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# Current Affairs (CONSOLIDATION)

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# Polity and Governance

## Highlights

- Green Energy Push Slowed Down: Report
- Cauvery River Water Dispute
- Airspace Map of India
- EC Seeks Deregistration of Inactive Political Parties
- Meghalaya Enterprise
- Architecture Project (MeghEA)
- Steps Towards Abatement of Air Pollution: CAQM
- Medical Device Parks Scheme
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- Curb on Foreign Funding of NGOs
- Seed Capital Module for SHGs
- Aapada Mitra Programme
- Contempt of Court
- Special Category Status

## Green Energy Push Slowed Down: Report

### Why in News

According to a report, the lockdowns slowed renewable energy installations in the country and the pace of such installations is lagging India's 2022 target.

- The report was released by the Institute for Energy Economics and Financial Analysis (IEEFA). IEEFA is a US non-profit corporation.
- India stands at 4<sup>th</sup> position in the world in terms of installed Renewable Energy capacity, 5<sup>th</sup> in solar and 4<sup>th</sup> in wind.

### Key Points

- Highlights of the Report:
  - Solar Energy Capacity:
    - India has managed to install only 43.94 GW of solar energy capacity till 31<sup>st</sup> July 2021.
      - India was to have installed 100 GW of solar energy capacity by March 2023 - 40 GW rooftop solar and 60 GW ground-mounted utility scale.

### Green Energy Capacity:

- Only 7 GW of green energy capacity was added in FY 2020/21.
  - India had set a target of 175 GW renewable power installed capacity by the end of 2022 and 450 GW by 2030.

### Power Traded Amount:

- The amount of the power traded increased by 20% over 2020, by 37% compared to 2019 and by 30% over 2018.
  - This led to prices on average increasing by 38% compared to 2020, by 8% compared to 2019 and by 11% over 2018.

### Coal Stocks:

- It hit a new record high of 1,320 lakh tonnes (Mt) and exceeded the monthly averages of the previous five years.
- However, an analysis of the daily coal stock position exhibited a "deterioration" as more plants reported supplies were critical.

### Suggestions:

- The challenge of India's growing daily peak demand does not require investment in excess baseload thermal capacity.

Note:



- Instead, the electricity system needed “flexible and dynamic generation solutions” such as battery storage, pumped hydro storage, peaking gas-fired capacity and flexible operation of its existing coal fleet.
- Government should **accelerate deployment of such sources** to help meet peak demand and also balance the grid at a lower cost.
- Their prices were falling and so would be cost effective and a buffer against very high prices at the power exchange during peak demand.

#### India's Initiatives for Renewable Energy

- **National Solar Mission (NSM)**
- **The Wind Energy Revolution**
- **National Biofuels Policy and SATAT**
- **Small Hydro Power (SHP)**
- **National Hydrogen Energy Mission (NHEM)**
- **Production-Linked Incentive (PLI) Scheme**
- **National Biofuels Policy and SAYAY**

## Cauvery River Water Dispute

### Why in News

Recently, the **Cauvery Water Management Authority (CWMA)** directed Karnataka to immediately release the **balance quantum of water to Tamil Nadu**.

- However, CWMA **dropped discussion on the Mokedatu reservoir project** following “strong protest” from Tamil Nadu, Kerala and Puducherry.

### Key Points

- **Cauvery Water Dispute:**
  - **About:**
    - It involves **3 states and one Union Territory** (Tamil Nadu, Kerala, Karnataka and Puducherry).
    - The genesis of the dispute is 150 years old and dates back to the two **agreements of arbitration in 1892 and 1924** between the then Madras presidency and Mysore.
    - It entailed the principle that the **upper riparian state must obtain consent of lower riparian state** for any construction activity viz. reservoir on the river Cauvery.
  - **Recent Developments:**

- From **1974, Karnataka started diverting water into its four newly made reservoirs**, without the consent of Tamil Nadu **resulting in a dispute**.
- To resolve the matter, the **CWDT (Cauvery Water Disputes Tribunal) was established in 1990** which took 17 years to arrive at the **final order (2007)** on how Cauvery water should be shared between the 4 riparian states in normal rainfall conditions.
  - CWDT was constituted by the Central Government, in exercise of the powers conferred by section 4 of the **Inter-State River Water Disputes Act, 1956**.
- In distress years, a pro-rata basis shall be used, it instructed. The **government** again took 6 year and **notified the order in 2013**.
- This was **challenged in SC (Supreme Court)** which directed Karnataka to release 12000 cusecs of water to Tamil Nadu prompting protests in the State.
- The **final verdict of the SC came in 2018** where it declared the **Cauvery a national asset** and largely upheld the water-sharing arrangements finalised by the CWDT and also reduced the allocation of water from Karnataka to Tamil Nadu.
  - As per the SC, Karnataka would get 284.75 thousand million cubic feet (tmcft), Tamil Nadu 404.25 tmcft, Kerala 30 tmcft and Puducherry 7 tmcft.
  - It also **directed the Centre to notify the Cauvery Management Scheme**. The central government notified the ‘Cauvery Water Management Scheme’ in June 2018, constituting the ‘**Cauvery Water Management Authority**’ and the ‘Cauvery Water Regulation Committee’ to give effect to the decision.
- **Mekedatu Reservoir Project:**
  - It aims **to store and supply water for drinking purposes for the Bengaluru city**. Around **400 megawatts (MW) of power** is also proposed to be generated through the project.
  - In **2018, Tamil Nadu approached the SC** against the project even if Karnataka had held that it would not affect the flow of water to Tamil Nadu.
    - TN is opposed to any project being proposed in the upper riparian unless it was approved by the SC.

Note:

### River Cauvery

- It is known as 'Ponni' in Tamil, also known as **Ganga of the south**, and it is the **fourth largest river of southern India**.
- It is a sacred river of southern India. It **rises on Brahmagiri Hill of the Western Ghats in southwestern Karnataka state**, flows in a southeasterly direction through the states of Karnataka and Tamil Nadu, and descends the **Eastern Ghats** in a series of great falls and drains into Bay of Bengal through Pondicherry.



- Some of its **tributaries** are Arkavathi, Hemavathi, Lakshmana Theertha, Shimsa, Kabini and Harangi.

## Airspace Map of India

### Why in News

Recently, the **Ministry of Civil Aviation** has launched an **airspace map of India for drone operations**, which shows **red, yellow and green zones** across the country.

- It will **allow civilian drone operators to check the demarcated no-fly zones** or where they need to undergo certain formalities before flying one.
- Earlier, the '**Liberalised Drone Rules, 2021**' based on "trust, self-certification and non-intrusive monitoring" was unveiled and also the **Production-Linked Incentive (PLI) scheme** for the drone industry was announced.

### Key Points

- **About:**
  - **Green Zone:**
    - It is the **airspace up to 400 feet** that has not been designated as a red or yellow zone, and up to 200 feet above the area located between 8-12 km from the perimeter of an operational airport.

- **No permission is required** for operating drones with an all-up weight of up to 500 kg.
- **Yellow Zone:**
  - It is the airspace above **400 feet in a designated green zone**, and above 200 feet in the area located between 8-12 km from the perimeter of an airport, and above ground in the area located between 5-8 km from the perimeter of an airport.
  - **Require permission from the concerned air traffic control authorities** - which could be either the Airports Authority of India, the Indian Air Force, the Indian Navy, Hindustan Aeronautics Ltd, etc as the case may be.
- **Red Zone:**
  - It is the '**no-drone zone**' within which drones can be operated **only after a permission from the Central government**.

### ➤ The Drone Rules, 2021:

- The aim of the Rules is to **create a 'digital sky platform' ("the Platform")** which is a business-friendly single-window online system, with minimum human interference, where most of the permissions will be self-generated.
- The Rules have **reduced the red-tape** involved in the process of seeking compliance:
  - Quantum of fee has been **reduced to nominal levels** and delinked with size of the drone.
  - Easier process is **specified for transfer and deregistration of drones** through the digital sky platform.
  - **Nano and model drones** (made for research or recreation purposes) are exempt from type certification.
- **Coverage of drones** under Drone Rules, 2021 has been **increased from 300 kg to 500 kg**. This will **cover drone taxis also**.
- **Type Certificate is required only when a drone is to be operated in India**. Importing and manufacturing drones purely for exports are exempt from type certification and unique identification number.
- **Drone corridors** will be developed for cargo deliveries.

### Drone Rules

- **About:**

Note:

- Drone is a layman's term for **Unmanned Aircraft (UA)**. There are **three subsets** of UA- **Remotely Piloted Aircraft, Autonomous Aircraft and Model Aircraft**.

- Remotely Piloted Aircraft consist of remote pilot station(s), the required command and control links and any other components, as specified in the type design.

- **Remotely piloted aircraft** have been divided into **five categories** based on their weight (existing rules) -

- Nano : Less than or equal to 250 grams.
- Micro : From 250 grams to 2kg.
- Small : From 2 kg to 25kg.
- Medium : From 25kg to 150kg.
- Large : Greater than 150kg.

#### ➤ Importance:

- Drones **offer tremendous benefits** to almost all sectors of the economy.
- These include – agriculture, mining, infrastructure, surveillance, emergency response, transportation, **geo-spatial** mapping, defence, and law enforcement to name a few.
- Drones can be **significant creators of employment and economic growth** due to their reach, versatility, and ease of use, especially in India's remote and inaccessible areas.
  - Recently, the **Telangana government** has selected 16 Primary Healthcare Centres (PHCs) for pilot testing the ambitious '**Medicine from the sky**', the first-of- its-kind project. The project involves **delivery of medicines through multiple drones**.

## EC Seeks Deregistration of Inactive Political Parties

### Why in News

Recently, the **Election Commission of India (ECI)** has notified the updated list of registered political parties, seeking **deregistration of parties which do not contest elections**, also it raised concerns over misuse of income tax exemption law.

### Key Points

#### ➤ About:

- There are **over two thousands registered unrecognised parties**, and the EC has sought the power to **deregister (Cancel registration)** inactive parties over fears of such entities misusing **income tax exemption law**.
- ECI also **pushes for a wide range of electoral reforms** to usher in **digitisation**, removing duplication of voters and enabling **remote voting** for **Non-Resident Indians (NRIs)**, even **migrant workers** within the country.

### The Money Laundering Angle

It is suspected that several unrecognised parties may be engaged in money laundering, given the I-T exemptions they enjoy

The number of registered unrecognised parties increased from 1,112 parties in 2010 to 2,301 in 2019, and now is over 2,700

Although unrecognised, these parties netted ₹65 crore in 2018-19 and ₹24.6 crore in 2017-18

ADR assessments show maximum unregistered parties in UP and the highest donations going to such parties in Gujarat

#### ➤ Power of Deregistration:

- The ECI is **not empowered to de-register parties** on the grounds of violating the Constitution or breaching the undertaking given to it at the time of registration.
- ECI has the power to register parties under the **Representation of the People Act, (RPA) 1951**, but it does not have the **power to deregister parties** that are inactive.
- A party can only be **de-registered** if its registration was **obtained by fraud**; if it is **declared illegal** by the Central Government; or if a party **amends its internal Constitution** and notifies the ECI that it **can no longer abide by the Indian Constitution**.

#### ➤ Related Concern:

- It is suspected that **several unrecognised parties may be engaged in money laundering**, given the income tax exemptions they enjoy.
  - The Association of Democratic reforms, a watchdog NGO on electoral issues, has reported that the number of registered unrecognised political parties has increased twofold in the last 10 years.
- Section **13A** of the **Income Tax Act, 1961** has **given 100% exemption to political parties** on its income from house property, income from other sources, capital gains and voluntary contributions received from any person however, subject to certain conditions.

Note:

### ➤ Other Challenges for ECI:

#### ○ Undefined Scope of Powers:

- There exists a considerable amount of **confusion** about the **extent and nature of the powers** which are available to the ECI in enforcing the **Model Code of Conduct (MCC)** and other decisions related to elections.
- The code does not say what the ECI can do; it contains only guidelines for the candidates, political parties, and the governments.

#### ○ No Legal Backing of MCC:

- MCC is framed on the basis of a consensus among political parties, it has **not been given any legal backing**.
- However, it does not have statutory value, and it is enforced only by the moral and constitutional authority of the EC.

#### ○ Transfer of Officials:

- One of the major concerns is the abrupt transfer of senior officials working under State governments by an order of the commission.
- The transfer of officials is governed by rules made **under Article 309 of the Constitution** which **cannot be bypassed by the ECI** under the purported exercise of the power conferred by Article 324.

#### ○ Conflict With the Law:

- According to the MCC, Ministers cannot announce any financial grants in any form, make any promise of construction of roads, provision of drinking water facilities, etc or make any ad hoc appointments in the government.
- However, **section 123 (2)(b) of the RPA, 1951** says that the declaration of a public policy or the exercise of a legal right will not be regarded as interfering with the free exercise of the electoral right.

#### ○ Lack of Enforceability:

- The EC **does not have the power to disqualify candidates** who commit electoral malpractices. At best, it may direct the registration of a case.
  - In the 2019 general election, ECI admitted to the Supreme Court that **it was “toothless”, and did not have enough powers to deal with inflammatory or divisive speeches** in the election campaign.

## Meghalaya Enterprise Architecture Project (MeghEA)

### Why in News

Recently, **Meghalaya Enterprise Architecture Project (MeghEA)** was launched.

- The project aims to **improve service delivery and governance for the people** using the power of **Digital technologies**.
- **Enterprise Architecture (EA)** is the process by which organizations standardize and organize IT (Information Technology) infrastructure to align with business goals.

### Key Points

#### ➤ About:

- The initiative is **spread across 6 pillars** i.e. Governance, Human Resources, Entrepreneurship, Primary Sector, Infrastructure and Environment, and envision **to make Meghalaya a high income state by 2030**.
- The initiative is in line with the vision of **Digital India** that focuses on transforming India into a digitally empowered society and knowledge economy.
- With the notification of **India Enterprise Architecture (IndEA) in 2018**, design and implementation of integrated, nationally portable and scalable digital platforms have gained a new momentum.

#### ➤ India Enterprise Architecture (IndEA):

- IndEA is a framework for developing a holistic architecture **treating the Government as a single enterprise** or more realistically, **as an Enterprise of Enterprises**, which are functionally interrelated.
- It is a structured combination of several Reference Models that, together, **enable a boundary-less flow of information across the length and breadth of the government** and **facilitate the delivery of integrated services to the stakeholders**, namely, the citizens, businesses and employees.
  - IndEA framework comprises **8 Reference Models**, viz., Business, Application, Data, Technology, Performance, Security, Integration and Architecture Governance.
- It is a comprehensive and convenient framework for developing Enterprise Architecture **to support Information and Communication Technology (ICT) enabled transformation across governments**.

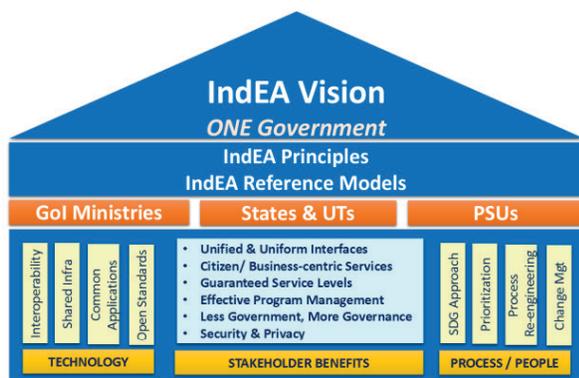
Note:



- It is a way to establish **Unity in Diversity in the domain of e-Governance**.
  - **Federated Architectural Pattern** is chosen for the IndEA framework for better administrative feasibility, need for decentralization of implementations, on-boarding of legacy/ongoing efforts of e-Governance and above all, the need for state governments to have the flexibility to build state specific ICT services.

#### ➤ **Benefits of IndEA:**

- Provide a **ONE Government Experience** to the citizens and businesses.
- Enhance the **efficiency of delivery of services**.
- Improve the effectiveness of **implementation of the developmental and welfare schemes** through a holistic performance management.
- Enhance the **productivity of employees and agencies** through easy access to information.
- **Bring in flexibility and agility** in making changes to the systems to align with the best practices and to leverage the latest technologies.
- **Realize cost-effectiveness** through use of shared infrastructure and services.
- Maintain the **right balance between security of data and privacy of personal information**.



## Steps Towards Abatement of Air Pollution: CAQM

### Why in News

The **State Governments of Punjab, National Capital Region (NCR) States** and **Government of National Capital Territory of Delhi (GNCTD)** have developed detailed monitorable action plans based on the framework by the

**Commission for Air Quality Management (CAQM)** to tackle the problem of air pollution.

- The newly constituted commission (**CAQM**) has sweeping powers in controlling air pollution in Delhi-NCR.
- Also, recently, the **World Health Organisation (WHO)** has released new **Global Air Quality Guidelines (AQGs)**.

### Key Points

➤ **Framework of the Commission:** The CAQM has directed for implementation of the action, based on following components of the framework:

- **In-situ Crop Residue Management**- Supported by the CRM (Crop Residue Management) Scheme of the Ministry of Agriculture.
- Ex-situ Crop Residue Management.
- Prohibition of **Stubble/Crop Residue Burning**.
- Effective monitoring/enforcement.
- Plans/Schemes to reduce the generation of paddy straw.
- Information, Education and Communication (IEC) activities for the Plan of Action.

### ➤ **Action Plans:**

- **Recording Fire Counts:** Adopting a **Standard protocol developed by ISRO** for recording and monitoring the fire counts owing to Stubble burning.
- **In-situ Crop Residue Management :** The **PUSA Bio-Decomposer technology** application is planned in **NCR States**.
- **Ex-situ Crop Residue Management:** Promoting utilization of Paddy Straw Pellets/Briquettes for **Co-firing in Thermal Power Plants**.
- **Abatement of Dust:** Establishing a “Dust Control and Management Cell”.
  - Monitoring construction and demolition through a dedicated Web-portal and Video fencing of projects.
  - Installation of **Anti-smog guns** and screens at construction sites, **dust-suppressants and water mist**, transportation of materials in covered vehicles, installation of air quality monitoring sensors in project sites and Self-audit and certification mechanism by the project agencies are the key steps towards management of dust from construction and demolition project activities.

Note:

- **Industrial Pollution:** Shifting of Industries to **Piped Natural Gas (PNG)/Cleaner Fuels** should be a priority.
- **Vehicular Pollution:** The Commission has issued an advisory for “**Mandating procurement of zero emission and e-vehicles**” to give a further push to clean technologies in the transport sector and a gradual shift towards **zero emission vehicles/ e-mobility** and progress reviewed.
  - All the identified 124 border entry points of Delhi have now been provided with **RFID system** to facilitate **cashless toll/ cess collection** thus avoiding huge traffic congestions and resultant heavy air pollution at the border points.
- **Monitoring:**
  - A **dedicated taskforce** envisaged in each NCR state to continuously monitor and take steps regularly to ensure smooth traffic management, including developing an “**Intelligent Traffic Management System**” (ITMS).
  - **Petrol/Diesel vehicles more than 15/10 years old are not permitted to ply** in NCR and progress is reviewed periodically.
  - **State-wise action plans** have also been prepared for **control of Biomass/Municipal Solid Waste Burning and fires in Landfill Sites**.
  - A **Decision Support System (DSS)** for **Air Quality Emergency response**.

## Medical Device Parks Scheme

### Why in News

Recently, the **Ministry of Chemicals and Fertilizers** has launched the **Scheme for “Promotion of Medical Device Parks”** to support the medical devices industry in line with **Atmanirbhar Bharat**.

### Key Points

- **About:**
  - The medical device industry is a unique blend of engineering and medicine. It **involves the creation of machines that are used to support life within the human body**.
  - Medical devices **include Surgical Equipment, Diagnostic equipment** like Cardiac imaging, CT scans, X-ray, Molecular Imaging, MRI and

Ultrasound-imaging including hand - held devices; **Life Support equipment like ventilator**, etc. as well as **Implants and Disposables**.

### ➤ Objectives:

- The **easy access to standard testing and infrastructure facilities** through the creation of world-class common infrastructure facilities via medical device parks.
- To reduce the cost of production of medical devices and the **better availability and affordability of medical devices** in the domestic market.

### ➤ Financial Assistance:

- The total financial outlay of the scheme is Rs 400 crore and the **tenure of the scheme is from FY 2020-2021 to FY 2024-2025**.
- Financial assistance to a selected Medical Device Park would be **70% of the project cost of common infrastructure facilities**.
  - In the case of the **North-Eastern States** and the Hilly States, financial assistance would be **90% of the project cost**.
- **Maximum assistance** under the scheme for one Medical Device Park would be **limited to Rs. 100 crores**.
- The Centre has granted **in-principle approval for the parks in Himachal Pradesh, Tamil Nadu, Madhya Pradesh and Uttar Pradesh**.

### ➤ Medical Devices Sector in India:

- The Medical Devices industry in India is valued at USD 5.2 billion, contributing about 4-5% to the USD 96.7 billion Indian healthcare Industry.
- Medical devices sector in India is very small in size as compared to the rest of the manufacturing industry, though **India is one of the top twenty markets for medical devices in the world and is the 4<sup>th</sup> largest market in Asia after Japan, China, and South Korea**.
- India currently **imports 80-90% of medical devices** of the USD15 billion market.
  - The US, Germany, China, Japan, and Singapore constitute the five largest exporters of high technology medical equipment to India.

### ➤ Related Initiatives:

- In **June 2021**, the **Quality Council of India (QCI)** and the Association of Indian Manufacturers of Medical Devices (AiMed) launched the **Indian**

Note:



**Certification of Medical Devices (ICMED) 13485 Plus scheme** to undertake verification of the quality, safety and efficacy of medical devices.

