-term burden of its symptoms, including possibly the risk of central nervous system pain sensitization. Currently there is no cure.

Why in news?

- A team of doctors from Tamil Nadu along with scientists from Japan have developed a disease- modifying treatment for Duchenne Muscular Dystrophy (DMD), a rare genetic disease, using a food additive — a beta-glucan produced by N-163 strain of a yeastAureobasidiumpullulans.

About Dystrophy

- DMD is a rare genetic disease that affects only male children. There are approximately 5,000 patients in Japan and 80,000 in India.
- Muscles need lubricant. Dystrophin, an enzyme secreted in the muscles, helps in wear and tear and regeneration of muscles. Because of the genetic disorder, muscles cannot produce dystrophin.
- Boys born before 1970 had a median lifespan of around 18 years. After anti-inflammatory medications and steroids, the longevity increased. Disease modifying treatments have prolonged the lifespan but despite that, patients die when they are aged 28 to 30 years.
- Currently available treatments were gene therapy, Exon-skipping and disease modifying agents (anti-inflammatory medicines such as steroids.
- The six-month-long clinical study screened 27 children with DMD — 18 in treatment arm and nine in control arm. Along with regular treatment, the participants, all aged above three years, were given the beta-glucan in the form of a food supplement.

About Duchenne Muscular Dystrophy (DMD)

Caused by	• **DMD is caused by a** genetic disorder **that prevents the muscles from producing dystrophin, an** enzyme that acts as a lubricant **and helps in muscle repair and regeneration.** • **DMD is one of four conditions known as dystrophinopathies.**
Symptoms	• DMD symptom onset is in early childhood, usually **between ages 2 and 3**. The disease primarily affects boys, but in rare cases it can affect girls.
DMD carriers	• **DMD carriers are females** who have a normal dystrophin gene on one X chromosome and an **abnormal dystrophin** gene on the other **X chromosome**. Most carriers of DMD do not themselves have signs and symptoms of the disease, but a minority do.
Treatment	• The current treatments for DMD includegene therapy, Exon-skipping and disease-modifying agents (such as steroids) that reduce inflammation and slow down the progression of the disease. However, these treatments are not curative and have side effects.

Why in news?

- On the occasion of World Fragile X Day, which raises awareness about the rare genetic illness — Fragile X or Martin-Bell syndrome — that causes intellectual disability and autism.

About Syndrome

- ShaliniKedia, founder and chairperson of Fragile X Society India, said lighting up India Gate in teal ,is symbolic as the topic of intellectual disabilities has been kept in the dark for long˙.
- Parents of children who suffer from Fragile X were also present at the event and raised concerns. Said Meena Sharma, ,My 22-year-old son has Fragile X but he is competent in many tasks. Due to the taboo attached to intellectual disabilities, there aren't any jobs available for him.˙
- Union Minister of Tribal Affairs ArjunMunda, who was at the event, said, ,I would like to encourage people to spread awareness… everyone has abilities, which is why this is a campaign we all believe in and appreciate.˙

Why in news?
- Recently, the United Nations' (UN) 'AI for Good' Global Summit was organized in Geneva.

About AI for Good Global Summit:
- "**AI for Good**" is an organized by the **International Telecommunication Union (ITU),** in partnership with 40 UN sister agencies, and co-convened with the Government of Switzerland.
- AI for Good Global Summit **aims** to identify practical applications of artificial intelligence (AI) to accelerate progress towards the SDGs and connect AI innovators with public and private sector decision makers to help scale AI solutions globally.
- It prioritizes **trusted, safe, and inclusive development** of AI technologies.

2023 AI For Good Global Summit:
- The AI for Good Global Summit 2023 in Geneva, aimed at **accelerating the world's achievement of the 2030 targets of** the United Nations-mandated Sustainable Development Goals **(SDG).**
- The **51 robots** were part of the **Robotics for Good exhibition** and several were speakers at the summit.
- It was first-of-its-kind press conference where journalists posed questions to an all-robot panel.

About Advanced humanoid robots:
- A humanoid robot is like a human body in shape.
- They have skin and eyes, but not flesh or bones.
- These robots are **professional service robots** built for interaction with human tools and customer service.
- These humanoid robots are also used for inspection and maintenance.
- Examples of most Advanced Humanoid Robots:
  - **Sophia** - First robot Innovation Ambassador for the United Nations Development Programme (UNDP).
  - **Ameca** - It represents an ideal platform to explore how machines can live with, collaborate, and enrich humanity in tomorrow's sustainable communities
  - **Grace** - An advanced nursing humanoid robot.