- To boost domestic manufacturing of medical devices and attract huge investments in India, the department of pharmaceuticals launched a **PLI scheme for domestic manufacturing of medical devices**, with a total outlay of funds worth Rs.3,420 crore for the period FY21-FY28.
- The **Ministry of Health and Family Welfare** has notified that **medical equipment would qualify as 'drugs' under Section 3 of the Drugs and Cosmetics Act (D & CA), 1940** from 1<sup>st</sup> April, 2020.
- The Medical Devices Parks have been **set up in Andhra Pradesh, Telangana, Tamil Nadu and Kerala**.
  - In 2020, Kerala established MedSpark, one of the **first medical device parks** in the country, in Thiruvananthapuram.
- The Government of India **recognised medical devices as a sunrise sector** under the **'Make in India' campaign** in 2014.

## Social Accountability

### Why in News

Recently, a **State-wide campaign has been launched in Rajasthan** for demanding passage of the **social accountability** law in the next Assembly session.

- In 2019, a **committee under the chairmanship of the former state election commission, Ram Lubhaya** was constituted to advise the government on the **drafting of the Social Accountability Bill and draft was submitted by the Committee in 2020**.
- The **Rajasthan Guaranteed Delivery of Public Service Act, 2011** and **The Rajasthan Right to Hearing Act (2012)** have already been around but they were repealed due to some major issues.

### Key Points

- **Social Accountability:**
  - It has been defined as an **approach towards ensuring accountability** that relies on civic engagement, i.e., in which ordinary citizens and citizen groups participate directly or indirectly in exacting accountability.

- In a **public sector context**, social accountability refers to a **wide range of actions and mechanisms** that citizens, communities, independent media and civil society organizations can use to hold public officials accountable.
- The **effectiveness and sustainability** of social accountability mechanisms is improved when they are institutionalized. This **involves two things:**
  - The **state as a 'willing accomplice'** in the broader accountability project, needs to render its own "internal" mechanisms in a way that makes it structurally amenable to accountability.
  - The state needs to **identify and adopt mechanisms to facilitate** and strengthen **civic engagement** and citizen voice.
- **Components of social accountability practice** include collection, analysis and dissemination of information, mobilisation of public support, advocacy and negotiation for change.
  - **Social audit** is a tool for social accountability and transparency.

### ➤ Major Principles of Social Accountability:

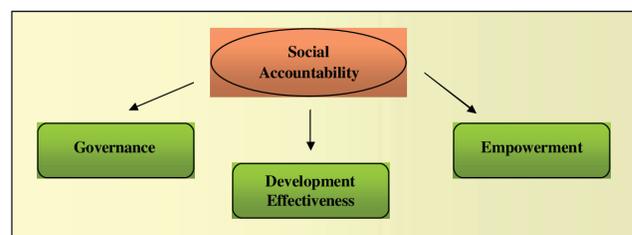
- **Jankari** (Information)
- **Bhagidari** (Involvement and participation of citizens)
- **Karyawahi** (Time bound action)
- **Suraksha** (Protection of Citizens)
- **Sunwai** (Citizen's right to be heard)
- **Janta Ka Manch** (Collective Platform)
- **Prasar** (Report Dissemination)

### ➤ Need:

- There are countless citizens who are **suffering from an inability to access their rights** and have their complaints redressed in a time-bound manner, while there was "no accountability of errant government officials".

### ➤ Significance:

- It **empowers every person to hold the government institutions and officials accountable** to them to deliver their rights as citizens.



Note:

- It **raises awareness** about the law and takes up a sustained advocacy for passage of the Bill in the next Assembly session.
  - The **mechanism for redressing grievances** will start from **village panchayats** and involve public hearings at the block level.
- It can **contribute to improved governance**, increased development effectiveness through better service delivery, and citizen empowerment.
- **Examples of Social Accountability Practices in India:**
  - Participatory Planning and Policy Formulation (Kerala)
  - Participatory Budget Analysis (Gujarat)
  - Participatory Expenditure Tracking System (Delhi, Rajasthan)
  - Citizens' Surveys/Citizen Report Cards (Bangalore, Maharashtra)
  - Citizen Charters (Andhra Pradesh, Karnataka)
  - Community Scorecards (Maharashtra, Andhra Pradesh)

## Ladakh Resident Certificate Order 2021

### **Why in News**

Recently, the Ladakh administration has decided to issue **Resident Certificate only to the Permanent Resident Certificate holders** of the region.

- This is **unlike J&K where new domicile laws also permit outsiders** to apply for **jobs, land and other facilities**.
- Earlier, when **Article 370 and Article 35A** of Indian constitution were in vogue in J&K and Ladakh, all jobs in the erstwhile state of J&K including Ladakh were exclusively reserved for permanent residents of the State.

### **Key Points**

- **About:**
  - Any person who possesses a **Permanent Resident Certificate (PRC)** issued by the **competent authority (Tehsildars) in the districts of Leh and Kargil** or belongs to a category of persons who would have been **eligible to be issued PRC** shall be eligible to receive the **Resident Certificate**.

- The Administration also **enhanced the upper age limit for entry into government services** against all posts.
  - The **age relaxation would be a one-time exception** and this relaxation shall remain in force for two years.
- **Objective:**
  - It is to **temporarily define Resident of Union Territory of Ladakh** for the purpose of **appointment to all the non-gazetted posts** borne on the establishment of any department or service of administration of Ladakh.
- **Permanent Residence Certificate (PRC):**
  - **About:**
    - It is a kind of **domicile certificate which helps people** in availing domicile linked quotas in government jobs and admission in educational institutions.
      - PRC in India is **issued by states** like Arunachal Pradesh, Assam, Mizoram, Meghalaya, Tripura and Manipur.
  - **Purpose:**
    - It is a legal document that **serves as a proof of residence** and thus must be submitted wherever a residence proof is required.
  - **Use:**
    - For **taking admission in educational organisations and job reservation** under specific quotas especially for government jobs, etc. to get **local preferences**.
    - For **obtaining a ration card** of the respective state and **cast the vote** in the elections.
    - For **availing the benefits of various schemes** of the state or to claim scholarships of the State.

## Ayushman Bharat Digital Mission

### **Why in News**

Recently, the **Ayushman Bharat Digital Mission** was launched by the Prime Minister through a video conference.

- The nationwide rollout of the project coincides with the **National Health Authority (NHA)** celebrating the third anniversary of **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY)**.

Note:

- **Ayushman Bharat** is a flagship scheme of India which was launched as recommended by the **National Health Policy 2017**, to achieve the vision of **Universal Health Coverage (UHC)**.

### Key Points

- **About:**
  - It aims to provide **digital health IDs** for all Indian citizens to help hospitals, insurance firms, and citizens access health records electronically when required.
  - The **pilot project of the Mission** had been announced by the Prime Minister from the ramparts of the **Red Fort on 15<sup>th</sup> August 2020**.
    - The project is being **implemented in the pilot phase in six States & Union Territories**.
- **Features of the Mission:**
  - **Health ID:**
    - It will be issued **for every citizen** that will also work as their health account. This **health account** will contain details of every test, every disease, the doctors visited, the medicines taken and the diagnosis.
    - Health ID is **free of cost, voluntary**. It will help in doing analysis of health data and lead to better planning, budgeting and implementation for health programs.
  - **Healthcare Facilities & Professionals' Registry:**
    - The other major component of the programme is creating a **Healthcare Professionals' Registry (HPR)** and **Healthcare Facilities Registry (HFR)**, allowing easy electronic access to medical professionals and health infrastructure.
    - The HPR will be a comprehensive repository of all healthcare professionals involved in delivering healthcare services across both modern and traditional systems of medicine.
    - The HFR database will have records of all the country's health facilities.
  - **Ayushman Bharat Digital Mission Sandbox:**
    - The Sandbox, created as a part of the mission, **will act as a framework for technology and product testing** that will help organisations, including private players intending to be a part of the **national digital health ecosystem** become a **Health Information Provider or Health Information User** or efficiently link with building blocks of Ayushman Bharat Digital Mission.

- **Implementing Agency:**
  - **National Health Authority (NHA)** under the Ministry of Health and Family Welfare.
- **Expected Benefits:**
  - **Ensure ease of doing business** for doctors and hospitals and healthcare service providers.
  - **Enable access and exchange of longitudinal health records** of citizens with their consent.
  - **Create integration within the digital health ecosystem**, similar to the role played by the **Unified Payments Interface (UPI)** in revolutionising payments.
- **Concerns:**
  - The **lack of a data protection bill** could lead to the misuse of data by private firms and bad actors.
  - **Exclusion of citizens and denied healthcare due to faults** in the system are also a cause of concern.



## Government Aid Not a Fundamental Right: SC

### Why in News

Recently, the **Supreme Court (SC)** ruled that **government aid to an institution is a matter of policy and it is not a fundamental right**.

- **Article 30 of the Constitution of India** (dealing with **rights of minorities to establish and administer educational institutions**) is subject to its own restrictions being reasonable.

Note:

### Key Points

- **Aid not a Fundamental Right:**
  - The right of an institution, whether run by a **majority or minority community**, to get government aid is not a fundamental right. Both have to **equally follow the rules and conditions of the aid**.
- **Reason:**
  - Government aid is a **policy decision**. It **depends on various factors** including the interests of the institution itself and the ability of the government to understand the exercise.
  - **Financial constraints and deficiencies** are the factors which are considered relevant in taking any decision while giving aid, including both the decision to grant aid and the manner of disbursement of an aid.
- **Withdrawal of Aid:**
  - If the government made a policy call to withdraw aid, **an institution cannot question** the decision as a matter of right.
  - If an **institution does not want to accept and comply with the conditions** accompanying such aid, it is well **open to it to decline the grant** and move in its own way. On the contrary, an institution can never be allowed to say that the grant of aid should be on its own terms.

#### Article 30

- **Article 30 (1):** All minorities, whether based on religion or language, **shall have the right to establish and administer educational institutions** of their choice.
- **Article 30(1A)** deals with the **fixation of the amount for acquisition of property** of any educational institution established by minority groups.
- **Article 30(2)** states that the government **should not discriminate** against any educational institution on the ground that it is under the management of a minority, whether based on religion or language, **while giving aid**.

## Draft Personal Data Protection Bill, 2019

### Why in News

Recently, the **Joint Parliamentary Committee (JPC)**

discussed the **Personal Data Protection Bill, 2019** and reopened it for consultations.

- It is expected to submit its report in the **Winter Session** of Parliament 2021.

### Key Points

- **About:**
  - It is commonly referred to as the **“Privacy Bill”** and intends to **protect individual rights by regulating the collection, movement, and processing of data** that is personal, or which can identify the individual.
    - In December 2019, Parliament approved sending it to the joint committee.
  - The Bill **gives the government powers to authorise the transfer** of certain types of personal data overseas and has given exceptions allowing government agencies to collect personal data of citizens.
  - The Bill divides the data into three categories and mandates their storage depending upon the type.
    - **Personal Data:** Data from which an individual can be identified like name, address, etc.
    - **Sensitive Personal Data:** Some types of personal data like financial, health-related, sexual orientation, biometric, genetic, transgender status, caste, religious belief, and more.
    - **Critical Personal Data:** Anything that the government at any time can deem critical, such as military or national security data.
  - It **removes the requirement of data mirroring** (in case of personal data). Only individual consent for data transfer abroad is required.
    - Data mirroring is the act of copying data from one location to a storage device in real-time.
  - It **mandates data fiduciaries to provide the government with any non-personal data** when demanded.
    - **Data Fiduciary:** It may be a service provider who collects, stores and uses data in the course of providing such goods and services.
    - **Non-Personal Data** refers to anonymised data, such as traffic patterns or demographic data. In September 2019, the government set up a **new committee** to recommend a framework to regulate non-personal data.

Note:

- The Bill requires **companies and social media intermediaries**, which are “**significant data fiduciaries**”, to enable users in India to voluntarily verify their accounts.
  - It would be visible in a “demonstrable and visible mark of verification, which shall be visible to all users of the service”.
  - This intends to decrease the anonymity of users and prevent trolling.
- A **Data Protection Authority** has been envisaged for ensuring the compliance of the law.
- It also mentions ‘**Right to be Forgotten.**’ It states that the “data principal (the person to whom the data is related) shall have the right to restrict or prevent the continuing disclosure of his personal data by a data fiduciary”.
- **Advantages:**
  - **Data localisation** can help law-enforcement agencies access data for investigations and enforcement and also increase the ability of the government to tax internet giants.
  - Instances of cyber-attacks (for example, **Spyware Pegasus**) and surveillance can be checked.
  - Social media, which is sometimes used to spread fake news, can be monitored and checked, preventing emerging national threats in time.
  - A strong data protection legislation will also help to enforce data sovereignty.
- **Disadvantages:**
  - Many contend that the **physical location of the data is not relevant** in the cyber world as the **encryption keys may still be out of reach** of national agencies.
  - National security or reasonable purposes are **open-ended and subjective terms**, which may **lead to intrusion of the state** into the private lives of citizens.
  - Technology giants like **Facebook and Google are against it** and have criticised the protectionist policy of data localisation as they are afraid it would have a domino effect in other countries as well.
    - It had been opposed by social media firms, experts and even ministers, who said that it had too many loopholes to be effective and beneficial for both users and companies.
  - Also, it may **backfire on India’s own young startups** that are attempting global growth, or on larger firms that process foreign data in India.

## Rail Kaushal Vikas Yojana

### Why in News

Recently, the Ministry of Railways launched **Rail Kaushal Vikas Yojana (RKVY)** under **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)**.

### Key Points

- **About:**
  - This is a skill development programme, where **training will be provided to youth with a special focus on jobs that are relevant to the Railways.**
  - The training will be provided in **four trades viz. Electrician, Welder, Machinist and Fitter** and other trades will be added by zonal railways and Production units based on regional demands and needs assessment.
  - Training will be provided to apprentices under the **Apprentice Act 1961.**
- **Objectives:**
  - To impart training skills to the youth in various trades **to bring qualitative improvement.**
  - To train **50,000 candidates** over the next three years.
- **Eligibility:**
  - Candidates who are 10<sup>th</sup> passed and between 18-35 years shall be eligible to apply. Participants in the scheme shall however have **no claim to seek employment in Railways** on the basis of this training.
- **Significance:**
  - The scheme will not only improve the employability of the youth but also upgrade the skills of self-employed and those who are working with contractors through reskilling and up-skilling.

### Pradhan Mantri Kaushal Vikas Yojana

- **About:**
  - **Launched in 2015**, it is a flagship program of the **Ministry of Skill Development and Entrepreneurship (MSDE).**
  - It aims to mobilize youth to take up **skill training with the aim of increasing productivity** and aligning the training and certification to the needs of the country.
    - Owing to the success of **PMKVY 1.0** wherein more than 19 lakh students were trained as

Note:

against the target of 24 lakh, the scheme was relaunched as **PMKVY 2.0 (2016-2020)** with an allocated budget of Rs. 12000 Crores that aimed to train 10 million youth by the year 2020.

- And further **PMKVY 3.0 was launched in 2021**, in a bid to empower India's youth with employable skills by making over 300 skill courses available to them. It envisages training of eight lakh candidates over a scheme period of 2020-2021 with an outlay of Rs. 948.90 crore.

#### ➤ Key Components:

- **Short Term Training:** Training as per **National Skills Qualification Framework (NSQF)** is provided to those who are either school/college dropouts or unemployed.
- **Recognition of Prior Learning (RPL):** An individual with a certain set of skills or with prior learning experience is assessed and certified under RPL with grade according to the NSQF.
- **Special Projects:** This component ensures training in special areas and premises of government bodies and corporate. It aims to encourage training in vulnerable and marginalized groups of society.
- **Training Partners (TPs)** are mandated to organize Kaushal and Rozgar Melas every six months, thus providing placement assistance to certified ones.

#### Other Related Initiatives

- **National Career Service Project.**
- **Skills Acquisition and Knowledge Awareness for Livelihood (SANKALP).**
- **Skills Strengthening for Industrial Value Enhancement (STRIVE).**
- **Kaushalacharya Awards.**
- **Scheme for Higher Education Youth in Apprenticeship and Skills (SHREYAS).**
- **Atma Nirbhar Skilled Employee Employer Mapping (ASEEM).**
- **Skill Certification.**
- **YuWaah Youth Skilling Initiative.**

## Caste Census

### Why in News

Recently, the Union government has filed an affidavit in the Supreme Court claiming that a **caste census of the**

**Backward Classes is administratively difficult and cumbersome.**

- The government's assertion came in response to a **writ petition** filed by the State of Maharashtra to gather Backward Classes' caste data in the State while conducting **Census 2021**.

### Key Points

#### ➤ Government's Stand Against the Caste Census:

- **Unusable data:** The Centre reasoned that even when the census of castes were taken in the pre-Independence period, the data suffered in respect of **"completeness and accuracy"**.
  - It said the caste data enumerated in the **Socio-Economic and Caste Census (SECC)** of 2011 is **"unusable"** for official purposes as they are **"replete with technical flaws"**.
- **Not an Ideal Policy Tool:** The government said caste-wise enumeration in the Census was **given up as a matter of policy from 1951**.
  - Further, the Centre explained that a population census was **not the "ideal instrument"** as many people may not register themselves in the census in the **event of hiding their caste**.
  - This may compromise the **"basic integrity" of the census**.
- **Administratively Difficult:** Besides, the government held that, it is too late now to enumerate caste into the Census 2021.
  - Planning and preparations for the census exercise started almost four years earlier and the preparations of Census 2021 are almost done.
- **Arguments in Favour of SECC:**
  - It will be useful to establish **statistical justification for preserving caste-based affirmative action programmes** or welfare schemes.
    - It may also be a **legal imperative**, considering that courts want 'quantifiable data' to support the existing levels of **reservation**.
  - Comprehensive exercise to enumerate the caste status of all households in the country will **help in identifying poor households and implement anti-poverty programmes**.

### Census, SECC & Difference

- **Census:**

Note:



- The origin of the Census in India goes back to the **colonial exercise of 1881**.
- Census has evolved and been used by the government, policymakers, academics, and others to capture the Indian population, access resources, map social change, **delimitation exercise**, etc.
- However, as early as the 1940s, W.W.M. Yeatts, Census Commissioner for India for the 1941 Census, had pointed out that “the census is a large, immensely powerful, but blunt instrument **unsuited for specialized inquiry.**”

#### ➤ SECC:

- SECC was conducted for the **first time since 1931**.
  - SECC is meant to canvass every Indian family, both in rural and urban India, and ask about their:
    - **Economic status**, so as to allow Central and State authorities to come up with a range of indicators of deprivation, permutations, and combinations of which could be used by each authority to define a poor or deprived person.
    - It is also meant to ask every person their **specific caste name** to allow the government to re-evaluate which caste groups were economically worse off and which were better off.
  - SECC has the **potential to allow for a mapping of inequalities at a broader level**.
- #### ➤ Difference Between Census & SECC:
- The **Census provides a portrait of the Indian population**, while the **SECC is a tool to identify beneficiaries** of state support.
  - Since the Census falls under the Census Act of 1948, **all data are considered confidential**, whereas according to the SECC website, “all the personal information given in the SECC is **open for use by Government departments** to grant and/or restrict benefits to households.”

## Front-of-Pack Labelling

### Why in News

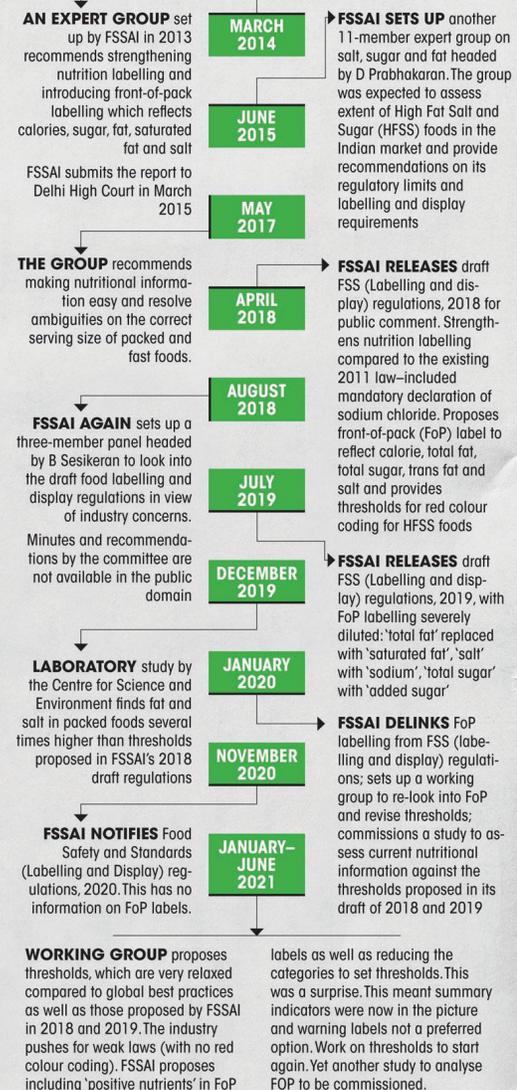
The **Food Safety and Standards Authority of India (FSSAI)**, in 2018, released the **Draft Food Safety And Standards (Labelling And Display) Regulation**.

- However, even after so many expert panel recommendations and regulations, **India still does not have a**

**clear labelling or Front-of-pack (FoP) Labelling System**, which can warn consumers about harmful levels of fat, salt and sugar in processed foods.

### JOURNEY TO NOWHERE

Seven years of consultations, studies and draft regulations by the Food Safety and Standards Authority of India (FSSAI) have not translated into a robust law on front-of-pack labelling



### Key Points

#### ➤ About Front-of-Pack (FoP) Labelling System:

- **FoP labelling system** has long been listed as one of the **global best practices** to nudge consumers into healthy food choices.
  - It works just the way cigarette packets are labelled with images to discourage consumption.

Note:

- As India is experiencing a **dietary shift**, with **people increasingly consuming more processed and ultra-processed foods** and a burgeoning market, these factors prompt the need for FoP labelling for India.
  - It will play a handy role in fighting **increasing obesity and many non-communicable diseases**.
- The **World Health Organization (WHO)** defines FoP labels as nutrition labelling systems that are presented on the front of food packages in the principal field of vision; and present simple, often graphic information on the nutrient content or nutritional quality of products.
  - To complement the more detailed nutrient declarations provided on the back of food packages.
- The **Codex Alimentarius Commission**, an international food standards body established jointly by WHO and the Food and Agriculture organization (FAO), mentions that “FoP labelling is designed to assist in interpreting nutrient declarations”.
- **About the Draft Food Safety And Standards (Labelling And Display) Regulations:**
  - The rules mandates **colour-coded labels on food items**.
  - The draft regulation has been brought to **encourage consumers to make healthier food choices** and inform them about what the product actually contains.
  - The front of all packaged food items will have to **display the total number of calories, saturated and trans fats, salt, and added sugar content** as well as the proportion of the daily energy needs fulfilled by the food item.
  - FSSAI has also **changed the symbol of vegetarian food from a green circle to a green triangle** to help color blind people distinguish it from the brown circle denoting non-vegetarian food.
  - According to the proposed regulation, if the total amounts of calories, fats, trans-fats, sugar, and sodium per serving exceed the stipulated limits, it would be **indicated in red colour**.
- **Issues Pertaining to these Rules:**
  - **Masking of Positive Nutrients:** Most consumer organisations objected as ‘positive nutrients’ will mask the negative impact of high fat, salt and sugar in the food and the industry will use it to mislead the consumer.

- FSSAI proposed to also consider ‘positive nutrients’ in the FoP label. It was about giving scores to ‘positive nutrients’ such as proteins, nuts, fruits and vegetables in the name of promoting wholesome foods.
- **Restricted Target Audience:** The labelling format appears to be aimed only at individuals who are literate and nutritionally aware.
  - Further, limited general and nutrition literacy mean understanding of the text-intensive nutrient information is difficult.
- **Objections from Food Industry:** Indian food industries have expressed many concerns over the proposed format, especially using the colour red as it indicates danger and could dissuade consumers from their products.

## State Food Safety Index: FSSAI

### Why in News

Recently, the **Union Minister for Health and Family Welfare** has released the **3<sup>rd</sup> State Food Safety Index (SFSI)**.

- Also, **19 Mobile Food Testing Vans (Food Safety on Wheels)** have been flagged off to supplement the food safety ecosystem across the country.

### Key Points

- **About the Index:**
  - The index is **developed by FSSAI (Food Safety and Standards Authority of India)** to measure the performance of states on **five significant parameters of Food Safety**.
  - The **parameters include** Human Resources and Institutional Data, Compliance, Food Testing – Infrastructure and Surveillance, Training & Capacity Building and Consumer Empowerment.
  - The Index is a **dynamic quantitative and qualitative benchmarking model** that provides an **objective framework** for evaluating food safety **across all States/UTs**.
  - The **first** State Food Safety Index for the year 2018-19 was announced on the first-ever **World Food Safety Day** on 7<sup>th</sup> June 2019.

Note:



### ➤ Ranking of States:

- Among the **larger states**, **Gujarat was the top ranking state**, followed by Kerala and Tamil Nadu.
- Among the **smaller states**, **Goa stood first** followed by Meghalaya and Manipur.
- Among **UTs**, **Jammu & Kashmir**, Andaman & Nicobar Islands and New Delhi secured top ranks.

### ➤ Importance of Food Safety:

- Access to sufficient amounts of safe food is **key to sustaining life and promoting good health**.
  - Foodborne illnesses are usually infectious or toxic in nature and often invisible to the plain eye, caused by bacteria, viruses, parasites or chemical substances entering the body through contaminated food or water.
  - An estimated 4,20,000 people around the world die every year after eating contaminated food and children under 5 years of age carry 40% of the foodborne disease burden, with 1,25,000 deaths every year.
- Food safety has a critical role in assuring that **food stays safe at every stage of the food chain** - from production to harvest, processing, storage, distribution, all the way to preparation and consumption.
  - Food production is responsible for up to **30% of global greenhouse-gas** emissions contributing to **global warming**.

### ➤ Related Initiatives:

- **Indian:**
  - **Eat Right India Movement:**
    - It is an initiative of the Government of India and FSSAI to transform the country's food system in order to ensure safe, healthy and sustainable food for all Indians.
    - It is aligned to the **National Health Policy 2017** with its focus on preventive and promotive healthcare and flagship programmes like **Ayushman Bharat**, **POSHAN Abhiyaan**, **Anemia Mukht Bharat** and **Swachh Bharat Mission**.
  - **Eat Right Station Certification:**
    - The certification is awarded by FSSAI to railway stations that set benchmarks (as per the **Food Safety and Standards Act, 2006**) in providing safe and wholesome food to passengers.

- The **Eat Right Research Awards and Grants** to encourage and recognize high-quality research in the area of food safety and nutrition in India has also been launched.
- The **results of the PAN-India survey** for identifying the presence of industrially produced **trans fatty acid content** in the selected foods has been released. Overall, only 84 samples, i.e. 1.34%, have more than 3% industrially produced trans fats from the total of 6245 samples.
- In an effort to engage industry on the **issue of plastic in food packaging**, 24 food businesses signed a pledge on becoming "**Plastic Waste Neutral**" by collecting, processing and recycling of 100% post-consumer plastic waste from across the sources.

### ○ Global:

- The **Codex Alimentarius**, or "**Food Code**" is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission.
- The **Codex Alimentarius Commission** is a joint intergovernmental body of the **Food and Agriculture Organization (FAO)** and **World Health Organization (WHO)**.
  - Currently, it has **189 members and India is a member**.

## Aroma Mission & Floriculture Mission

### *Why in News*

Recently, the Union Minister of State Science & Technology has proposed **Integrated Aroma Dairy Entrepreneurship** for Jammu & Kashmir to augment the income of farmers.

- The Aroma Mission, also popularly referred as "**Lavender or Purple Revolution**", has started from J&K and transformed the lives of farmers who are able to grow lavender, make lucrative profit and improve their lives.
- Earlier, the **floriculture mission** was launched in 21 States and Union Territories.

### *Key Points*

Note:



➤ **Aroma Mission:**

○ **Objectives:**

- To **promote the cultivation of aromatic crops for essential oils** that are in great demand by the aroma industry.
- To enable Indian farmers and the aroma industry **to become global leaders** in the production and export of some other essential oils on the pattern of menthol mint.
- To **provide substantial benefits** to the farmers in achieving higher profits, utilization of waste lands and protection of their crops from wild and grazing animals.

○ **Nodal Agencies:**

- The nodal laboratory is **CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow**.
- The participating laboratories are CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur; CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu etc.

○ **Coverage:**

- The scientific interventions made under the mission project provided assured benefits to the growers of Vidarbha, Bundelkhand, Gujarat, Marathwada, Rajasthan, Andhra Pradesh, Odisha and other states **where farmers are exposed to frequent episodes of weather extremes and account for maximum suicides**.
- **Aromatic Plants** include lavender, damask rose, musk bala, etc.

○ **Launch of Second Phase:**

- **CSIR-IIIM-Jammu** announced **Aroma Mission phase-II** in February, 2021 after the success of the first phase.
- It **focuses on** setting up of cooperatives for marketing, promotion of cultivation and processing of high value medicinal and aromatic plants (MAPs), development of superior varieties and their agro technologies, setting up of distillation units and processing facilities, skill and entrepreneurship development, value-addition and product development from MAPs.

○ **Significance:**

- Apart from being in sync with government policy of doubling farm incomes by 2022, the mission

also provided **employment to the women farmers** thus giving impetus to **inclusive growth**.

➤ **Floriculture Mission:**

○ **Floriculture:**

- It is a branch of **horticulture** that deals with the cultivation, processing and marketing of ornamental plants vis-à-vis landscaping of small or large areas, and maintenance of gardens so that the surroundings may appear aesthetically pleasant.

○ **Objectives:**

- To focus on commercial floral crops, seasonal/annual crops, wild ornaments and cultivation of flower crops for honey bee rearing.
- Some of the popular crops include Gladiolus, Canna, Carnation, Chrysanthemum, Gerbera, Lillium, Marigold, Rose, Tuberose etc.

○ **Implementing Agencies:**

- Along with the **Council of Scientific and Industrial Research (CSIR)**, other implementing agencies involved are:
  - **Indian Council of Agricultural Research (ICAR)**
  - **Khadi and Village Industries Commission (KVIC)**
  - **APEDA and TRIFED**
  - **Fragrance and Flavour Development Centre (FFDC), Kannauj, and**
  - **Ministry of Commerce and Ministry of Micro, Small and Medium Enterprises (MSME).**

○ **Floriculture Market:**

- The Indian Floriculture market was worth INR 157 Billion in 2018. The floriculture market is expected to reach a value of INR 661 Billion by 2026, exhibiting a CAGR (Compound Annual Growth Rate) of 19.2% during 2021-2026.

○ **Significance:**

- **Employment generation:** Floriculture has the potential to provide employment to a large number of people through nursery raising, floriculture farming, entrepreneurship development for nursery trade, value addition and export.
- **Import Substitution:** India has diverse agro-climatic and edaphic conditions (physical, chemical, and biological properties of soil), and

Note:



rich plant diversity, still it shares only 0.6% of the global floriculture market.

- At least 1200 million USD worth of floriculture products are being imported by India every year from different countries.

## Shoonya Campaign: NITI Aayog

### Why in News

Recently, **NITI Aayog** and **Rocky Mountain Institute (RMI)** and **RMI India's** have launched the **Shoonya Campaign**.

- It is an initiative to promote **zero-pollution delivery vehicles** by working with consumers and industry.
- RMI is an **independent nonprofit organization** founded in 1982.

### Key Points

- **Shoonya Campaign:**
  - **Electric Deliveries:** The campaign aims to **accelerate adoption of Electric Vehicles (EVs) in the urban deliveries segment** and create **consumer awareness** about the benefits of zero-pollution delivery.
  - **Shoonya Brand:** A **corporate branding and certification programme** is being launched to recognise and promote industry's efforts towards transitioning to EVs for final-mile deliveries.
    - It will help e-commerce companies to distinguish their offerings from those of their competitors.
  - **Online Tracking Platform:** An online tracking platform will share the campaign's impact through data such as vehicle kilometers electrified, carbon savings, criteria pollutant savings and other benefits from clean delivery vehicles.
- **Need of EVs for Final-Mile Deliveries:**
  - **Growing E-Commerce Market:** Between 2013 and 2017, India's online retail market grew at an average rate of 53% each year and is expected to become a \$150 billion market by 2022.
    - By shifting the end-transportation of goods from the consumer, this has dramatically expanded the fleets of delivery vehicles.
  - **Reduce Emissions:** Urban freight vehicles account for 10% of freight transportation-related CO<sub>2</sub>

**emissions** in India, and these emissions are expected to grow by 114% by 2030.

- EVs emit no tailpipe emissions, which can contribute immensely to an improved air quality.
- Even when accounting for their manufacture, they emit 15-40 % less CO<sub>2</sub> compared to their internal combustion engine counterparts and have lower operational cost.
- **Energy Security:** Shifting towards EVs will help India to reduce oil dependency while solving the challenge of energy scarcity and moving towards renewable and clean sources of energy.
- **Challenges:**
  - **Technological:** India is technologically deficient in the production of electronics that form the backbone of the EV industry, such as batteries, semiconductors, controllers, etc.
  - **Infrastructural Support:** The lack of clarity over AC versus DC charging stations, grid stability and range anxiety (fear that batteries will soon run out of power) are other factors that hinder the growth of the EV industry.
  - **Availability of Materials for Domestic Production:** Battery is the single most important component of EVs. India does not have any known reserves of **lithium** and **cobalt** which are required for battery production.
    - India is dependent on countries like Japan and China for the import of **lithium-ion batteries**.
  - **Lack of Skilled Workers:** EVs have higher servicing costs and higher levels of skills is needed for servicing. India lacks dedicated training courses for such skill development.
- **Initiatives Taken:**
  - **National Electric Mobility Mission Plan (NEMMP):** **NEMMP** was launched in 2013 with an aim to achieve national fuel security by promoting hybrid and electric vehicles in the country.
  - **FAME Scheme:** The Indian government has created momentum through its **Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles** schemes that encourage, and in some segments mandates the adoption of EVs, with a goal of reaching **30% EV penetration by 2030**.
  - **National Mission on Transformative Mobility and Battery Storage:** The Mission will recommend and

Note:

drive the strategies for transformative mobility and phased manufacturing programmes for EVs, EV Components and Batteries.

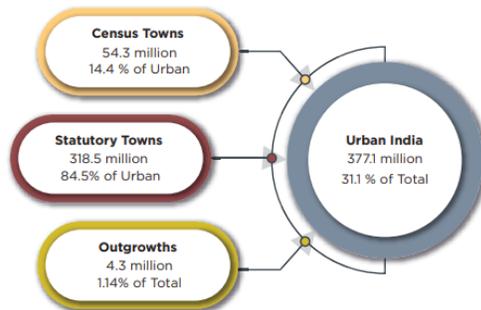
- **Fiscal Incentives:** To spur the production and consumption of EVs and charging infrastructure - such as income tax rebates, exemption from customs duties, etc.

## Urban Planning Reforms: NITI Aayog

### Why in News

Recently, **NITI Aayog** has launched the report titled '**Reforms in Urban Planning Capacity in India**'.

Composition of Urban Population



### Key Points

- **Urbanisation in India:**
  - **Urbanisation Level (National):**
    - India's population stood at 1210 million in 2011, with an urbanisation level of **31.1%** (**Census of India 2011**).
      - Urbanisation is an increase in the number of people living in towns and cities.
    - The **distribution of urban centres and the pace of urbanisation is not uniform** across the country.
      - **Over 75% of the urban population of the country is in 10 States:** Maharashtra, Uttar Pradesh, Tamil Nadu, West Bengal, Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Rajasthan, and Kerala.
  - **State-wise Scenario:**
    - **Above National Average:** Goa, Tamil Nadu, Kerala, Maharashtra, and Gujarat have attained over 40% urbanisation.

- **Below National Average:** Bihar, Odisha, Assam, and Uttar Pradesh continue to be at a lower level of urbanisation than the national average of 31.1%.
- **Union Territories:** NCT of Delhi, Daman and Diu, Chandigarh, and Lakshadweep, show above 75% urbanisation.

### ➤ Need for Reforming Urban Planning Capacity:

- **Increasing Urbanisation:** India's urban population is 11% of that of the world.
  - However, **in absolute numbers, the urban population in India is more than highly urbanised countries/regions** like the United States, Japan, Western Europe, and South America.
  - During 2011-36, urban growth will be responsible for 73% of the rise in total population in India.
- **Urbanisation is Central to India's Economy:** Urbanisation contributes nearly 60% to India's **Gross Domestic Product (GDP)**.
  - However, there exists large, untapped economies of scale.
- **India's National Growth Targets:**
  - **Economic Growth Target:** USD **5 trillion economy** by 2024.
  - **Employment Target:** Total workforce estimated to be 0.64 billion by 2030, of which 0.26 billion to be **employed** in urban areas.
  - **Infrastructure Targets:** Creation of 11 large industrial corridors as part of the **National Industrial Corridor Programme**, several multi-modal logistic parks, etc.
  - **Environmental Protection Targets:** **River rejuvenation, clean air in cities**, etc.
- **National Infrastructure Pipeline (NIP):** The urban sector has a significant share of 17% in the **NIP**.
  - NIP facilitates infrastructure projects in the country with a projected investment of Rs 111 lakh crore during the period 2020-25.
- **India's Global Commitments:**
  - **SDGs (Goal 11):** Promote urban planning as one of the recommended methods for achieving sustainable development.
  - **UN-Habitat's New Urban Agenda:** It was adopted at Habitat III in 2016. It puts forth principles for the planning, construction, development, management, and improvement of urban areas.

Note:

- **UN-Habitat (2020)** mentions **spatial sustainability**, as a concept. It suggests that the spatial conditions of a city can enhance its power to generate social, economic and environmental value and well-being.
  - **Paris Agreement:** India's **National Determined Contributions (NDCs)** includes the goals to reduce the emission intensity of the country's GDP by 33 to 35% by 2030 from 2005 level.
- **Recommendations:**
- **Planning of Healthy Cities: Central Sector Scheme '500 Healthy Cities Programme'**, for a period of 5 years, wherein priority cities and towns would be selected jointly by the states and local bodies.
    - The Programme can lead to **optimum utilization of urban land** as well.
  - **Re-engineering of Urban Governance:** To bring in more institutional clarity and also multi-disciplinary expertise to solve urban challenges.
    - The **formation of an apex committee at the state level is recommended** to undertake a regular review of planning legislations (including town and country planning or urban and regional development acts or other relevant acts).
  - **Strengthening the Role of the Private Sector:** These include the adoption of fair processes for procuring technical consultancy services, strengthening project structuring and management skills in the public sector, and empanelment of private sector consultancies.
  - **Measures for Strengthening Human Resource and Match Demand–Supply:** The constitution of a 'National Council of Town and Country Planners' as a statutory body of the Government of India.
    - Also, a '**National Digital Platform of Town and Country Planners**' is suggested to be created within the National Urban Innovation Stack of MoHUA.
  - **Citizen Outreach Campaign'** for demystifying urban planning.
  - Strengthening **Urban Planning Education System.**

#### Schemes/Programmes Related to Urban Development

- **Smart Cities:** To promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of Smart Solutions.

- **AMRUT Mission:** To ensure that every household has access to a tap with the assured supply of water and a sewerage connection.
- **Swachh Bharat Mission-Urban:** Aims at making urban India free from open defecation and achieving 100% scientific management of municipal solid waste in 4,041 statutory towns in the country.
- **HRIDAY:** The National Heritage City Development and Augmentation Yojana (HRIDAY), aims to bring together urban planning, economic growth and heritage conservation in an inclusive manner & with the objective of preserving the heritage character of the City.
- **Pradhan Mantri Awas Yojana-Urban:** Addresses Urban housing shortage among the Urban Poor including the Slum Dwellers by ensuring a pucca house to eligible urban poor.

## Curb on Foreign Funding of NGOs

### Why in News

Recently, the Union Government has put restrictions on funding for 10 international **Non-Governmental Organisations (NGO's)** working on **Child Rights, Climate Change and environmental projects.**

- In February 2021, the Ministry of Home Affairs (MHA) issued **new regulating guidelines to banks** under **Foreign Contribution (Regulation) Act, 2010.**

### Key Points

- **About:**
  - The **Reserve Bank of India** had previously asked for several foreign organisations to be put on the **Prior Reference Category (PRC) list.**
    - It implies that as and when the foreign donor wants to transfer the money to some recipient association in India, the same needs **prior clearance from the Ministry of Home Affairs.**
    - Over 80 international agencies are on the list.
- **Provisions Under FCRA Amendment, 2020:**
  - It requires any organisation that wants to register itself under the FCRA to **have existed for at least three years** and to have spent a minimum of **Rs 15 lakh on its core activities during the last three financial years** for the benefit of the society.

Note:

- The NGOs are also required to **submit commitment letters from their donors**, specifying the amount of foreign contributions and the purpose for which they are proposed to be given.

#### ➤ Reasons for Curb:

- It was stated that dozens of NGOs were **indulged in outright misappropriation or misutilisation of foreign contributions**.
- Even doubling the inflow of foreign contribution between the years **2010 and 2019, many recipients have not utilised the fund** for the purpose for which they were registered or granted under the FCRA Act.
  - It has also led the central government to cancel certificates of registration of more than 19,000 recipient organisations during the period between 2011 and 2019.

#### ➤ Implications:

- **Discouraging Constitutional Rights:**
  - These moves will have a **discouraging effect on the constitutionally guaranteed rights** to freedom of association, expression and assembly (Article 19).
  - The government has expanded governmental discretion, bureaucratic control and oversight with respect to the day-to-day functioning of NGOs in India.
- **Can Curb NGOs' Humanitarian Work:**
  - It can choke NGOs with red tape so that **they are unable to do their humanitarian work**.
  - It can make it more difficult for grassroots NGOs that are independent of government, business, religion and political groups to operate in India.
- **Repressing Freedom:**
  - The passage of the **FCRA Amendment, 2020** and the actions against **Amnesty** place India next to only Russia, where the government has used the Foreign Agents Law, 2012 and Undesirable Organisations Law, 2015 as a **weapon to repress freedom of association and expression**.
  - International organisations had expressed concern over the use of the **Foreign Contribution Regulation Act to "stifle the voices" of activists and non-governmental organisations in India**.

## Seed Capital Module for SHGs

### Why in News

Recently, the **Ministry of Food Processing Industries** has launched the **Seed Capital Module** under **Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME)** to help **Self Help Groups (SHGs)**.

### Key Points

#### ➤ About:

- It was launched on **Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM) MIS (Management Information System) Portal** for seed capital assistance to members of urban Self Help Groups working in the **food processing sector** in India.
- The **seed capital portal can be accessed for SHGs** to avail the seed capital assistance.
  - Seed capital is the **money raised to begin developing an idea for a business or a new product**.
  - SHGs will be sensitized and motivated about the PMFME scheme **to avail the benefits of seed capital** for purchasing small tools and working capital.

#### ➤ PMFME Scheme

- It is a **Centrally Sponsored Scheme** that was launched under the **Atmanirbhar Bharat Abhiyan**.
- It aims to **enhance the competitiveness of existing individual micro-enterprises in the unorganized segment** of the food processing industry and **promote formalization of the sector** and provide support to **Farmer Producer Organizations**, Self Help Groups, and Producers Cooperatives along their entire value chain.
- With an outlay of Rs.10,000 crore over a period of five years from 2020-21 to 2024-25, the scheme **envisions to directly assist the 2,00,000 micro food processing units for providing financial, technical, and business support** for upgradation of existing micro food processing enterprises.