Why in news?
- China has recently unveiled its first open-source desktop operating system, called OpenKylin. Developed by a community of approximately 4,000 developers, OpenKylin provides users with access to the system's source code, allowing for modifications and customization.

About the OpenKyline
- An open-source desktop programme called OpenKyline 1.0 was created by a collection of Chinese businesses, most notably China Electronic Corp.
- A group of roughly 4,000 engineers produced the Linux operating system known as OpenKylin as of version 1.0.
- Users of OpenKylin can readily edit the software's source code as they see fit, in contrast to Microsoft and Apple, which maintain the inner workings of Windows and MacOS a secret.
- The introduction of OpenKylin is considered as the most recent endeavor in the creation of homegrown software. Homegrown software is seen as essential for serving as a pillar for advancing the development of new infrastructure and the digital economy.
- Benefits of using OpenKylin in many industries include:
- Using OpenKylin, the indigenous operating system is improved because updating and iteration.
- Security in crucial sectors including government affairs, communications, energy, and transportation is ensured by OpenKylin.
- To assist the nation's IT industrial chain, Openkylin will offer trustworthy essential software services.

Why in news?

- The Seventh edition of the Indian Navy – US Navy (IN – USN) Salvage and Explosive Ordnance Disposal exercise, SALVEX was conducted from 26 Jun – 06 Jul 23 at Kochi. IN and USN have been participating in joint Salvage and EOD exercises since 2005.

About the exercise

- The exercise saw participation from both the navies which included the ships – INS Nireekshak and USNS Salvor in addition to Specialist Diving and EOD teams.
- Spanning over 10 days, the Diving teams of both countries shared experiences on Maritime Salvage and trained together in various facets of EOD Operations on land as well as at sea. SALVEX also saw the conduct of joint training exercises towards enhancing interoperability, cohesiveness and gaining from best practices mutually in Maritime Salvage and EOD operations.

Why in news?

- Kanpur's Indian Institute of Technology (IIT) has created an indigenous version of the Kamikaze drone (a form of suicide drone).

About the drones

- The suicide drone can carry a 6 kg bomb for up to 100 km. The drones are equipped with delayed technology that allows them to avoid radar detection.
- The indigenously built drones are capable of neutralising enemy targets even in the absence of Global Positioning Support (GPS) support in enemy territory, thanks to artificial intelligence (AI)-enabled visual guidance system.
- The battery-powered UAVs can transport a payload of up to 100 kilometres in 40 minutes, enhancing the armed forces' offensive capabilities. IIT Kanpur-developed drone would be self-sufficient while flying. The machine can also make decisions based on an algorithm.

Why in news?

- The Indian Navy is hosting the bilateral Japan-India Maritime Exercise 2023 (JIMEX 23), which takes place at Visakhapatnam.

About JIMEX 2023

- JIMEX 2023 edition marks the 11th anniversary of JIMEX, since its inception in 2012.
- This exercise will witness the participation of INS Delhi, INS Kamorta, fleet tanker INS Shakti, a submarine, maritime patrol aircraft P8I and Dornier, ship-borne helicopters and fighter aircraft.
- The exercise will be conducted over six days in two phases.
- A harbour Phase at Visakhapatnam comprising professional, sports and social interactions.
- The two navies will jointly hone their war fighting skills at sea and enhance their interoperability through complex multi-discipline operations in the surface, sub-surface and air domains.
- JIMEX 23 provides an opportunity to learn from each other's best practices and facilitates operational interactions between IN and JMSDF to foster mutual cooperation and reaffirm their shared commitment towards maritime security in the region.

CYBERCRIMES

Why in news?
- The Minister of State for Home Affairs has highlighted the various steps taken to deal with cybercrimes in India in a reply to a question in the LokSabha.

Initiatives taken by the Union Government in addressing cyber crimes
- National Cyber Forensic Laboratory (Investigation) provides early-stage cyber forensic assistance to Investigating Officers (IOs) of all State/UT Police both through online and offline modes. It also conducts advanced cyber forensic analysis of digital evidence and provides expert opinions in court cases.
- CyTrain Portaloffers online courses on critical aspects of cybercrime investigation, forensics, and prosecution, along with certification. It aims to build the capacity of police officers, judicial officers, and prosecutors in handling cybercrime cases effectively and efficiently.
- Training Programs have been prepared for police personnel, public prosecutors, and judicial officers to enhance their skills in handling cybercrime investigations and prosecutions. The training covers topics such as cyber law, cybercrime trends and challenges, cybercrime investigation tools and techniques, digital evidence collection and preservation, cyber forensics, cybercrime prosecution and adjudication, etc.
- National Cyber Crime Reporting Portal allows the public to report incidents of cybercrimes, with special attention to cyber-crimes against women and children. The reported incidents are converted into FIRs and addressed by the concerned State/UT Law Enforcement Agencies. The portal also provides awareness material on various types of cybercrimes and preventive measures.
- Citizen Financial Cyber Fraud Reporting and Management System was launched to report financial frauds and prevent fund siphoning by fraudsters. A toll-free Helpline number '1930' has been provided for lodging online cyber complaints. The system also enables the blocking or freezing of bank accounts or credit/debit cards involved in fraudulent transactions within a stipulated time frame.
- Central Assistance for Modernization of Police by the Ministry of Home Affairs to States and UTs for upgrading their police forces with modern weapons, training gadgets, communication/forensic equipment, and Cyber Policing equipment.