#### ➤ Benefits under PMFME Scheme:

- Capital assistance of **Rs. 40,000 per SHG member**.
- **Credit linked subsidy** for capital investment **up to 35% with a ceiling of Rs. 10 lakh**.

Note:

- **Credit linked grant support up to 35%** for establishing common infrastructure.
- **Handholding support** for DPR (Detailed Project Report) preparation.
- Capacity building and **training support**.
- **Other Schemes Related to SHGs:**
  - **Government e-marketplace**.
  - **Agriculture Infrastructure Fund**.
  - **Pradhan Mantri Matsya Sampada Yojana (PMMSY)**
  - **Ambedkar Hastshilp Vikas Yojana (AHVY)**
  - **North East Rural Livelihood Project**.
  - **Mahila e-haat**
  - **Women Entrepreneurship Platform (WEP)**.

#### DAY-NULM

- It is **Centrally Sponsored Scheme**, launched in 2014, aims to **uplift urban poor by enhancing sustainable livelihood opportunities** through skill development.
- Its intended beneficiaries are **urban poor (street vendors, slum dwellers, homeless, rag pickers), unemployed and differently-abled**. It provides skill training and employment to these people.
  - It also provides subsidies to urban poor i.e. interest subsidy of 5% – 7% for setting up individual micro-enterprises with the loan of up to 2 lakhs and for group enterprises with a loan limit of up to Rs.10 lakhs.

## Aapada Mitra Programme

### Why in News

Recently, the government has announced plans to have **Disaster Management Volunteers (Aapda Mitras)** in 350 districts of the country and also released documents for **Common Alerting Protocol (CAP)**.

- CAP is a simple but **general format for exchanging all-hazard emergency alerts** and public warnings over all kinds of networks.

### Key Points

- **About:**
  - It is a **Central Sector Scheme** that was launched in May 2016. **NDMA (National Disaster Management Authority)** is the implementing agency.

- It is a programme to identify suitable individuals in **disaster-prone** regions who can be trained to be first responders in times of disasters.
- **Aim:**
  - **To provide the community volunteers** with the skills that they would need to **respond to their community's immediate needs** in the aftermath of a disaster thereby enabling them to **undertake basic relief and rescue tasks during emergency situations** such as **floods, flash-floods and urban flooding**.
- **Objectives:**
  - **Training institutions** to be empanelled by respective States/UTs at the State/UT level.
  - **To train community volunteers** in life saving skills of disaster response (flood relief and rescue), coordination, assistance, and provide personal protective equipment and emergency responder kits;
  - To create a **Community Emergency Stockpile/ Reserve** at the district/block level containing essential light search and rescue equipment, medical first aid kits, etc;
  - To **disseminate training and education tools** developed under the project to more flood prone districts in subsequent phases of the scheme.
- **Other Disaster Related Initiatives:**
  - **Indian:**
    - **National Disaster Response Fund**.
    - **Disaster Management Act, 2005**.
    - **Coalition for Disaster Resilient Infrastructure (CDRI)**.
  - **Global:**
    - **Sendai Framework for Disaster Risk Reduction 2015-2030**
    - **United Nations Office for Disaster Risk Reduction (UNDRR)**.

#### National Disaster Management Authority

- NDMA is the **apex statutory body for disaster management** in India. It is headed by the Prime Minister of India.
- It was formally **constituted on 27<sup>th</sup> Sept. 2006**, in accordance with the **Disaster Management Act, 2005**.
- Its primary purpose is **to coordinate response to natural or man-made disasters and for capacity-building in disaster resiliency and crisis response**.

Note:

- It envisages to build a safer and disaster resilient India by a holistic, proactive, technology driven and sustainable development strategy that involves all stakeholders and fosters a culture of prevention, preparedness and mitigation.

## Contempt of Court

### Why in News

Recently, the **Supreme Court held that its power to punish for contempt under Article 129 is a constitutional power**, which cannot be done away with even by any law.

### Key Points

- **Highlights of the Judgment:**
  - The power to punish for contempt is a constitutional power vested in this court which **cannot be abridged or taken away even by legislative enactment**.
  - **Article 142 (2)** states that “subject to the provisions of any law made in this behalf by Parliament” the **Supreme Court shall have all and every power** to make any order on punishment of any contempt of itself.
    - However, **Article 129** lays down that the Supreme Court shall be a court of record, and shall have all the powers of such a court, **including the power to punish for contempt**.
  - The comparison of the two provisions show that whereas the founding fathers felt that the powers under clause (2) of Article 142 could be subject to any law made by the Parliament, there is no such restriction as far as Article 129 is concerned.
  - It emphasised that the rationale behind the **contempt jurisdiction is to maintain the dignity of the institution of judicial forums**.
- **About ‘Contempt of Court’:**
  - Contempt of court is the power of the court to protect its own majesty and respect. The power is regulated but not restricted in the **Contempt of Courts Act, 1971**.
    - The expression ‘contempt of court’ has **not been defined by the Constitution**.
    - However, **Article 129** of the Constitution conferred on the Supreme Court the power to punish contempt of itself.

- **Article 215** conferred a corresponding power on the High Courts.
- The Contempt of Courts Act, 1971 defines both **civil and criminal contempt**.
  - **Civil contempt** refers to wilful disobedience to any judgment of the court.
  - **Criminal contempt** can be invoked if an act:
    - Tends to scandalise or lower the authority of the court.
    - Tends to interfere with the due course of any judicial proceeding.
    - Obstruct the administration of justice.

### ➤ Related Issues Regarding:

- **Open-Ended Terms:**Section 5 of the Act provides that “fair criticism” or “fair comment” on the merits of a finally decided case would not amount to contempt.
  - However, the determination of what is “fair” is left to the interpretation of judges.
  - This open-ended interpretation sometimes **compromise freedom of speech and expression under Article 19**.
- **Violating Principle of Natural Justice:** The judges may often be seen to be acting in their own cause, thus violating the principles of natural justice and adversely affecting the public confidence they seek to preserve through the proceeding.

## Special Category Status

### Why in News

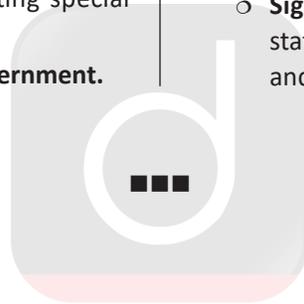
Recently, the Bihar Government has asserted that it has not dropped the demand of **special category status** to Bihar.

### Key Points

- **About Special Category Status (SCS):**
  - Special category status is a **classification given by the Centre to assist development of states that face geographical and socio-economic disadvantages**.
  - This classification was done on the **recommendations of the Fifth Finance Commission in 1969**.
  - It was **based on the Gadgil formula**. The parameters for SCS were:

Note:

- Hilly Terrain;
  - Low Population Density And/Or Sizeable Share of Tribal Population;
  - Strategic Location along Borders With Neighbouring Countries;
  - Economic and Infrastructure Backwardness; and
  - Nonviable Nature of State finances.
- SCS was **first accorded in 1969 to Jammu and Kashmir, Assam and Nagaland**. Since then eight more states have been included (Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura and Uttarakhand).
  - There is **no provision of SCS in the Constitution**.
  - Special Category Status for plan assistance was granted in the past by the **National Development Council** to the States that are characterized by a number of features necessitating special consideration.
    - Now, it is **done by the central government**.
- The **14<sup>th</sup> Finance Commission** has done away with the **'special category status'** for states, except for the Northeastern and three hill states.
    - Instead, it suggested that the resource gap of each state be filled through 'tax devolution', urging the Centre to increase the states' share of tax revenues from **32% to 42%**, which has been implemented since 2015.
- **Benefits to States with SCS:**
    - The **Centre pays 90% of the funds required in a centrally-sponsored scheme** to special category status states as against 60% or 75% in case of other states, while the remaining funds are provided by the state governments.
    - **Unspent money does not lapse** and is carried forward.
    - **Significant concessions** are provided to these states in excise and customs duties, income tax and corporate tax.



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Note:



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# Economic Scenario

## Highlights

- Listing of Export Credit
- Guarantee Corporation (ECGC)
- Global Innovation Index 2021
- New Bad Bank Structure
- Patents (Amendment) Rules, 2021
- Defence Industrial Corridor
- FDI Inflows
- 45<sup>th</sup> GST Council Meeting
- District Level Committees for Power Related Schemes
- Stablecoins
- World Bank Stops 'Ease of Doing Business' Report
- PLI Scheme for Auto & Drone Sector
- Digital Payment Systems
- Promoting Pearl Farming in Tribal Areas: TRIFED
- Agreement on Agriculture: WTO
- No Modification in the Resolution Plan Under IBC: SC
- Reforms in Telecom Sector
- Sufficiency Economy Philosophy: Thailand
- G-20 Agriculture Meet 2021

## Listing of Export Credit Guarantee Corporation (ECGC)

### Why in News

Recently, the Union Cabinet has approved **capital infusion in the Export Credit Guarantee Corporation (ECGC) and its listing through an initial public offering.**

- The government will inject Rs 4,400 crore in the ECGC over a period of five years beginning 2021-22.
- The Cabinet also approved continuation of the **National Export Insurance Account (NEIA) scheme** and infusion of Rs 1,650 crore **Grant-in-Aid** over five years.

### Key Points

#### ➤ About the ECGC:

- **Establishment:** The ECGC Ltd is **wholly owned by the Ministry of Commerce and Industry.**
  - The Government of India had initially set up the **Export Risks Insurance Corporation in 1957.**
  - After the introduction of insurance covers to banks during the period 1962-64, the name was changed to **Export Credit & Guarantee Corporation Ltd** in 1964.
  - It was **changed to ECGC Ltd** in August 2014.

- **Objectives:** ECGC was established to **promote exports by providing credit insurance services** to exporters against non-payment risks by the overseas buyers due to commercial and political reasons.
- **Significance of Capital infusion:** It will enable it to **expand its coverage to export-oriented industries, particularly labour-intensive sectors.**

- ECGC is a market leader with around 85% market share in the export credit insurance market in India and provided support to exports worth Rs 6.02 lakh, or 28% of merchandise exports, in FY21.

- **Micro, Small and Medium Enterprises (MSMEs)** form 97% of the client base of ECGC.

- The process of **listing ECGC on the stock market** is also being initiated so that it can raise more funds.

#### ➤ National Export Insurance Account (NEIA) Scheme:

- NEIA Trust was **established in 2006** to promote project exports from India that are of strategic and national importance.
- It promotes **Medium and Long Term (MLT) / project exports** by extending (partial/full) support to covers issued by ECGC to MLT/project export.
- **Exim Bank**, in April 2011, in conjunction with ECGC Ltd., introduced a new initiative, viz. **Buyer's Credit** under the NEIA scheme, under which the Bank finances and facilitates project exports from India.

Note:



### Recent Export Related Initiatives

- **Foreign Trade Policy (2015-20)**: It aims at doubling the overseas sales to \$900 billion by 2019-20 and making India global, while integrating the foreign trade with “Make in India” and “Digital India Programme”.
- **Remission of Duties and Taxes on Exported Products (RoDTEP)**: It is a WTO compatible mechanism for reimbursement of taxes/ duties/ levies, which are currently not being refunded under any other mechanism, at the central, state and local level
- **ROSCTL scheme**: Support to the textiles sector was increased by the remission of Central/ State taxes through the **ROSCTL scheme**, which has now been extended till March 2024.
- **Certificate of Origin**: Common Digital Platform for **Certificate of Origin** has been launched to facilitate trade and increase FTA (Free Trade Agreement) utilization by exporters.
- **Agriculture Export Policy**: A comprehensive policy to provide an impetus to agricultural exports related to agriculture, horticulture, animal husbandry, fisheries and food processing sectors, is under implementation
- **NIRVIK Scheme**: The ECGC has introduced the **Export Credit Insurance Scheme (ECIS) called NIRVIK (Niryat Rin Vikas Yojana)** to enhance loan availability and ease the lending process.
- **Trade Infrastructure for Export Scheme (TIES), Market Access Initiatives (MAI) Scheme and Transport and Marketing Assistance (TMA)** schemes to promote trade infrastructure and marketing.

## Global Innovation Index 2021

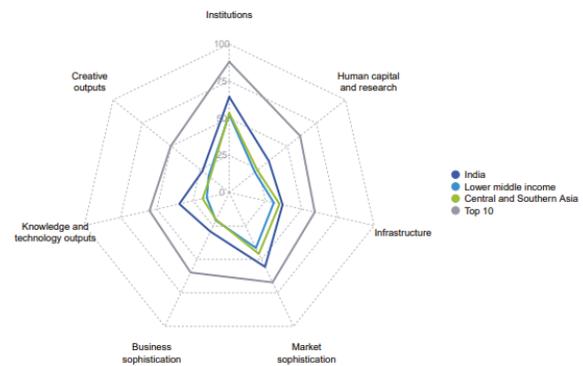
### Why in News

Recently, India has climbed two spots and has been ranked 46<sup>th</sup> in the **Global Innovation Index (GII) 2021** rankings.

### Key Points

- **Global Innovation Index (GII) 2021:**
  - **About:**
    - **Launch:** The GI is launched by the **World Intellectual Property Organization (WIPO)**, a specialized agency of the **United Nations**.

### The seven GII pillar scores for India



- The GII aims to capture the multi-dimensional facets of innovation ranking and rich analysis referencing around **132 economies**.
- **Partnership:** It is published in **partnership with the Portulans Institute and other corporate partners:**
  - The Brazilian National Confederation of Industry (CNI), **Confederation of Indian Industry (CII)**, Ecopetrol (Colombia) and the Turkish Exporters Assembly (TIM).
- **Indicators:** The index ranks world economies according to their innovation capabilities and consists of roughly 80 indicators grouped into **innovation inputs and outputs**.
  - **Innovation inputs:** Institutions; Human capital and research; Infrastructure; Market sophistication; Business sophistication.
  - **Innovation outputs:** Knowledge and technology outputs; Creative outputs
- **Global Performance:**
  - **Top Five:** Switzerland, Sweden, U.S., and U.K. continue to lead the innovation ranking, and have all ranked in the top 5 in the past three years.
    - The **Republic of Korea** joins the top 5 of the GII for the first time in 2021.
  - **Asian Countries:** Four Asian economies feature in the top 15: **Singapore (8), China (12), Japan (13)** and **Hong Kong, China (14)**.
- **India's Performance:**
  - India has been on an upward trajectory over the past few years in the **GII**.
    - India has shot up from a rank of 81 in 2015 to 46 in 2021.

Note:

- India performs better in **innovation outputs** than **innovation inputs** in 2021.
    - This year India ranks **57<sup>th</sup> in innovation inputs**, the same as last year but higher than 2019.
    - As for innovation outputs, **India ranks 45<sup>th</sup>**. This position is the same as last year but higher than 2019.
  - India **ranks 2<sup>nd</sup>** among the **34 lower middle-income group economies**.
  - India **ranks 1<sup>st</sup>** among the **10 economies in Central and Southern Asia**.
  - The government attributed the country's improved performance to the departments of atomic energy, science and technology, biotechnology and space.
- **Other Findings from the GII 2021:**
- **Investments in innovation** reached an **all-time high** before the pandemic with R&D growing at an exceptional rate of 8.5% in 2019.
  - **Government budget allocations** for the top R&D spending economies showed continued growth in 2020.
  - The **publication of scientific articles worldwide grew by 7.6%** in 2020.
  - **India, Kenya, the Republic of Moldova, and VietNam** hold the record for **overperforming on innovation** relative to their level of development for the 11<sup>th</sup> year in a row.

**Note:**

- The **India Innovation Index** has been developed by **NITI (National Institution for Transforming India) Aayog** on the lines of the GII.
  - The index goes beyond traditional approaches by considering the best parameters in measuring innovation such as **patents per million of population, publication in scientific journals, percentage of GDP spending on research**.
  - It also adds parameters that are specific to the Indian economy (eg. **Demographic dividend**), to give it a more holistic coverage.

## New Bad Bank Structure

### *Why in News*

Recently, the Union Cabinet approved the Rs 30,600

**crore guarantee to back Security Receipts issued by National Asset Reconstruction Company Limited (NARCL)** for acquiring stressed loan assets.

- The NARCL is a part of a new Bad bank structure that was announced in the **Budget 2021**.

### **Key Points**

- **About the New Bad Bank Structure:**
  - For resolution of huge **NPAs (Non-Performing Assets)** in the Indian Banking sector, the government of India has set up two new entities to acquire stressed assets from banks and then sell them in the market.
    - **NPA** refers to a classification for **loans or advances that are in default or in arrears**.
  - **NARCL:** NARCL has been incorporated under the Companies Act and has applied to the Reserve Bank of India for a license as an **Asset Reconstruction Company (ARC)**.
    - NARCL will **acquire stressed assets** worth about Rs 2 lakh crore from various commercial banks in different phases.
    - Public Sector Banks (PSBs) will maintain 51% ownership in NARCL.
  - **IDRCL:** Another entity, **India Debt Resolution Company Ltd (IDRCL)**, will then try to **sell the stressed assets** in the market.
    - PSBs and Public Financial Institutes (FIs) will hold a maximum of 49% stake in IDRCL. The remaining 51% stake will be with private-sector lenders.
  - The NARCL-IDRCL structure is the new bad bank structure.
- **Need for NARCL-IDRCL Structure:**
  - **Existing ARCs have been helpful** in the resolution of stressed assets, especially for smaller value loans.
  - Various available resolution mechanisms, including **Insolvency and Bankruptcy Code (IBC)**, have proved to be useful.
  - However, **considering the large stock of legacy NPAs**, additional options/alternatives are needed and thus, the NARCL-IDRCL structure was announced in the Union Budget 2021.
- **Working of NARCL-IDRCL and Guarantee Offered:**
  - The **NARCL will first purchase bad loans** from banks.
  - It will **pay 15% of the agreed price in cash and the remaining 85% will be in the form of "Security Receipts"**.

Note:



- **When the assets are sold**, with the help of IDRCL, the **commercial banks will be paid back the rest**.
- If the bad bank is unable to sell the bad loan, or has to sell it at a loss, **then the government guarantee will be invoked**.
  - The **difference between what the commercial bank was supposed to get and what the bad bank was able to raise** will be paid from the Rs 30,600 crore that has been provided by the government.
- This guarantee is extended for a **period of five years**.

**Note:**

- **Security receipts** are defined under section 2(1) (zg) of **SARFAESI Act**.
- It means a receipt or other security, issued by an asset reconstruction company to any qualified buyer pursuant to a scheme, evidencing the purchase or acquisition by the holder, thereof, of an undivided right, title or interest in the financial asset involved in securitization.

**Bad Bank**➤ **About:**

- The bad bank is an **Asset Reconstruction Company (ARC)** or an **Asset Management Company (AMC)** that takes over the bad loans of commercial banks, manages them and finally recovers the money over a period of time.
- The bad bank is **not involved in lending and taking deposits**, but helps commercial banks clean up their balance sheets and resolve bad loans.
- The **takeover of bad loans is normally below the book value of the loan** and the bad bank tries to recover as much as possible subsequently.

➤ **Effect of Bad Bank:**

- **Commercial Banks' Perspective:** Commercial banks are saddled with high NPA levels, setting up of the Bad bank will help.
  - That's because such a bank will get rid of all its toxic assets, which were reducing its profits, in one quick move.
  - When the recovery money is paid back, it will further improve the bank's position. Meanwhile, it can start lending again.
- **Government and Taxpayer Perspective:** Whether it is recapitalising PSBs laden with bad loans or

giving guarantees for security receipts, the money is coming from the taxpayers' pocket.

- While recapitalisation and such guarantees are often designated as "reforms", they are band aids at best.
- The only sustainable solution is to improve the lending operation in PSBs.
- The plan of bailing out commercial banks will collapse if the bad bank is unable to sell such impaired assets in the market. The burden indeed will fall upon the taxpayer.

## Patents (Amendment) Rules, 2021

**Why in News**

Recently, the union government has introduced **Patents (Amendment) Rules, 2021** which has **reduced the fee for patent filing and prosecution** for educational institutions by 80%.

- It is aimed at **promoting innovation** and development of new technologies.

**Key Points**➤ **About:**○ **Patents:**

- A patent is a form of preservation of **intellectual property**. It is an **exclusive right granted for an invention**, which is a **product** or a **process** that provides, in general, a new way of doing something, or offers a new technical solution to a problem.
- To get a patent, technical information about the invention **must be disclosed to the public** in a patent application.

○ **Patentability Criteria for an Invention:**

- It should be novel.
- Must involve an inventive step (technical advancement)
- Capable of industrial application

○ **Term of Patent:**

- The term of every patent in India is **twenty years from the date of filing** the patent application, irrespective of whether it is filed with provisional or complete specification.

Note:



- **Patents Act, 1970** : This principal law for patenting system in India came into force in the year 1972. It **replaced the Indian Patents and Designs Act 1911**.
  - The Act was **amended by the Patents (Amendment) Act, 2005**, wherein **product patent was extended to all fields of technology** including food, drugs, chemicals and microorganisms.
  - After the amendment, the **provisions relating to Exclusive Marketing Rights (EMRs) have been repealed**, and a **provision for enabling grant of compulsory license has been introduced**.
  - The provisions relating to **pre-grant and post-grant opposition** have also been introduced.
- **Patents (Amendment) Rules, 2021:**
  - **Patent Fees for Educational Institutions Reduced:**
    - **Educational institutions engage in many research activities**, where professors and teachers and students generate several new technologies which need to be patented for facilitating commercialization of the same.
    - At the time of applying for patents, the **innovators have to apply these patents in the name of the institutions which have to pay fees for large applicants**, which are very high and thus work as a disincentive.
    - In this regard and to encourage greater participation of the educational institutions, **official fees payable by them in respect of various acts under the Patents Rules, 2003**, have been reduced by way of the Patents (Amendment) Rules, 2021.
    - Benefits related to **80% reduced fee** for patent filing & prosecution have been **extended to all educational institutions**.
      - This benefit was earlier available to all recognised educational institutions owned by the government.
  - **Extension of Expedited Examination System:**
    - The fastest granted patent is the one which was **granted in 41 days** after filing of such request. This facility of Expedited Examination system was initially provided for patent applications filed by Startups.
    - It has been **now extended to 8 more categories of Patent Applicants:**
      - SME (Small and Medium Enterprises), Female

applicants, Government Departments, Institutions established by a Central, Provincial or State Act, Government Company, an Institution wholly or substantially financed by the Government and applicants under Patents Prosecution Highway.

1. The **Patent Prosecution Highway (PPH)** is a set of initiatives for providing accelerated patent prosecution procedures by sharing information between some patent offices.

#### Note:

- **Evergreening of Patent:** It is a corporate, legal, business, and technological strategy for extending / elongating the term of a granted patent in a jurisdiction that is about to expire, in order to retain royalties from them, by taking out new patents.
  - **Section 3(d) of the Indian Patent Act 1970** (amended in 2005) does not allow patents to be granted to inventions involving new forms of a known substance unless it differs significantly in properties with regard to efficacy.
  - This means that the **Indian Patent Act does not allow evergreening of patents**.
- **Compulsory Licencing (CL):** CL is the grant of permission by the government to entities to use, manufacture, import or sell a patented invention without the patent-owner's consent. Patents Act in India deals with CL.
  - CL is permitted under the **WTO's TRIPS (IPR) Agreement** provided conditions such as 'national emergencies, other circumstances of extreme urgency and anti-competitive practices' are fulfilled.

## Defence Industrial Corridor

### Why in News

Recently, the **Prime Minister visited the exhibition models of the Aligarh node of the upcoming Uttar Pradesh Defence Industrial Corridor**.

- It was announced by the Prime Minister while inaugurating the **UP Investors Summit** in Lucknow in **2018**.
- The government has established **another Defence Industrial Corridor in Tamil Nadu**.

Note:



### Key Points

- **Defence Industrial Corridor of UP:**
  - It is an aspirational project that intends to **reduce foreign dependency** of the **Indian Aerospace & Defence Sector**.
  - It will have **6 nodes** – Aligarh, Agra, Kanpur, Chitrakoot, Jhansi and Lucknow.
  - The **Uttar Pradesh Expressways Industrial Development Authority (UPEIDA)** is the **nodal agency** to execute this project in conjunction with various other state agencies.
  - It aims to **bring up the state as one of the largest & advanced Defence manufacturing hubs** and put it on the world map.
- **Features:**
  - Single Window approvals and clearances to Defence and Aerospace (D&A) manufacturing units via **Nivesh Mitra**.
    - **Nivesh Mitra** Portal has been launched by the Government of Uttar Pradesh to ease the **Ease of Doing Business** in the state.
  - **Labour Permits** for D&A industry towards flexible employment conditions.
  - Simple Procedures and **rationalised regulatory regime** with easy reimbursement of incentives and subsidies.
  - Assured **water supply** and uninterrupted **electricity**.
  - Connectivity with **4-lane heavy-duty highway**.
- **Reason for choosing UP for Defence Corridor:**
  - Uttar Pradesh is the **fourth largest state in India** and the **third largest economy** within the country.

- With a population of more than 200 million, **UP has the highest number of available labour force** and is one of the **top five manufacturing states in India**.
- The state also ranks **first in terms of number of Micro, Small & Medium Enterprises (MSMEs)** in the country and ranks **2<sup>nd</sup> in Ease of Doing Business (EoDB)**.

### Defence Corridors

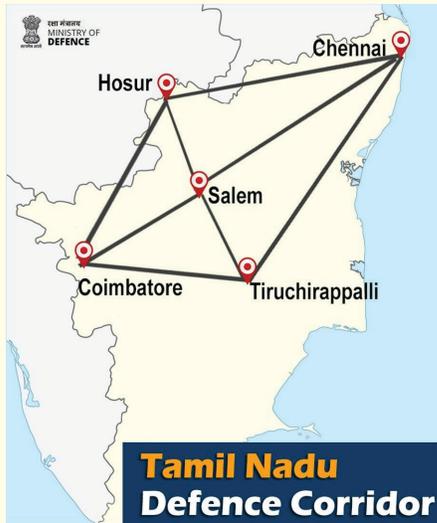
- **About:**
  - A **defence corridor** refers to a route or a path along which domestic productions of defence equipment by **public sector, private sector and MSMEs** are lined up to enhance the operational capability of the defence forces.
- **Significance:**
  - It will **help in making the nation self-reliant** in the field of **defense production and promoting 'Make in India'**, which will **reduce our imports and promote the export of these items** to other countries.
  - It will provide a **fillip to the defence manufacturing ecosystem** through synergistic development of technologies, promote the **growth of private domestic manufacturers**, including **MSMEs and Start-Ups**.
- **Challenges:**
  - **Technological Development in Defence:**
    - The first challenge in the development of technology is in **advanced electronics and materials**, which cut across all the verticals.
    - The second challenge is **relative immaturity of Material Science** to use lighter and stronger intelligent material.
  - **Meeting Industries Expectations:**
    - Meeting expectations of the industry, who not only wants faster clearance of their proposals for setting up or shifting their bases, but also tax benefits like in **Special Economic Zones (SEZ)**, faster decision making etc is a challenge for the government.
  - **Less Involvement of Private Players:**
    - While there is an **over-concentration of orders with the public sector** (leading to choking and queuing), hardly any orders are actually flowing to the private players.

Note:

- **Human Resource:**
  - Unavailability of **talented human resources** is also one of the major issues.

#### Tamil Nadu Defence Industrial Corridor

- It comprises **Chennai, Tiruchirappalli, Coimbatore, Salem and Hosur**. It will create **new defence production facilities and promote clusters** with necessary testing and certification facilities, export facilitation centres, technology transfer facilitation, etc.
- The corridor was **inaugurated in 2019**.



## FDI Inflows

### Why in News

Foreign Direct Investment (FDI) inflows **grew 62% during the first four months** (April-July period) of current FY 2021-22 over the corresponding period last year (2020).

- India attracted a total **FDI inflow of USD 27.37 billion** during the four months.
- In the **FY 2020-21**, India saw growth of 10% (to \$82 bn) in FDI.

### Key Points

- **FDI Equity:**
  - FDI equity inflow **grew by 112%** in the **April-July period** of FY 2021-22 (USD 20.42 billion) compared to the year ago period.
- **Top Sectors:**

- The **Automobile Industry** has emerged as the **top sector** with 23% share of the total FDI Equity inflow **followed by Computer Software & Hardware (18%) and Services Sector (10%)** respectively.

#### ➤ Top FDI Destinations:

- **Karnataka is the top recipient** state for the period with 45% share of the total FDI Equity inflows followed by **Maharashtra (23%) and Delhi (12%)**.

### Foreign Direct Investment

#### ➤ Definition:

- FDI is the process whereby residents of one country (the home country) **acquire ownership of assets for the purpose of controlling** the production, distribution and other activities of a firm in another country (the host country).
  - It is different from **Foreign Portfolio Investment** where the foreign entity merely buys stocks and bonds of a company. FPI does not provide the investor with control over the business.

#### ➤ Three Components:

- **Equity capital:** It is the foreign direct investor's **purchase of shares** of an enterprise in a country other than its own.
- **Reinvested earnings:** It comprises the **direct investors' share of earnings not distributed as dividends** by affiliates, or earnings not remitted to the direct investor. Such retained profits by affiliates are reinvested.
- **Intra-company loans:** These refer to **short- or long-term borrowing and lending of funds** between direct investors (or enterprises) and affiliate enterprises.

#### ➤ Routes through which India gets FDI:

- **Automatic Route:** In this, the foreign entity does **not require the prior approval of the government or the RBI (Reserve Bank of India)**.
- **Government Route:** In this, the foreign entity **has to take the approval** of the government.
  - The **Foreign Investment Facilitation Portal (FIFP)** facilitates the single window clearance of applications which are through approval route. It is administered by the **Department for Promotion of Industry and Internal Trade (DPIIT)**, Ministry of Commerce and Industry.

#### ➤ Government Measures to Promote FDI:

Note:



- Factors such as favourable demographics, impressive mobile and internet penetration, massive consumption and technology uptake, played an important role in attracting the investments.
- Launch of **Schemes attracting investments**, such as, **National technical Textile Mission, Production Linked Incentive Scheme, Pradhan Mantri Kisan SAMPADA Yojana**, etc.
  - The government has elaborated upon the initiatives under the **Atmanirbhar Bharat** to encourage investments in different sectors.
- As a part of its **Make in India initiative** to promote domestic manufacturing, India deregulated FDI rules for several sectors over the last few years.

## 45<sup>th</sup> GST Council Meeting

### Why in News

Recently, the 45<sup>th</sup> **Goods and Services Tax (GST) Council** meeting was held.

**What's in store** | The 45th GST Council meeting was chaired by Finance Minister Nirmala Sitharaman in Lucknow on Friday. Among the key decisions are:

■ Concessional tax rates on COVID-19 **essential medicines like Tocilizumab** extended till December 31

■ **Muscular atrophy drugs** such as Zolgensma and Viltepsa that cost around ₹16 cr. exempted from GST

■ Import of **leased aircraft** exempted from I-GST

■ **Food delivery apps** to collect GST instead of restaurants

■ Tax on **fortified rice kernels** for ICDS scheme reduced from 18% to 5%

■ GST on **cancer drug Keytruda** brought down from 12% to 5%



### Key Points

- **Extension of Concessional GST Rates:**
  - The Council decided to **extend the GST relief on several drugs related to Covid-19 treatment** till December 2021.
- **Food Delivery Apps to Collect GST:**
  - Online food delivery aggregator firms such as Swiggy and Zomato **will now be liable to pay GST** and not the restaurant partners.
    - Currently, online bills generated by food aggregators **already have a tax component in it.**

- The taxed amount is **paid back to the restaurant partners who are then expected to pay** this amount to the government.

### ➤ **Petrol and Diesel will not come under GST Regime:**

- The council has decided not to bring petrol and diesel under the GST regime. **States vehemently opposed the inclusion** of the fuels while raising concerns on revenue buoyancy during the meet.
  - If petrol and diesel come under the GST regime, **prices will become mostly uniform across all states** as the different excise and VAT rates that the Centre and the states impose would then be done away with.
  - This would **help bring down diesel and petrol prices greatly**, which has touched new highs in the recent past.

### ➤ **GST on Fortified Rice Reduced:**

- The GST rate on **fortified rice kernels** for schemes like **integrated child development schemes** has been recommended to be reduced from **18% to 5%**.

### ➤ **GoM to Look After Rate Rationalisation:**

- A **Group of state ministers (GoM)** will be established to look after the **rate rationalisation** related issues to correct the **inverted duty structure** and to take steps to augment revenues.
  - An inverted duty structure arises when **the taxes on output or final product is lower than the taxes on inputs**, creating an inverse accumulation of input tax credit which in **most cases has to be refunded.**
  - Inverted duty structure **has implied a stream of revenue outflow for the government** prompting the government to relook the duty structure.
- Other GoMs will be set up in order to look after issues of e-way bills, **FASTAGs**, compliances, technology, plugging of loopholes, composition schemes etc.

### GST Council

- It is a **constitutional body (Article 279A)** for making recommendations to the Union and State Government on issues related to Goods and Services Tax.
- The **GST Council** is chaired by the **Union Finance Minister** and other members are the Union State Minister of Revenue or Finance and Ministers in-charge of Finance or Taxation of all the States.
- It is considered as a **federal body** where both the centre and the states get due representation.

Note:

## District Level Committees for Power Related Schemes

### Why in News

Recently, the **Ministry of Power** has issued an order for the setting up of **District Level Committees** to improve the quality of electricity supply in the country.

### Key Points

#### ➤ District Level Committees:

##### ○ About:

- All **States and Union Territories** will have to **notify and ensure establishment** of these District Electricity committees, under intimation to the Ministry of Power.
- It will **oversee all power related schemes of the government** and also its **impact on the provision of services to the people**. It will **meet** at District Headquarters **at least once in three months**.

##### ○ Composition:

- The committee would **comprise the most senior member of Parliament (MP)** in the district as the Chairperson, other MPs in the district as Co-chairpersons, District Collector as Member Secretary, among others.

#### ➤ Power Sector in India:

##### ○ About:

- **India's power sector** is one of the **most diversified in the world**. Sources of power generation range from conventional sources such as coal, lignite, natural gas, oil, hydro and nuclear power to viable non-conventional sources such as wind, solar, and agricultural and domestic waste.
- **India is the third-largest producer and second-largest consumer** of electricity in the world.
  - **100% FDI (Foreign Direct Investment)** is permitted under **automatic route** in the power sector.
- Electricity is a **concurrent subject (Seventh Schedule)** of the Constitution).

##### ○ Nodal Agency:

- The **Ministry of Power** is primarily responsible for the development of electrical energy in the country.

- It administers the **Electricity Act, 2003** and the **Energy Conservation Act, 2001**.

##### ○ Roadmap for Future:

- The Government has released its roadmap to achieve **175 GW capacity in renewable energy by 2022**, which includes 100 GW of solar power and 60 GW of wind power.
  - The Government is preparing a '**rent a roof**' policy for supporting its target of generating 40 gigawatts (GW) of power through solar rooftop projects by 2022.
  - The **Ministry of New and Renewable Energy (MNRE)** is the nodal Ministry for all matters relating to new and renewable energy.

#### ➤ Related Government Initiatives:

- **Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya)**: To ensure electrification of all willing households in the country in rural as well as urban areas.
- **Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY)**: Provides for separation of agriculture and non-agriculture feeders, strengthening and augmentation of sub-transmission and distribution infrastructure in rural areas including metering at distribution transformers, feeders and consumers end.
- **GARV (Grameen Vidyutikaran) App**: To monitor transparency in implementation of the electrification schemes, Grameen Vidyut Abhiyanta (GVAs) have been appointed by the government to report progress through the GARV app.
- **Ujwal Discom Assurance Yojana (UDAY)**: For operational and financial turnaround of Discoms.
- **4 Es in the Revised Tariff Policy**: The 4Es include Electricity for all, Efficiency to ensure affordable tariffs, Environment for a sustainable future, Ease of doing business to attract investments and ensure financial viability.

## Stablecoins

### Why in News

The US is discussing launching a **formal review into whether Tether and other stablecoins** threaten **financial stability**.

- The first stablecoin, created in 2014, was Tether.

Note:



### Key Points

#### ➤ About Stablecoins:

- A stablecoin is a type of **cryptocurrency** that is typically pegged to an **existing government-backed currency**.
  - A cryptocurrency is a **form of digital asset based on a network** that is distributed across a large number of computers.
- Stablecoins hold a **bundle of assets in reserve**, usually **short-term securities** such as cash, government debt or **commercial paper**.
- Stablecoins are useful because they **allow people to transact more seamlessly in cryptocurrencies** that function as investments, such as **Bitcoin**.
- They form a **bridge** between old-world money and new-world crypto aslo they **promise to function like perfectly safe holdings**.

#### ➤ Types:

##### ○ Fiat-collateralized Stablecoins:

- They are **collateralized by fiat money**, such as the US dollar, euro or the pound, on a **1:1 ratio**.
- **Examples:** Tether, Gemini Dollar, and TrueSD.

##### ○ Stablecoins Backed by Other Assets:

- There are a **few stablecoins**, which are **backed by a basket of multiple assets** (commercial papers, bonds, real estate, precious metals, etc).
- The value of these stablecoins can **fluctuate over time subject to movement in commodity and precious metal prices**.
- **Example:** Digix Gold, backed by physical gold.

##### ○ Crypto-Collateralized Stablecoins:

- Crypto-collateralized stablecoins are **more decentralised than their peers** and are backed by cryptocurrencies.
- The flipside is **price volatility** and to address the risk of price volatility, these stablecoins are over-collateralized.
- **Example:** Dai.

##### ○ Non-collateralized stablecoins:

- These stablecoins **do not have any backing and are decentralized** in the true sense and the supply of **non-collateralized stablecoins** is governed by algorithms.

- **Example:** Basis.

#### ➤ Concerns:

##### ○ Related to Short term Debt:

- Many stablecoins are backed by **types of short-term debt** that are prone to periods of illiquidity, meaning that they can become hard or impossible to trade during times of trouble.

##### ○ Not all Stablecoins are Stable:

- Not all stablecoins are really 100% price-stable. Their values are **dependent on their underlying assets**.

##### ○ Asset Contagion Risk:

- There are **potential asset contagion risks** linked to the liquidation of stablecoin reserve holdings.
  - A **contagion** is the spread of an economic crisis from one market or region to another and can occur at both a domestic or international level.

- The risks are primarily associated with collateralised stablecoins, varying based on the size, liquidity and riskiness of their asset holdings, as well as the transparency and governance of the operator.

##### ○ Risks to Financial Stability:

- While stablecoins have the potential to enhance the efficiency of the provision of financial services, they may also **generate risks to financial stability**, particularly if they are adopted at a significant scale.

##### ○ Lack of Accountability:

- They are **not transparent or auditable by everyone** and are operated just like non-bank financial intermediaries that provide services similar to traditional commercial banks, but outside normal banking regulation.

##### ○ Regulatory Challenge:

- International coordination of regulatory efforts across diverse economies, jurisdictions, legal systems, and different levels of economic development and needs is another regulatory challenge.
- There is **not (yet) a uniform regulatory approach of regulators worldwide** relating to stablecoins.

Note:

## World Bank Stops 'Ease of Doing Business' Report

### Why in News

The **World Bank** would discontinue the practice of issuing 'Doing Business report' following an investigation reported "data irregularities" in its 2018 and 2020 editions (released in 2017 and 2019, respectively) and possible "ethical matters" involving bank staff.

- It will be working on a new approach to assessing the business and investment climate.

### Key Points

- **Ease of Doing Business Report:**
  - The report was **introduced in 2003 to provide an assessment of objective measures of business regulations** and their enforcement **across 190 economies** on ten parameters affecting a business through its life cycle.
  - **10 different parameters namely**, Starting a Business, Dealing with Construction permits, Electricity availability, Property registration, Credit availability, Protecting minority Investors, Paying Taxes, Trading across borders, Contracts enforcement, and Resolving Insolvency.
  - It ranks countries on the basis of **Distance to Frontier (DTF) score** that highlights the gap of an economy with respect to the global best practice.
    - For example, a score of **75 means an economy was 25 percentage points away** from the frontier constructed from the best performances across all economies and across time.
- **India's Performance:**
  - Notably, in three reports, released in 2017, 2018 and 2019, India ranked among the top 10 economies showing "the most notable improvement".
    - Of the 79 positions in the Bank's Doing Business rankings that India gained between 2014 and 2019, 67 rank improvements happened 2017 onwards, with the biggest 30-rank jump happening in the Doing Business 2018 report, released in October 2017.
  - The **latest report**, published in October 2019, **placed India at 63<sup>rd</sup>** in Doing Business, compared with 77<sup>th</sup> in 2018 and 100 in 2017.

- India, along with other top improvers, had implemented 59 regulatory reforms in 2018-19, accounting for a fifth of all reforms recorded worldwide.
- During 2018-19, India had implemented reforms across parameters such as 'starting a business', 'dealing with construction permits', 'trading across borders', and 'resolving insolvency'. The government's goal was to be among the top 50 economies by 2020.

### World Bank

#### ➤ About:

- It was created in 1944, as the **International Bank for Reconstruction and Development (IBRD)** along with the **International Monetary Fund (IMF)**. The IBRD later became the World Bank.
- The World Bank Group is a unique global partnership of five institutions working for sustainable solutions that reduce poverty and build shared prosperity in developing countries.

#### ➤ Members:

- It has 189 member countries.
- **India is also a member country.**

#### ➤ Major reports:

- Ease of Doing Business.
- **Human Capital Index.**
- **World Development Report.**

#### ➤ Its Five development institutions:

- **International Bank for Reconstruction and Development (IBRD):** provides loans, credits, and grants.
- **International Development Association (IDA):** provides low- or no-interest loans to low-income countries.
- **International Finance Corporation (IFC):** provides investment, advice, and asset management to companies and governments.
- **Multilateral Guarantee Agency (MIGA):** insures lenders and investors against political risk such as war.
- **International Centre for the Settlement of Investment Disputes (ICSID):** settles investment-disputes between investors and countries.
  - **India is not a member** of this.

Note:



- The scores for India used to be based on coverage of just two cities, with Mumbai carrying a weight of 47% and Delhi a weight of 53%.

## PLI Scheme for Auto & Drone Sector

### Why in News

Recently, the Union Cabinet approved a Rs. 26,058 crore **Production Linked Incentive (PLI) scheme** for auto, auto-components and **Drone** industries to enhance India's manufacturing capabilities.