Nomadic Elephant – 2023

Why in news?
- Indian and Mongolian soldiers will participate in a joint exercise called 'Nomadic Elephant 2023' aimed at improving their skills and capabilities.

About Nomadic Elephant 2023:
- It will be the 15th edition of the exercise between India and Mongolia.
- It is scheduled at Ulaanbaatar, Mongolia.
- It aims to build positive military relations, exchange best practices, and develop inter-operability, bonhomie, camaraderie and friendship between the two armies.

India and UN Report on Children and Armed Conflict

Why in news?
- India no longer figures in the United Nations General Assembly Security Council Children and Armed Conflict Report of the Secretary-General in view of measures taken by the Government to better protect children

About the report
- The report stated that the decision was based on "measures taken by the government to better protect" children affected by violence and insecurity. It acknowledged the positive engagement of the Indian government with the special representative of the UN Secretary-General on children and armed conflict, which had been noted in the previous report as a possible reason for the removal of India from the list.
- This is the first time since 2010 that India has not been named in the report alongside countries like Burkina Faso, Cameroon, Lake Chad basin, Nigeria, Pakistan and the Philippines, where grave violations against children in situations of armed conflict are documented.

- The Ministry of Women and Child Development attributed this achievement to various policies and institutional changes introduced since 2019, such as the National Action Plan for Children Affected by Armed Conflict, the Juvenile Justice (Care and Protection of Children) Amendment Act, 2021, and the strengthening of child protection mechanisms at the state and district levels.

About Children and Armed Conflict Report:
- The Special Representative of the Secretary-General for Children and Armed Conflict serves as the leading UN advocate for the protection and well-being of children affected by armed conflict.
- The annual report presents a comprehensive picture of child soldiers, highlights the disproportionate impact of war on children and identifies them as the primary victims of armed conflict.
- The first Special Representative for Children and Armed Conflict was named in 1997 by the Secretary-General to help enhance the protection of children affected by armed conflict, and foster international cooperation to that end.
- The Special Representative must also raise awareness about the plight of these children, and promote the monitoring and reporting of abuses.
- In accordance with the mandate, the Special Representative reports annually to the General Assembly and the Human Rights Council.
- United Nations Convention on the Rights of the Child (UNCRC)
- It is an international agreement that is legally binding on the members.
- It consists of 54 articles that spell out various children's rights and also the measures governments should take in order to make these rights available to children.
- The CRC was adopted by the United Nations in 1989. It entered into force in 1990 after receiving the minimum of 20 ratifications.
- It has been ratified by all members of the UN except for the United States. It is the most widely ratified human rights treaty in the history of the world.
- Under the articles of the convention, all parties to it are required to ensure that children's basic needs are fulfilled and they are able to reach their full potential.

Rights of the Child
- The convention identifies a child as a human being below the age of 18. The CRC acknowledges that every child is entitled to fundamental rights, and some of the most important rights are as follows:
  - Right to life, survival and development.
  - Right to education that facilitates them to reach their full potential.
  - Right to protection from abuse, violence or neglect.
  - Right to express opinions and be heard.
  - Right to be raised by or have a relationship with their parents.
  - Core principles of the Convention on the Rights of the Child
  - Non-discrimination
  - Right to life, survival and development
  - Best interests of the child
  - Respect for the child's views

INDIA – FRANCE Maritime Partnership Exercise | Defence & Security

Why in news?
- The Exercise included tactical manoeuvres, replenishment at sea approaches, air defence against fighter aircraft and cross deck helicopter operations.
- Location: Bay of Bengal.
- The Partnership Exercise signifies the strong navy-to-navy links, interoperability and strong bonds between Indian Navy and French Navy.
- Other Exercises with France:
  - VARUNA: NAVAL EXERCISE
  - FRINJEX: MILITARY EXERCISE
  - GARUDA: AIR FORCE EXERCISE

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