- The scheme for the sector is part of the overall production-linked incentives announced for 13 sectors in the **Union Budget 2021-22** with an outlay of Rs 1.97 lakh crore.
- It is a significant milestone in India's journey towards '**Atma Nirbharta**' and will **enable the country to join the top order of Auto and Drone manufacturing nations.**

### Takeaways

 <p><b>Auto</b></p> <ul style="list-style-type: none"> <li>▪ Incentives worth <b>₹26,058 crore</b> to be provided over five years</li> <li>▪ To attract fresh investments of over <b>₹42,500 crore</b></li> <li>▪ Incremental production of <b>₹2.3 lakh crore</b></li> <li>▪ Job creation for <b>7.6 lakh people</b></li> <li>▪ To help promote advance automotive technologies, clean energy</li> <li>▪ Open to existing automotive companies and new investors</li> </ul>	 <p><b>Drone</b></p> <ul style="list-style-type: none"> <li>▪ Drone industry to be allocated <b>₹120 crore</b>, over three years</li> <li>▪ Expected to bring fresh investments of over <b>₹5,000 crore</b></li> <li>▪ Incremental production of over <b>₹1,500 crore</b> likely</li> </ul>
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### Key Points

- **PLI Scheme:**
  - PLI scheme, introduced in March 2020, aims to **give companies incentives on incremental sales** from products manufactured in domestic units.
  - Apart from **inviting foreign companies to set shop in India**, it also aims to **encourage local companies** to set up or expand existing manufacturing units.
  - It has also been approved for sectors such as automobiles, **pharmaceuticals, IT hardware including laptops, mobile phones & telecom**

**equipment, white goods, chemical cells, food processing, Textile Sector** etc.

## HOW DOES THE INCENTIVE WORK

It is a kind of subsidy to the sector

Is a direct	Amount	Is based on
payment from the budget to goods made in India	varies from sector to sector	disadvantage /disability faced by a sector

### ➤ PLI for Auto Sector:

#### ○ About:

- It excludes conventional **petrol, diesel and CNG segments** (Internal Combustion Engine) since it has sufficient capacity in India.
- It is incentivizing **only advanced automotive technologies** or auto components whose supply chains are weak, dormant, or non-existing.
- It is **aimed at boosting new technology and the economy of clean fuels.**

#### ○ Components:

- **Champion OEM (Original Equipment Manufacturers) Scheme:**
  - It is a **sales value linked plan**, applicable to Battery Electric and **Hydrogen Fuel Cell** Vehicles of all segments.
- **Champion Incentive Scheme:**
  - It is a **Sales Value Linked** plan for advanced technology components, Complete and Semi-Knocked Down (CKD/SKD) kits, vehicle aggregates of 2-wheelers, 3-wheelers, passenger vehicles, commercial vehicles and tractors.

#### ○ Significance:

- This scheme along with the already launched **PLI for Advanced Chemistry Cell** and **Faster Adoption of Manufacturing of Electric Vehicles (FAME)** Scheme will give a **big boost to the manufacture of Electric Vehicles.**
- It will contribute towards **reducing carbon emissions and oil imports.**
- It will **encourage production of auto components using advanced technologies** that will boost localisation, domestic manufacturing and also attract foreign investments.

Note:

- It will help setting up **new facilities and create more jobs**. It is expected to generate **7.5 lakh jobs for the auto sector**.
- **PLI for Drone Sector:**
  - **About:**
    - It covers a **wide variety of drone components**, including airframe, propulsion systems, power systems, batteries, inertial measurement unit, flight control module, ground control station, communication systems, cameras, sensors, spraying systems, emergency recovery system, and trackers.
    - It is **expected to bring fresh investments of over Rs 5,000 crore and incremental production of over Rs 1,500 crore** and create additional employment of about **10,000 jobs**.
  - **Significance:**
    - It will **encourage entrepreneurs to strive towards building drones**, components, and software for the global market. It will also **open many more verticals for the utilisation of drones**.
    - It will **help reduce imports**. At present 90 % of the drones in India are imported.
      - The government intends to make India into a **global drone hub by 2030**.

## Digital Payment Systems

### Why in News

The **central banks of India and Singapore will link their respective fast digital payment systems** - Unified Payments Interface (UPI) and PayNow - for **“instant, low-cost, cross-border fund transfers”**.

- The linkage is **targeted to be operationalised by July 2022**.

### Key Points

- **About:**
  - The **Unified Payments Interface (UPI)-PayNow linkage** is a significant milestone in the **development of infrastructure for cross-border payments** between India and Singapore, and closely **aligns with the G20's financial inclusion priorities** of driving faster, cheaper and more transparent cross-border payments.
    - India is a **member of G20**.

- The linkage builds upon the **earlier efforts of NPCI International Private Ltd (NIPL)** and Network for Electronic Transfers (NETS, Singapore) to foster cross-border interoperability of payments using cards and QR codes between India and Singapore and **will anchor trade, travel and remittance flows between the two countries**.
  - **NIPL is the subsidiary of NPCI to popularise domestic payments technologies** such as UPI and RuPay abroad and co-create payment technologies with other countries.
- The initiative is in line with its **vision of reviewing corridors and charges for inbound cross-border remittances** outlined in the **Payment Systems Vision Document 2019-21**.
- From an investing perspective, this will **incentivize more retail investors to access global markets**. Currently, they pay up to Rs.3,000 in inter-bank charges which are **over and above the Liberalised Remittance Scheme (LRS) processing fees** by banks.
  - **LRS of the Reserve Bank of India (RBI)** allows resident individuals to remit a certain amount of money during a financial year to another country for investment and expenditure.

### ➤ UPI and Other Indian Payment Systems:

- **Unified Payments Interface:**
  - It is an **advanced version of Immediate Payment Service (IMPS)**- round-the-clock funds transfer service to make cashless payments faster, easier and smoother.
  - UPI is a system that **powers multiple bank accounts** into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood.
  - **National Payments Corporation of India (NPCI)** launched UPI with 21 member banks in 2016.
- **National Electronic Funds Transfer:**
  - NEFT is a nation-wide payment system facilitating one-to-one funds transfer. Under this Scheme, individuals, firms and corporates can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country participating in the Scheme.
  - There is **no limit – either minimum or maximum –** on the amount of funds that could be transferred using NEFT.

Note:



- However, the **maximum amount per transaction is limited to Rs. 50,000/- for cash-based remittances within India and also for remittances to Nepal** under the Indo-Nepal Remittance Facility Scheme.
- **RuPay Card Scheme:**
  - The name, derived from the words 'Rupee and 'Payment', emphasises that it is **India's very own initiative for Debit and Credit Card payments.**
  - The card can also be used for transactions in **Singapore, Bhutan, UAE, Bahrain and Saudi Arabia.**

## Promoting Pearl Farming in Tribal Areas: TRIFED

### Why in News

Recently, the **Trifed (Tribal Cooperative Marketing Development Federation of India)** inked an agreement with the **Jharkhand-based Purty Agrotech** for the promotion of pearl farming in tribal areas.

#### Tribal Cooperative Marketing Development Federation of India

- It is a **national-level apex organization functioning under the administrative control of the Ministry of Tribal Affairs.** It came into existence in 1987.
- It has its **Head Office located in New Delhi** and has a network of **13 Regional Offices** located at various places in the country.
- Its main objective is **socio-economic development of tribal people in the country** by way of marketing development of the tribal products such as metal craft, tribal textiles, etc.
- It mainly undertakes two functions viz. **Minor Forest Produce (MFP) development and Retail Marketing and Development.**

### Key Points

- **About:**
  - As part of the agreement, Purty Agrotech pearls will be sold through **141 Tribes India outlets, apart from various e-commerce platforms.**
  - Purty Agrotech's centre will be developed into a **Van Dhan Vikas Kendra Cluster (VDVKC).** Besides, there is a plan to develop 25 such VDVKCs for pearl farming in Jharkhand.

- **VDVKs** provide skill upgradation and capacity building training to tribals and setting up of primary processing and value addition facilities.
- The TRIFED has also signed an **MoU with e-grocery platform Big Basket** to promote and sell natural 'Van Dhan' products.
- The breeding of oysters and development of pearls is a sustainable mode of business and can be **easily practised by tribals who have access to nearby water bodies.**
- It will prove to be **game-changers for tribal livelihoods in the times to come.**
- **Pearl Farming:**
  - Pearls are the **only gemstones in the world that come from a living creature.** Mollusks such as oysters and mussels produce these precious jewels that people have adored since ancient times.
    - Pearl oysters are farmed in a number of countries in the world in the production of cultured pearls.
  - Freshwater pearls are pearls that are grown on pearl farms using **freshwater mussels.** Since mussels are the organic hosts, the **pearls can grow up to 10 times bigger than those made by saltwater oysters, naturally.** And, the **luster freshwater pearls produce is astounding.**
- **Benefits:**
  - **Increased Farmers Income:** The income of farmers in India is usually dependent on external factors like climate and this dependence often leads to their losses but on the other hand, Pearl farming is totally independent of these factors and gives one a high amount of profit.
  - **Eco-Friendly:** Pearl farming is eco-friendly. It provides habitat for fish and improves species diversity.
  - **Water Purification:** Filter feeder oysters also purify the water. A single oyster clears over 15 gallons of water a day.
    - It accumulates heavy metals from the water, and removes harmful pollutants as well.
- **Initiatives Taken:**
  - Pearl farmers can get benefits under **PMMSY (Pradhan Mantri Matsya Sampada Yojana).**
  - Considering the scope of pearl farming, the Department of Fisheries has included a **sub-component for pearl culture in the Blue Revolution scheme** for encouraging the sector.

Note:

## Agreement on Agriculture: WTO

### Why in News

Recently, while addressing the **G-33** Virtual Informal Ministerial Meeting, India's Commerce and Industry Minister pointed out the imbalances in the **Agreement on Agriculture** at the **World Trade Organization (WTO)**.

- He claimed that it was in **favour of developed countries** and historical asymmetries and imbalances must be corrected to ensure a **rule-based, fair and equitable order**.
- He urged that G33 must strive for positive outcomes on a permanent solution to **Public Stockholding (PSH)** for food security purposes, finalization of a **Special Safeguard Mechanism (SSM)** quickly and a balanced outcome on Domestic Support.

### G-33

- It is a **forum of developing countries formed during the Cancun ministerial conference of the WTO**, to protect the interest of the developing countries in agricultural trade negotiations.
  - **India is a part of the G33**, which is a **group of 47 developing and least developed countries**.
- It was created in order to **help group countries** which were all **facing similar problems**. The G33 has **proposed special rules for developing countries** at WTO negotiations, like allowing them to continue to restrict access to their agricultural markets.

### Key Points

- **About:**
  - It is aimed to **remove trade barriers and to promote transparent market access and integration of global markets**.
  - The **WTO's Agriculture Committee** oversees implementation of the Agreement and provides a forum for members to address related concerns.
- **Three pillars of Agreement on Agriculture:**
  - **Domestic Support:** It calls for **reduction in domestic subsidies** that distorts free trade and fair price.
    - Under this provision, the **Aggregate Measurement of Support (AMS) is to be reduced by 20%** over a period of 6 years by developed countries and

13% over a period of 10 years by developing countries.

- Under this, Subsidies are categorized into:

#### ➤ Green Box:

- Subsidies that **do not distort trade**, or at most cause minimal distortion.
- They are **government-funded** and must not involve price support.
- They also include **environmental protection and regional development programmes**.
- "Green box" subsidies are therefore **allowed without limits**, provided they comply with the policy-specific criteria.

#### ➤ Amber Box:

- All domestic support measures considered to **distort production and trade (with some exceptions) fall into the amber box** as all domestic supports except those in the blue and green boxes.
- These include **measures to support prices, or subsidies directly related to production quantities**.

#### ➤ Blue Box:

- This is the **"amber box with conditions"**. Such conditions are designed to reduce distortion.
- Any support that would normally be in the amber box is placed in the blue box if the support also requires farmers to limit production.
- At present, **there are no limits on spending on blue box subsidies**.

- **Market Access:** Market access for goods in the WTO means the **conditions, tariff and non-tariff measures, agreed by members** for the entry of specific goods into their markets.
  - Market access requires that **tariffs fixed (like custom duties) by individual countries be cut progressively** to allow free trade. It also required countries to remove non-tariff barriers and convert them to Tariff duties.
- **Export Subsidy:** Subsidy on **inputs of agriculture**, making export cheaper or other incentives for exports such as import duty remission etc are included under export subsidies.
  - These can **result in dumping of highly subsidized (and cheap) products** in other countries and damage the domestic agriculture sector of other countries.

Note:

### World Trade Organization

- It came into being in 1995. The WTO is the successor to the **General Agreement on Tariffs and Trade (GATT)** established in the wake of the **Second World War**.
  - Its objective is to help **trade flow smoothly, freely and predictably**.
  - It has **164 members**, accounting for **98% of world trade**.
- It was developed through a series of trade negotiations, or rounds, held under the GATT.
  - **GATT** is a set of multilateral trade agreements aimed at the **abolition of quotas and the reduction of tariff duties** among the contracting nations.
- The WTO's rules – the agreements – are the **result of negotiations between the members**.
  - The current set is largely the outcome of the **1986- 94 Uruguay Round negotiations**, which included a major revision of the original GATT.
- The WTO **Secretariat** is based in **Geneva** (Switzerland).
- Other Mechanisms of WTO
  - **Trade Related Aspects of Intellectual Property Rights (TRIPS)**
  - **Trade Facilitation Agreement**
  - General Agreement on Trade in Services (GATS)
  - **Trade Policy Review Mechanism**

## No Modification in the Resolution Plan Under IBC: SC

### Why in News

Recently, the **Supreme Court (SC)** held that the **Committee of Creditors (CoC)** approved resolution plan under the **Insolvency and Bankruptcy Code (IBC)** submitted to the **National Company Law Tribunal (NCLT)** cannot be modified.

- Earlier, in July 2021 the government introduced the **Insolvency and Bankruptcy Code (Amendment Bill), 2021** in the Lok Sabha.

### Key Point

- **SC's Ruling:**
  - **No Modifications:** The **adjudicating authority cannot allow modifications or withdrawals of Resolution Plans** approved by the Committee of

Creditors at the behest of the successful Resolution Applicant, **once the plan is submitted to it**.

- **Timely Completion: Corporate Insolvency Resolution Process (CIRP)** carried out under the IBC **must be completed within 330 days** as laid down by the Code.
  - It quoted a report of the Parliamentary standing committee on finance which stated that **71% cases are pending for more than 180 days before NCLT (National Company Law Tribunal)**.
  - And asked the NCLT and the **National Company Law Appellate Tribunal (NCLAT)** to stick to this, and should therefore, while deciding IBC matters, **respect the deadline** keeping in mind the effect of such delays on the insolvency resolution process.
  - **Judicial delay was one of the major reasons for the failure of the insolvency regime** that was in effect **prior to the IBC**.
  - The **time limit can be extended only in exceptional circumstances** as otherwise, the open-ended process for further negotiations or a withdrawal, **would have a deleterious impact on the Corporate Debtor**, its creditors, and the economy at large as the liquidation value depletes with the passage of time.

### Insolvency Resolution Process in India:

- **Eligibility:** Under IBC, companies (both private and public limited company) and Limited Liability Partnerships (LLP) **can be considered as defaulting corporate debtors**.
  - A corporate debtor is any corporate organization which owes a debt to any person.
- **Default Amount:** The IBC can be triggered if there is a **minimum default of Rs 1 Crore**. This process can be triggered by way of filing an application before the NCLT.
- **Resolution Initiation:** The process can be **initiated by two classes of creditors** which would include financial creditors and operational creditors.
  - **Creditors:** A Creditor means any person to whom a debt is owed and includes a financial creditor, an operational creditor, etc.
  - **Financial Creditors:** The financial creditor in simple terms is the institution that provided money to the corporate entity in the form of loans, bonds etc. E.g. banks.

Note:

- **Operational Creditors:** An operational creditor is the entity who has a claim for providing any of the four categories to the defaulted corporate-goods, services, employment and Government dues (central govt, state or local bodies).
- **Appointment of Interim Resolution Professional:** As soon as the matter is admitted by the NCLT, the NCLT proceeds with the appointment of an **Interim Resolution Professional (IRP)** who takes over the management of the defaulting debtor.
- **Committee of Creditors (CoC):** A committee consisting only of the financial creditors i.e. the CoC is formed by the IRP.
  - **Only operational creditors having aggregate dues of at least 10%** of the total debt are invited into the meeting of CoC (**Operational creditors are not a member of CoC**). The operational creditors don't have any voting power.
- **Corporate Insolvency Resolution Process (CIRP):** It includes **necessary steps to revive the company such as raising fresh funds for operation**, looking for a new buyer to sell the company as a going concern, etc.
  - The CoC takes a decision regarding the future of the outstanding debt owed to it. The resolution plan can be implemented only if it has been approved by 66% of the creditors in the CoC.
  - The IBC (Amendment Bill), 2021 introduced an alternate insolvency resolution process for **Micro, Small and Medium Enterprises (MSMEs)** with defaults up to Rs 1 crore called the **Pre-packaged Insolvency Resolution Process (PIRP)**.
- **Liquidation Proceedings:** In the event a resolution plan is not submitted or not approved by the Committee of Creditors (CoC), the CIRP process is deemed to have failed. In such a situation the liquidation proceedings commences subject to the order of the tribunal.

## Reforms in Telecom Sector

### Why in News

Recently, the Union Cabinet has approved a **number of structural and process reforms in the Telecom sector**.

- These reforms **include a redefinition** of the much-litigated concept of **Adjusted Gross Revenue (AGR)**,

a four-year moratorium on Telecom Service Providers' (TSPs) dues to the government, among others.

### Relief and reforms

- Rationalisation of Adjusted Gross Revenue: Non-telecom revenue will be excluded on prospective basis from the definition of AGR
- Huge reduction in Bank Guarantee (BG) requirements (80%) against licence fee and other similar levies. No requirements for multiple BGs in different Licenced Service Areas (LSAs) regions in the country. Instead, one BG will be enough
- From October 1, 2021, delayed payments of licence fee (LF)/Spectrum Usage Charge (SUC) will attract interest rate of SBI's MCLR plus 2% instead of MCLR plus 4%; interest compounded annually instead of monthly; penalty and interest on penalty removed
- For auctions held henceforth, no BGs will be required to secure instalment payments
- In future auctions, tenure of spectrum increased from 20 to 30 years
- Surrender of spectrum will be permitted after 10 years for spectrum acquired in the future auctions
- No Spectrum Usage Charge (SUC) for spectrum acquired in future spectrum auctions
- Additional SUC of 0.5% for spectrum sharing removed
- To encourage investment, 100% FDI under automatic route permitted in telecom sector. All safeguards will apply



### Key Points

#### ➤ About the Reforms:

- **Spectrum Related Reforms: Spectrum auctions** will be normally held in the last quarter of every financial year (fixed calendar).
  - The future spectrum auctions will be done for a **period of 30 years instead of the current 20 years**.
  - A telco will be allowed to surrender its spectrum after completing a 10-year lock-in period from the date of purchase.
  - Spectrum sharing is being encouraged and the additional SUC (Spectrum Usage Charges) of **0.5% for spectrum sharing is removed**.
  - Spectrum relates to the radio frequencies allocated to the mobile industry and other sectors for communication over the airwaves.
- **Rationalization of AGR:**
  - AGR was previously interpreted as being based on all revenue, rather than just that associated with a company's core telecom business.

Note:

- The government has accepted that this interpretation was problematic, which will reduce the future financial burden on companies.
- Telecom companies have to **pay a pre-fixed percentage of AGR (excluding non-telecom revenues) to the government** as statutory levies but this **will apply prospectively**.
- **Moratorium on AGR Dues:** The **earlier definition of AGR**, backed by the Telecom Department and upheld by the Supreme Court in 2019, had **made telcos liable to pay Rs.1.6 lakh crore**.
  - This payment has cash-strapped the telecom sector, which led to the losses of business to telecom companies like Vodafone and established a duopoly (reliance Jio and Bharti Airtel).
  - In order to revive the telecom sector, a four-year moratorium on all spectrum and AGR dues has been approved.
  - However, those TSPs opting for the moratorium **will be required to pay interest** on the amount availed under the benefit.
- **Interest Rates Rationalized and Penalties Removed:**
  - The interest which is compounded monthly on the Spectrum Usage Charges (SUC) will **now be compounded annually** and also the interest rate will be lowered, based on **MCLR + 2%** instead of MCLR + 4%.
    - MCLR refers to the lowest lending rate banks are permitted to offer - the Marginal Cost of funds-based Lending Rate.
  - Additionally, the penalty and interest on penalty stand removed.
- **FDI Reforms: Foreign Direct Investment (FDI)** in the sector has also been allowed up to 100% under the automatic route, from the existing limit of 49%.
  - **Significance of these Reforms:**
    - **Reviving Competition:** Four years' Moratorium would encourage companies to invest in customer service and new technology.
    - **Promoting Ease of Doing Business:** The allowance of 100% FDI in the sector (through the automatic route) came shortly after the government decided to **scrap a controversial retrospective tax**.
      - Together, these signal the return to an investor-friendly climate.

### Adjusted Gross Revenue

- AGR is a **fee-sharing mechanism** between the government and the telcos who shifted to the 'revenue-sharing fee' model in 1999, from the 'fixed license fee' model.
  - In this course, telcos are supposed to share a percentage of AGR with the government.
- Under this, mobile telephone operators were required to share a percentage of their AGR with the government as annual License Fee (LF) and Spectrum Usage Charges (SUC).
- In 2005, Cellular Operators Association of India (COAI) challenged the government's definition for AGR calculation.
  - The companies claimed that AGR should comprise just the revenue accrued from core services and not dividend, interest income or profit on the sale of any investment or fixed assets.
- The Supreme Court upheld the definition of AGR as stipulated by the DoT (revenues from both telecom and non-telecom services) in October 2019.

- **Promoting Digital India:** The telecom sector is one of the prime movers of the economy and the measures announced by the government would enable the industry to achieve the goals of **Digital India**.
- **Further Technological Advancement:** Together, these measures would pave the way for large scale investments into the sector, including for 5G technology deployment, and generate more jobs.

## Sufficiency Economy Philosophy: Thailand

### Why in News

Thailand believes that its homegrown development approach of **Sufficiency Economy Philosophy (SEP)** can serve as an alternative approach to achieving the **Sustainable Development Goals (SDGs)**.

- In **2020**, Indian PM announced **Atmanirbhar Bharat** or Self-reliant India Movement, which has a similar approach to make India and its citizens independent and self-reliant in all senses. When India speaks of self-reliance, it does not advocate for a self-centered system, there is also a concern for the whole world's happiness, cooperation and peace.

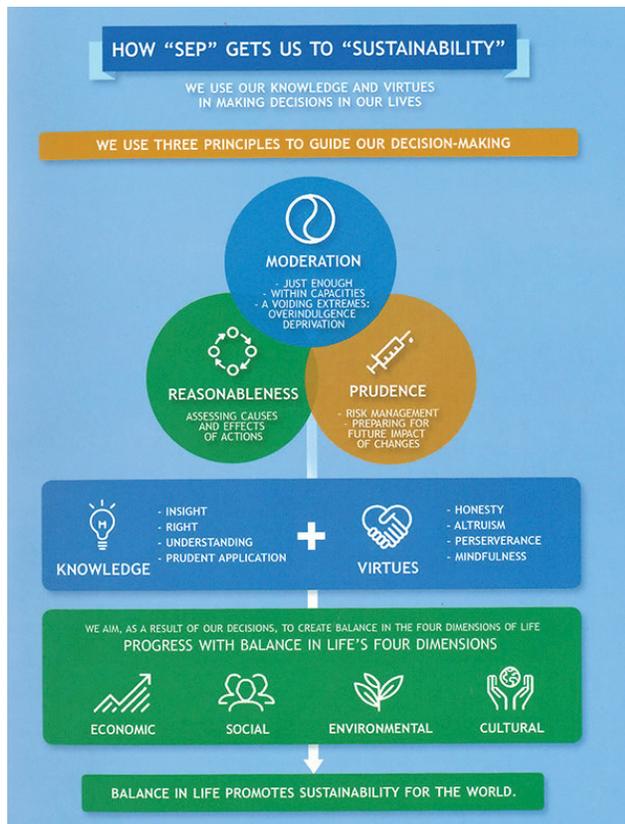
Note:



## Key points

### ➤ About:

- It is an **innovative approach to development designed** for practical application over a wide range of problems and situations.
  - It is also part of the **fundamental administration policy** of the state (Thailand).
  - It was introduced in Thailand after the **Asian financial crisis in 1997**.
- It is a philosophy that **guides one's inner thinking to immunize oneself from external shocks** and can be applied in any setting and at any levels.



### ➤ Levels:

- **Individual and Family Level:** It means living a **simple life, living within one's means**, and refraining from taking advantage of other people.
- **Community Level:** It involves **joining together** to participate in decision-making, developing mutually-beneficial knowledge, and appropriately applying technology.
- **National Level:** It postulates a **holistic approach with an emphasis upon appropriateness, competitive advantage, low risk, and avoiding over-investment**.

- It involves **keeping abreast with what is happening elsewhere in the world, hedging investments, and reducing imports** and over dependence on other countries.

### ➤ Pillars:

- **Knowledge:** It enables **effective planning and execution** of developmental activities.
- **Ethics and Values:** It enhances human development by **emphasizing honesty, altruism, and perseverance**, with creating active, engaged citizens, and promoting good governance as the ultimate goal.

### ➤ Principles:

- **Moderation:** It entails producing and **consuming within one's capacity and avoiding overindulgence**.
- **Reasonableness:** It is using one's **mental faculties to examine the causes and consequences of actions** on one's well-being, household and community.
- **Prudence:** It refers to **risk management** in order to be prepared for impacts from any disruptions.

## G-20 Agriculture Meet 2021

### Why in News

Recently, India's Agriculture Minister addressed the **G20 Agriculture meeting** virtually.

- It is one of the ministerial meetings organised as part of the **G20 Leaders Summit 2021** to be hosted by **Italy** in October 2021.

### Key Points

#### ➤ Highlights of the Meet:

- Signed a final statement named the **"Florence Sustainability Charter"**.
  - It will **strengthen cooperation between G20 members and developing countries on food and agriculture** to share knowledge and help developing the internal production capacities best suited to local needs, thus contributing to the resilience and recovery of agriculture and rural communities.
- **Reaffirmed their intention to reach the goal of zero hunger**, which is also threatened by the consequences of **Covid-19**.
- Reaffirmed the commitment to achieve food security in the framework of the **three dimensions of sustainability**: economic, social and environmental.

Note:

**G20****About:**

- It is an **informal group of 19 countries** and the **European Union (EU)**, with representatives of the **International Monetary Fund** and the **World Bank**.
  - It **does not have a permanent secretariat or Headquarters**.
- The membership comprises a mix of the world's largest advanced and emerging economies, **representing about two-thirds of the world's population, 85% of global gross domestic product, 80% of global investment and over 75% of global trade.**

**Members:**

- Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States and the EU.

**India's Stand:**

- **Focus on Traditional Food:**
  - **Emphasised** on re-introducing **traditional food items including millet**, other nutritious cereals, fruits and vegetables, fish, dairy and organic products in the diet of the people.
    - Their production has been phenomenal in India in recent years and **India is becoming a destination country for healthy food items.**
  - The **United Nations (UN)** has accepted India's

proposal and declared **2023** as the **International Year of Millets** and urged the G20 nations to support the celebration of the millet year to promote nutrition and sustainable agriculture.

**Biofortified Food:**

- **Biofortified** varieties, which are the source of a staple diet rich in micronutrients, are being promoted to remove malnutrition.
  - About **17 such varieties of different crops have been developed** and released for cultivation.

**Water Resource:**

- India has also taken steps to increase the **optimal use of water resources, create infrastructure for irrigation, conserve soil fertility** with balanced use of fertilizers, and provide connectivity from farms to markets.

**Indian Agri-Sector in Covid:**

- Indian agriculture has **achieved great success after the country's independence**, and the sector also **remained unaffected even during the Covid pandemic.**

**India Resolved to:**

- Continue working together to achieve the **Poverty Reduction' and 'Zero Hunger Goal as part of the sustainable development goals.**
- Cooperate in research and development as well as exchange of best practices to enhance productivity.

**Related Indian Initiatives:**

- The **'Per Drop-More Crop'** scheme for irrigation and **'Paramparagat Krishi Vikas Yojana'** for organic farming is being successfully implemented.
- **Pradhan Mantri Fasal Bima Yojana** is being implemented to provide insurance cover for the farmers.
- To address the **malnutrition** problem, India is running the world's largest food-based safety net programme, which includes the **Public Distribution System** and the **Mid-Day Meal Scheme.**
- The government is also providing an annual income support of Rs 6,000 under the **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)**



Note:

# International Relations

## Highlights

- Extension of CPEC to Afghanistan
- Build Back Better World (B3W) Initiative
- Connectivity Projects: India and Southeast Asia
- First in-Person Meeting of Quad Countries
- CEPA: India-UAE
- 21<sup>st</sup> SCO Summit
- 15<sup>th</sup> East Asia Summit Energy Ministers Meeting
- Saudi Arabia Foreign Minister's Visit
- First in-Person Meeting of Quad Countries
- PM Speech at United Nations General Assembly
- Congressional Report on Terrorism: US

## Extension of CPEC to Afghanistan

### Why in News

Recently, Pakistan has discussed Taliban - led Afghanistan joining the multibillion-dollar China-Pakistan Economic Corridor (CPEC) infrastructure project.

- China has proposed construction of the Peshawar-Kabul motorway as an extension of CPEC in Afghanistan.
- Taliban takeover of Afghanistan and China emerging as a major challenge in the form of the extension of its ambitious CPEC, has raised India's concerns on economic, political and security fronts.

### Key Points

- **China-Pakistan Economic Corridor:**
  - The CPEC is a bilateral project between Pakistan and China.
  - It is intended to promote connectivity across Pakistan with a network of highways, railways, and pipelines accompanied by energy, industrial, and other infrastructure development projects.
  - It aims to link the Western part of China (Xinjiang province) to the Gwadar Port in Balochistan, Pakistan via Khunjerab Pass in the Northern Parts of Pakistan.
    - It will pave the way for China to access the Middle East and Africa from Gwadar Port, enabling China to access the Indian Ocean.

- CPEC is a part of the Belt and Road Initiative. The BRI, launched in 2013, aims to link Southeast Asia, Central Asia, the Gulf region, Africa and Europe with a network of land and sea routes.
- India has been severely critical of the CPEC, as it passes through Pakistan-occupied Kashmir, which is a disputed territory between India and Pakistan.



- **Implications of Afghanistan Joining CPEC on India:**
  - **Filling the Void:** In Afghanistan, China is trying to fill the vacuum created after the US forces left Afghanistan economically and gets its Belt and Road (BRI) initiatives going.
  - **Undermining Chabahar Port:** The foremost concern with Afghanistan joining CPEC is that India

Note:



is apprehensive of its investment in **Chabahar port** in Iran.

- India is wary of undermining the **India–Iran–Afghanistan trilateral** that gives Afghanistan access to sea via Chabahar port.
- **Weakening of India's Economic Influence:** Attempts to extend CPEC to Afghanistan may undermine **India's position as economic, security and strategic partner of Afghanistan.**
  - India has been the biggest regional donor to Afghanistan committing more than US\$2 billion for the developmental work that includes construction of roads, power plants, dams, parliament building, rural development, education, infrastructure and much more.
  - With Extension of CPEC, China will play a leading role in Afghanistan **overpowering India's economic influence in Afghanistan.**
- **Terrorism and Strategic Concerns:** Given **India's limited strategic depth** in Afghanistan, **China is in better position to leverage its strategic advantages** in Afghanistan.
  - Further, Afghanistan's inclusion in the CPEC will definitely help in the economic development, but it will also help **Pakistan gain the strategic advantage and upper hand in Afghanistan at the cost of India.**
  - In this situation, **Pakistan may augment use of terrorism against India.**
- **Control of Strategic Air Base:** Besides its issues with the CPEC, India will be wary of the likelihood that China may try to take over the Bagram air force base in Afghanistan.
  - The Bagram airport is the biggest airport and technically well-equipped as the Americans kept it for their use till the end, instead of the Kabul airport.
- **Exploitation of Rare Earth Minerals:** With the extension of CPEC, China is also looking to exploit Afghanistan's rich minerals and highly lucrative rare-earth mines.
  - Rare-earth metals, which are key components for a host of advanced electronic technologies and hi-tech missile guidance systems.

## Build Back Better World (B3W) Initiative

### Why in News

US officials are set to visit Latin America to look for possible projects for the Build Back Better World (B3W) Initiative. B3W is an international infrastructure investment initiative announced by the **Group of Seven (G-7) richest democracies** in June 2021.

- The B3W initiative is being seen as the **US' initiative to counter China's Belt and Road Initiative (BRI).**

### Key Points

- **B3W & its Guiding Principles:**
  - **Goal:** The Build Back Better Plan is a Covid-19 relief, future economic, and infrastructure package proposed by G-7 countries for developing and lower-income countries.
  - **Components of B3W:** Through B3W, the G7 and other like-minded partners will coordinate in **mobilizing private-sector capital** in four areas of focus:
    - Climate,
    - Health and health security,
    - Digital technology,
    - Gender equity and equality.
  - **Values-Driven Development:** Infrastructure development carried out in a transparent and sustainable manner - financially, environmentally, and socially - will lead to a better outcome for recipient countries and communities.
  - **Good Governance and Strong Standards:** B3W to infuse investment by complying with the standards promoted by the **Blue Dot Network**, relating to the environment and climate, labor and social safeguards, transparency, financing, construction, anti-corruption, and other areas.
  - **Climate-Friendly:** The investments will be made in a manner consistent with achieving the goals of the **Paris Climate Agreement.**
  - **Strong Strategic Partnerships:** B3W will envisage countering the aggressive model of development and establish a more inclusive model of global development.
- **BRI & Associated Issues:**

Note:



- The BRI project was **launched in 2013**, it broadly aims to facilitate cross-border transportation of goods, access to energy, creating demand for existing excess capacity in Chinese industries.
  - China had an overall exposure of investment of around \$750 billion between 2013 to mid-2020.
- However, BRI project has been **heavily criticized** for the following reasons:
  - Western critics have attacked the initiative as **new colonialism**, or the Marshall Plan for the 21<sup>st</sup> century.
  - BRI is also being seen as a part of China's **debt trap policy**, wherein China intentionally extends excessive credit to another country with the intention of extracting economic or political concessions from the debtor country.
  - Also, projects like **China-Pakistan Economic Corridor (CPEC)**, building of Colombo Port City Project in Sri Lanka are not only commercial in nature but have strategic implications too.

## Connectivity Projects: India and Southeast Asia

### Why in News

Recently, at the virtual **ASEAN (Association of Southeast Asian Nations) summit on Future of India-ASEAN Connectivity Partnerships**, the Indian government underlined the importance of cross-border connectivity between India and Southeast Asian nations.

- **ASEAN** brings together **ten Southeast Asian states** – Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam – into one organisation.

### Key Points

- **Connectivity between India and Southeast Asia:**
  - India currently is working with ASEAN on multiple connectivity projects, **through land, water, and air**.
  - Giving substance to ASEAN-India relations through connectivity will **gradually change the geopolitical landscape of this region**.
  - In this context, India has now been **actively developing infrastructure in Northeastern India**.
    - **Bangladesh-China-India-Myanmar (BCIM) Corridor** is part of this.

- These connectivity projects **will not only curb existing insurgencies**, but also help India's north-eastern states to develop their economic potential and integrate with mainland India.
- Further, **India-ASEAN Free Trade Agreement (FTA)** is central to India's growing engagement with her eastern neighbours.
  - It will enable small and medium-sized enterprises in the border areas to explore new business opportunities.

### ➤ Examples of Cross Connectivity Projects:

- **India-Myanmar-Thailand Trilateral Highway:**
  - One of the flagship projects for **land connectivity** between ASEAN and India.
  - Connecting the three countries **from Moreh in India to Mae Sot in Thailand to Bagan in Myanmar**, was first proposed in 2002.
  - Besides this, the **India, Myanmar, and Thailand Motor Vehicles Agreement (IMT MVA)** is in the final stage.
    - On realization, this will become the **first-ever cross border facilitation agreement between South and Southeast Asia**.



- **Kaladan Multi-Modal Transit Transport Project (KMMTTP):**
  - To develop connectivity **through water**, ASEAN and India are working on **KMMTTP**.
  - Initiated by the Indian government in 2008 and is entirely funded by India.
  - To seek an **alternative route through Myanmar for the transportation of goods to the northeast region of India**.

Note:



- Connects **Kolkata in India to Sittwe and Paletwa in Myanmar** by sea and river respectively.
- Alongside this initiative, India has contributed to build a sea link via Sittwe port in Myanmar in order to enable an **alternative transit route through Bangladesh.**



- **Mekong-India Economic Corridor (MIEC):**
  - Involves the integration of **four Mekong countries – Vietnam, Myanmar, Thailand, and Cambodia - along with India**, connecting Ho Chi Minh City, Dawei, Bangkok, and Phnom Penh with Chennai.
  - The corridor will provide opportunities for the participant countries to develop infrastructure, enhance their economic base with the region, and especially reduce the transit distance between India and ASEAN countries.



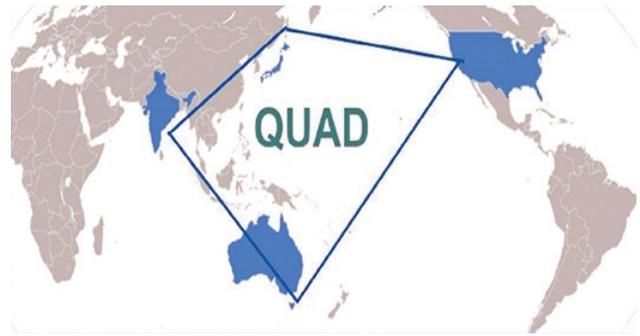
## First in-Person Meeting of Quad Countries

### Why in News

Recently, the first in-person meeting of **Quad** leaders was hosted by the US. Issues like climate change, Covid-19 pandemic and challenges in the Indo Pacific, amidst China's growing military presence in the strategic region, were discussed in the meeting.

### Key Points

- **Background:**



- In **November 2017**, India, Japan, the US and Australia gave shape to the long-pending proposal of setting up the Quad to develop a new strategy to keep the critical sea routes in the Indo-Pacific free of any influence.
  - **China claims nearly all of the disputed South China Sea**, though Taiwan, the Philippines, Brunei, Malaysia and Vietnam all claim parts of it.
  - The South China Sea is an arm of the Western Pacific Ocean.
- In **2020**, the trilateral **India-US-Japan Malabar naval exercises expanded to include Australia**, marking the first official grouping of the Quad since its resurgence in 2017.
  - Further, it is the first joint military exercises among the four countries in over a decade.
- In **March 2021**, the **Quad leaders met virtually** and later released a joint statement titled '**The Spirit of the Quad**,' which outlined the group's approach and objectives.
  - Further, just before this meeting, the US has announced a new trilateral security partnership for the Indo-Pacific, between **Australia, the UK and the US (AUKUS)**.
- **Major Highlights of the Quad Summit:**
  - Discussed **Afghanistan** and agreed to deepen their cooperation in South Asia.
  - **Quad Vaccine Initiative:** Under this, the Quad countries have pledged to donate more than 1.2 billion Covid-19 vaccine doses globally, in addition to the doses financed through **Covax**.
  - **Building Back Better Health Security:** Supported the call for a "global pandemic radar" to improve viral genomic surveillance and expand the **WHO Global Influenza Surveillance and Response System (GISRS)**.

Note:

- **Quad Infrastructure Coordination Group:** The **G7 grouping** has recently announced the **Build Back Better World (B3W) initiative**.
  - Based on similar lines, the Quad will establish high-quality infrastructure and will share expertise, capacity, and influence in the region and identify new opportunities to meet the needs there.
- **Tackling Climate Change:** In this context, Quad countries has envisaged to establish:
  - **Green-Shipping Network** for deployment of green-port infrastructure.
  - **Clean-Hydrogen Partnership** to strengthen and reduce costs across all elements of the clean-hydrogen technology, leveraging existing bilateral and multilateral hydrogen initiatives in other fora.
  - **Climate Adaptation, Resilience, and Preparedness** for increasing the Indo-Pacific region's resilience to climate change by improving critical climate information-sharing and disaster-resilient infrastructure.
  - Apart from this, Quad countries intend to update or communicate ambitious **NDCs** (Nationally Determined Contributions) **by COP26**.
- **The Quad Fellowship:** The Fellowship will sponsor 100 students per year - 25 from each Quad country - to pursue masters and doctoral degrees at leading STEM (Science, Technology Engineering, and Mathematics (STEM) programmes) graduate universities in the United States.
- **Semiconductor Supply Chain Initiative:** It will be a joint initiative to map capacity, identify vulnerabilities, and bolster supply-chain security for semiconductors and their vital components.
  - This initiative will help ensure Quad partners support a diverse and competitive market that produces the secure critical technologies essential for digital economies globally.
- **Critical and Emerging Technologies:** The announcement of launch of a **5G** deployment and calls for monitoring trends in advanced biotechnologies, including synthetic biology, genome sequencing, and biomanufacturing.
- **Quad Senior Cyber Group:** This group will make shared cyber standards; development of secure software; building workforce and talent; and

promoting the scalability and cybersecurity of secure and trustworthy digital infrastructure.

- **Satellite Data Sharing:** The Quad will begin space cooperation for the first time with a new working group.
  - In pursuance of this, Quad countries will start discussions to exchange Earth observation satellite data and analysis on climate-change risks and the sustainable use of oceans and marine resources.

## CEPA: India-UAE

### Why in News

Recently, India and the United Arab Emirates (UAE) formally launched negotiations on the India - UAE **Comprehensive Economic Partnership Agreement (CEPA)**.

- Looking to build on the progress made by both countries under the **Comprehensive Strategic Partnership signed in 2017**, both countries expressed a desire to reach a **mutually beneficial economic deal**.



### Key Points

- **Comprehensive Economic Partnership Agreement:**
  - It is a **kind of free trade pact** which covers negotiation on the trade **in services and investment**, and other areas of economic partnership. It may even consider negotiation on areas such as trade facilitation and customs cooperation, competition, and **Intellectual Property Rights**.

Note:



- Partnership agreements or cooperation agreements are more comprehensive than **Free Trade Agreements**.
- CEPA also looks into the **regulatory aspect of trade** and encompasses an agreement covering the regulatory issues.
- India has signed CEPAs with South Korea and Japan.
- **India-UAE Economic Relations:**
  - The **UAE is currently India's third-largest trading partner** with bilateral trade in 2019/2020 valued at **USD 59 billion**.
  - The **UAE is also India's second-largest export destination after the US**, with exports valued at approximately **USD 29 billion in 2019-2020**.
  - The **UAE is the eighth-largest investor in India**, having invested USD 11 billion between April 2000 and March 2021, while investment by Indian companies in the UAE is estimated to be over USD 85 billion.
  - **Major Exports:** Petroleum products, precious metals, stones, gems and jewellery, minerals etc.
  - **Major Imports:** Petroleum and petroleum products, precious metals, stones, gems and jewellery, minerals etc.
- **Significance of India-UAE CEPA:**
  - It is expected to increase bilateral trade in goods to USD 100 billion within five years of the signed agreement and increase trade in services to USD 15 billion, leading to wider social and economic opportunities in both nations.

#### Other Types of Trade Agreements

- **Free Trade Agreement (FTA):**
  - It is an agreement in which **two or more countries agree to provide preferential trade terms, tariff concession etc.** to the partner country.
  - India has negotiated FTA with many countries e.g. Sri Lanka and various trading blocs as well e.g. **ASEAN**.
- **Preferential Trade Agreement (PTA):**
  - In this type of agreement, two or more partners give **preferential right of entry to certain products**. This is done by reducing duties on an agreed number of tariff lines.
  - Tariffs may even be reduced to zero for some products even in a PTA. **India signed a PTA with Afghanistan**.

- **Comprehensive Economic Cooperation Agreement (CECA):**
  - CECA generally **covers negotiation on trade tariff and TRQ (Tariff Rate Quotas) rates only**. It is not as comprehensive as CEPA. India has signed CECA with Malaysia.
- **Bilateral Investment Treaty (BIT):**
  - It is a bilateral agreement in which **two countries sit together and decide the conditions for private investments** by citizens and firms of the two countries.
- **Trade and Investment Framework Agreement (TIFA):**
  - It is a trade pact between two or more countries which **establishes a framework for expanding trade and resolving outstanding disputes** between countries.

## 21<sup>st</sup> SCO Summit

### Why in News

- The 21<sup>st</sup> Summit of the **Shanghai Cooperation Organisation (SCO)** Council of Heads of State was held recently via video Conferencing in **Dushanbe, Tajikistan**.
- At the meet the focus was primarily on the **ground situation in Afghanistan and its global repercussions**.
  - **Iran** has been accepted as the **ninth full member of the organisation**.

### Key Points

- **India's Stand:**
  - It took a **strong stance against radicalisation and extremism**, urging the panel to come up with a **joint approach** and frame a **code of conduct** to stop terror financing and cross-border terrorism.
    - It also stressed upon the **importance of moderate Islam in Central Asia**.
  - Flagged **concerns over the serious humanitarian crisis** unfolding in Afghanistan, noting that the economic woes of the Afghan people are increasing due to the **blockage in financial and trade flows**.
  - Pointed out that the developments in the country could lead to an **uncontrolled flow of drugs, illegal weapons and human trafficking**.

Note:

- It is committed to increasing its connectivity with **Central Asia**. Asserting that there should be respect for the territorial integrity of all countries.
- **Shanghai Cooperation Organisation:**
  - **About:**
    - It is a permanent intergovernmental international organisation. It was created in 2001.
    - The SCO Charter was signed in 2002, and entered into force in 2003.
    - It's a Eurasian political, economic and military organisation aiming to maintain peace, security and stability in the region.
    - It is seen as a counterweight to **North Atlantic Treaty Organization (NATO)**, It is a nine-member economic and security bloc and has emerged as one of the largest transregional international organisations.
  - **Official Languages:**
    - Russian and Chinese.
  - **Permanent Bodies:**
    - SCO Secretariat in Beijing
    - Executive Committee of the Regional Anti-Terrorist Structure (RATS) in Tashkent.
  - **Chairmanship:**
    - It is by rotation for a year by Member States.
  - **Genesis:**
    - Prior to the creation of SCO in 2001, **Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan were members of the Shanghai Five.**
    - Shanghai Five (1996) emerged from a series of border demarcation and demilitarization talks which the four former Soviet republics held with China to ensure stability along the borders.
    - Following the accession of Uzbekistan to the organisation in 2001, the Shanghai Five was renamed the SCO.
    - **India and Pakistan became members in 2017. Iran is the ninth and the newest member of SCO.**
      - **India was made an observer at the SCO in 2005** and has generally participated in the ministerial-level meetings of the grouping which focus mainly on security and economic cooperation in the Eurasian region.

## 15<sup>th</sup> East Asia Summit Energy Ministers Meeting

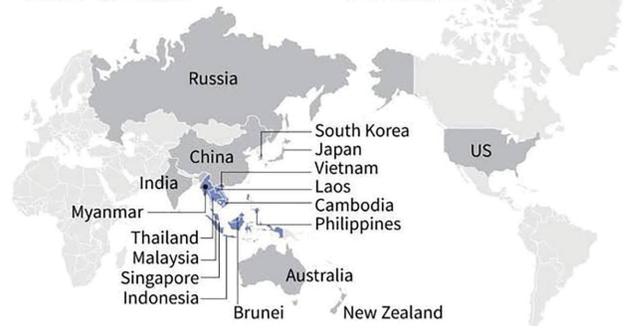
### Why in News

Recently, the **Union Minister of State for Power** attended the **15<sup>th</sup> East Asia Summit Energy Ministers Meeting**.

- The theme of the meeting was “**We Care, We Prepare, We Prosper**”.

### Key Points

- **About the Meeting:**
  - The meeting was aimed at **coordinating efforts of Association of Southeast Asian Nations (ASEAN) countries** in pursuing the goal of energy security and energy transition that will benefit the people of the region.
  - India confirmed that **ASEAN is a region of great importance** and engagement with ASEAN has been, and will remain, a critical element of **India's 'Act East' policy and strategy**.
    - **Acting East** is now a central element in India's **Indo-Pacific vision**.
  - A brief status of the **Indian energy transition** plans, policies, challenges and efforts towards **decarbonisation** was also provided.
    - Some of India's initiatives include **National Solar Mission (NSM), Pradhan Mantri Ujjwala Yojana (PMUY), Unnat Jyoti by Affordable LEDs for All (UJALA), Smart City Mission (SCM)**, etc.



### ➤ East Asia Summit:

- **About:**
  - **Established in 2005**, it is a **forum of 18 regional leaders** for strategic dialogue and cooperation on the key political, security, and economic challenges facing the **Indo-Pacific region**.

Note:



- The concept of an East Asia Grouping was **first promoted in 1991** by the then Malaysian Prime Minister, Mahathir bin Mohamad.
  - There are **six priority areas** of regional cooperation within the framework of the EAS. These are – Environment and Energy, Education, Finance, Global Health Issues and Pandemic Diseases, Natural Disaster Management, and ASEAN Connectivity.
  - **Membership:**
    - It comprises the **ten member states of the ASEAN** which are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam, **along with 8 other countries** namely Australia, China, Japan, India, New Zealand, the Republic of Korea, Russia and the USA.
    - It is an **ASEAN-centred forum** so it can **only be chaired by an ASEAN member**.
      - **Brunei Darussalam is the chair for 2021.**
  - **EAS Meetings and Processes:**
    - The EAS calendar culminates in the **annual Leaders' Summit**, which is usually held alongside ASEAN Leaders' meetings in the fourth quarter of every year.
    - **Meetings of EAS Foreign Ministers and Economic Ministers are also held annually.**
  - **India and EAS:**
    - **India is one of the founding members** of the East Asia Summit.
    - At the East Asia Summit in Bangkok in November 2019, India had unveiled **India's Indo-Pacific Oceans Initiative (IPOI)**, which is aimed at forging partnerships to create a secure and stable maritime domain.
- **Other Related Groupings:**
- **ASEAN Defence Ministers Meeting (ADMM) Plus:**
    - It is an **annual meeting of Defence Ministers of 10 ASEAN countries and eight dialogue partner countries.**
    - The **ADMM-Plus countries** include ten ASEAN Member States and eight Plus countries, namely Australia, China, India, Japan, New Zealand, Republic of Korea, Russian Federation, and the United States (**same as in the EAS**).
  - **ASEAN Regional Forum:**

- **Established in 1994**, the ASEAN Regional Forum (ARF) is an important platform for security dialogue in the Indo-Pacific.
- It comprises **27 members**: the 10 ASEAN member states, the 10 ASEAN dialogue partners (Australia, Canada, China, the European Union, India, Japan, New Zealand, the Republic of Korea (ROK), Russia and the United States); Bangladesh, the Democratic People's Republic of Korea, Mongolia, Pakistan, Sri Lanka, and Timor-Leste; and one ASEAN observer (Papua New Guinea).

## Saudi Arabia

### Foreign Minister's Visit

#### Why in News

Recently, the **Indian External Affairs Minister** met the **Foreign Minister of the Kingdom of Saudi Arabia**.

#### Key Points

- **About the Meeting:**
  - **Cooperation in Multilateral Forums:** Discussed **bilateral cooperation** in multilateral forums such as the **United Nations, G-20** and **Gulf Cooperation Council (GCC)**.
    - India is **not a member of GCC**.
  - Implementation of the Strategic Partnership Council Agreement (signed in 2019):
    - **India-Saudi Strategic Partnership Council** was formed to coordinate on strategically important issues.



Note:

- The council will be headed by the Prime Minister and Crown Prince Mohammed and will meet every two years.
- India is the **fourth country** with which **Saudi Arabia has formed such a strategic partnership**, after the UK, France and China.
- Saudi Arabia has been a strategic partner of India since the signing of the **Riyadh Declaration** in 2010.
- **Focus on the Developments in Afghanistan and Other Regional Issues:** Saudi Arabia, along with Pakistan and the UAE, were the **key backers of the Taliban regime** that ruled Kabul from 1996 till 2001 when they were ousted by US-led international troops.
- **Strengthening Partnership:** Discussed further steps to strengthen their partnership in trade, investment, energy, defence, security, culture, consular issues, health care, and human resources.

#### ➤ India - Saudi Arabia Ties:

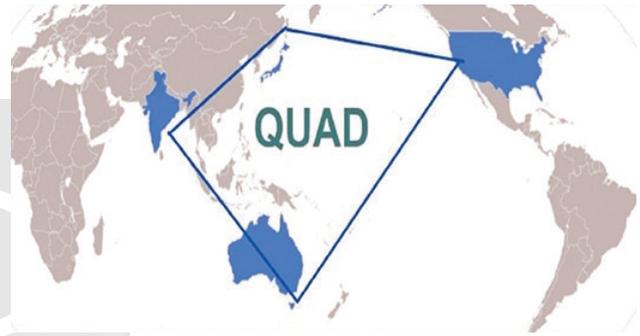
- **Crude oil Supplier:** Saudi Arabia is currently India's **second-largest supplier of crude oil (Iraq has been India's top supplier)**.
  - Saudi Arabia is keen to play a role in the creation of **Strategic Petroleum Reserves (SPRs)** at Padur in Karnataka.
  - A study is being conducted for the setting up of the **world's largest greenfield refinery** at Raigarh in Maharashtra by **Saudi Aramco**, Adnoc of the United Arab Emirates and Indian public sector oil companies.
- **Bilateral Trade:** Saudi Arabia is **India's fourth largest trade partner** (after China, USA and Japan). The bilateral trade was valued at US \$33.07 billion during FY 2019-20.
  - During the same period, India's imports from Saudi Arabia reached US \$26.84 billion and exports to Saudi Arabia were worth US\$ 6.24 billion registering an increase of 12.18% over last year.
- **Indian Diaspora:** The 2.6 million-strong Indian community in Saudi Arabia is the largest expatriate community in the Kingdom and is the 'most preferred community' due to their expertise, sense of discipline, law-abiding and peace-loving nature.
- **Cultural Linkages:** **Haj pilgrimage** is another important component of bilateral relations between India and Saudi Arabia.

- **Naval Exercise:** Recently, India and Saudi Arabia started their first-ever Naval joint exercise called the **Al-Mohed Al-Hindi Exercise**.

## First in-Person Meeting of Quad Countries

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## PM Speech at United Nations General Assembly

### *Why in News*

Recently, the Prime Minister of India (PM) addressed the 76<sup>th</sup> **United Nations General Assembly (UNGA)**.

- The UNGA’s theme for this year is “Building Resilience through hope to recover from **Covid-19**, rebuild **sustainably**, respond to the **needs of the planet**, respect the **rights of people**, and **revitalise the United Nations**”.
- The PM spoke about a range of topics from the Covid-19 pandemic, threat of terrorism, India’s actions to combat climate change and the need to protect the freedom of navigation in the oceans.

Note:

### United Nations General Assembly

- The General Assembly is the **main deliberative, policymaking and representative organ of the UN.**
- **All 193 Member States** of the UN are represented in the General Assembly, making it the only UN body with universal representation.
- Each year, in **September**, the full UN membership meets in the General Assembly Hall in **New York** for the **annual General Assembly session**, and general debate, which many heads of state attend and address.
- Decisions on important questions, such as those on **peace and security, admission of new members** and budgetary matters, require a **two-thirds majority** of the General Assembly.
  - Decisions on other questions are **by simple majority.**
- **The President** of the General Assembly is elected each year by assembly to serve a one-year term of office.
  - Recently, the **Maldives' Foreign Minister Abdulla Shahid** was elected the **President of the 76<sup>th</sup> session** of the UNGA for 2021-22
  - The UNGA has also **appointed Antonio Guterres as the ninth UN Secretary General (UNSG)** for a second term beginning 1<sup>st</sup> January, 2022 and ending on 31st December, 2026.

### Key Points

- **Threat of Terrorism:** The world is facing an increased threat of regressive thinking and extremism and many countries is using **"terrorism as a political tool"**.
  - He also emphasised to abide by **UNSC Resolution 2593.**
  - The resolution demands that Afghan territory must never again be used to threaten or attack any country or to shelter or train terrorists.
- **Importance of India:** Today **every sixth person in the world is an Indian.** Thus, when Indians progress, it accelerates the development of the world.
  - He regarded India as **'Mother of Democracy'** and through democracy many socio-economic problems can be resolved.
- **Developmental Model of India:** Citing the **Deen Dayal Upadhaya's Integral Humanism**, India's developmental

model envisages an all-inclusive, all-pervasive, and universal approach. For example:

- **Unified Payment Interface (UPI), Jan Dhan Accounts** have deepened the financial inclusion.
- **PM Jan Aarogya Yojana** has provided the facility of free treatment in hospitals to over 500 million people and has given them access to quality health services.
- Under **PM Awas Yojana**, nearly 30 million proper homes are being built for many homeless families.
- **Jal Jeevan Mission** envisages to ensure that piped clean water reaches over 170 million homes.
- **Tackling Covid-19:** India has developed the **world's first DNA vaccine.** This can be administered to anyone above the age of 12.
  - An **mRNA vaccine** is in the final stages of development.
  - Indian scientists are also developing a nasal vaccine against Covid-19.
- **Balancing Economy and Ecology:** India is progressing towards the goal of **450 gigawatts of renewable energy.**
  - Also, India is set to be the **world's biggest green hydrogen hub.**
- **Ensuring Freedom of Navigation:** Highlighting China's expansionism in the Indo-Pacific, PM held that oceans are the lifeline of international trade and must be protected from the race of expansion and exclusion.
  - In this context, the broad consensus reached in the Security Council during India's presidency shows to the world the **way forward for maritime security.**

## Congressional Report on Terrorism: US

### Why in News

Recently, the US Congressional report on **terrorism** stated that **Pakistan is home to at least 12 groups designated as Foreign Terrorist Organisation (FTO).**

- The report named **Terrorist and Other Militant Groups in Pakistan**, released by the bipartisan research wing of US Congress in the **Quad summit 2021.**
- Earlier, in February 2021, the **Financial Action Task Force (FATF)** had decided to retain **Pakistan on the greylist.**

Note:

### Prominent India-Centric Terror Organizations in Pakistan

Name	Formation	FTO Designation	About	Status in India as per the Unlawful Activities (Prevention) Act, 1967
Lashkar-e-Taiba (LET)	Late 1980s	2001	It was responsible for major 2008 attacks in Mumbai, as well as numerous other high-profile attacks.	Banned
Jaish-e-Mohammed (JEM)	2000	2001	Along with LET, it was responsible for the 2001 attack on the Indian parliament, among other attacks. JEM also has openly declared war on the United States.	Banned
Harakat-ul Jihad Islami (HUJI)	1980	2010	Initially it was formed to fight the soviet army, however after 1989, it redirected its efforts toward India, although it did supply fighters to the Afghan Taliban.  HUJI today operates in Afghanistan, Pakistan, Bangladesh and India, and seeks annexation of Kashmir into Pakistan	Banned
Harkat-ul-Mujahideen (HUM)	1985	1997	It operates mainly from Pak-Occupied Kashmir and from some Pakistani cities.	Banned
Hizb-ul-Mujahideen	1989	2017	It is the militant wing of Pakistan's largest Islamist political party and is one of the largest and oldest militant groups operating in Jammu and Kashmir.	Banned
Al Qaeda	1988	1999	It has operated primarily from the former Federally Administered Tribal Areas and in the megacity of Karachi, as well as in Afghanistan.	Banned

#### Foreign Terrorist Organisation

**FTO** are foreign organizations that are **designated by the Secretary of State US**. This plays a critical role in fight against terrorism and is an effective means of curtailing support for terrorist activities and pressuring groups to get out of the terrorism business.

#### Key Points

##### ➤ Pakistan Safe Haven for Terror:

- Pakistan has **continued to serve as a safe haven for certain regionally focused terrorist groups**, and has allowed groups **targeting Afghanistan as well as groups targeting India** to operate from its territory.
- Pakistan's neighbours, including Afghanistan and

India, and the US have long accused Islamabad of providing safe haven and support to militants.

##### ➤ Categorization of Terrorist Groups:

- The groups operating in Pakistan can be broadly categorised into **five types**:
  - Globally-oriented
  - Afghanistan oriented
  - India- and Kashmir-oriented
  - Domestically oriented
  - Sectarian (anti-Shia).

##### ➤ Steps Taken:

- Modest steps were taken by Pakistan's government to counter **terrorism financing** and to restrain some India-focused militant groups following an early 2019 terrorist attack in Jammu and Kashmir.

Note:

- However, it has **yet to take decisive actions against India and Afghanistan-focused militants**, and that progress on the most difficult aspects of its 2015 National Action Plan to counter

terrorism remains unfulfilled specifically its pledge to dismantle all terrorist organisations without delay and discrimination.



Note:

# Science and Technology

## Highlights

- Genes to Increase Grain Size of Sorghum
- Landsat 9
- Rules for Ammonium Nitrate
- Herbicide-Tolerant Rice Varieties
- Dark Energy
- Solar DC Cooking System
- Role of Rice in Boosting Nourishment
- Mu Variant of Covid-19

## Genes to Increase Grain Size of Sorghum

### Why in News

Recently, as per a report from the University of Queensland (UQ), Australia, **genes that can increase the grain size of sorghum** have been discovered.

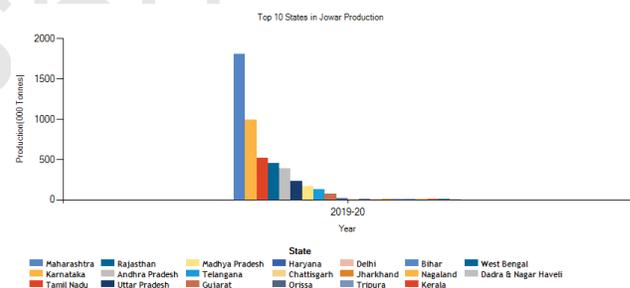
### Key Points

- **About:**
  - As many as **125 regions in the sorghum genome have now been identified** where **variation in the DNA sequence was associated with grain size** and response to environmental conditions.
  - **New variants** have also been identified that are **capable of doubling grain weight**.
- **Significance:**
  - Bigger grain size can **improve the usage value of the crop**. Larger grains make it **more digestible** for both people and animals and improves processing efficiency.
- **Sorghum:**
  - It is a **versatile grain crop used for human consumption, fodder and bioenergy** generation.
  - The grain is popular across the world because it has a **low glycaemic index, is gluten-free and nutritious**.
    - The lower the glycemic index of a cereal, the **lower is the relative rise in blood glucose level** after two hours of consuming it.
  - The **variety of the crop found in India is called jowar**. It is said to have its **origin in the country**

and is one of its most important food and fodder crops.

- Jowar has a dedicated **All-India Coordinated Research Project since 1969**.
- Sorghum plants are **very hardy and can withstand high temperature and drought conditions**.
- It is well adapted to **semiarid regions with a minimum annual precipitation of 350-400 mm**. It is grown in areas that are **too hot and dry for growing maize**. In India, the main sorghum belt receives an annual rainfall ranging from **400-1000 mm**.
- It can grow on a wide range of soils. Medium to deep **black soils** are predominantly suitable for growing sorghum.

### States Producing Jowar in India:



## Landsat 9

### Why in News

Recently, NASA has launched an **earth monitoring satellite called Landsat 9** from Vandenberg Space Force Base in California. The satellite is a **joint mission of NASA and the US Geological Survey (USGS)**.

- This satellite is referred to as **NASA's 'new eye in the sky'** that will help study climate change.

Note:



drishti

## Key Points

- **Background:**
  - Landsat-9 is the **continuation of a series of Earth-observing spacecraft stretching back almost 50 years.**
  - The **first Landsat satellite was launched in 1972** and since then, Landsat satellites have collected images of earth and helped understand how land usage has changed over the decades.
  - In **2008**, it was decided that **all Landsat images will be free and publicly available** and the policy has helped scores of researchers, farmers, policy analysts, glaciologists, and seismologists.
  - Landsat images have been used to study the **health of forests, coral reefs, monitor water quality and melting glaciers.**
- **About Landsat 9:**
  - The Landsat 9 **joins Landsat 8 that was launched in 2013** and the satellites together will collect images of Earth's surface.
    - It takes 8 days to capture the whole Earth.
  - Landsat 9 carries instruments similar to the other Landsat satellites, but it is the **most technologically advanced satellite of its generation.**
  - The instruments aboard Landsat 9 are the **Operational Land Imager 2 (OLI-2)** and the **Thermal Infrared Sensor 2 (TIRS-2).**
    - **OLI-2:** It captures sunlight reflected off Earth's surface and studies the visible, near-infrared, and short wave infrared portions of the spectrum.
    - **TIRS-2:** It has a four-element refractive telescope and photosensitive detectors that capture thermal radiation and help study the Earth's surface temperature.
  - Along with the **European Union's Sentinel-2 satellites**, the Landsat Satellite will provide better estimation of the extent of climate change.

### Sentinel Satellites

- It is a family of satellites developed by the **European Space Agency (ESA)** under the **Copernicus Programme.**
- The Copernicus Programme is the **Earth Observation Programme** managed by the ESA, **launched in 1998.**

- It was named after the scientist and observer **Nicolaus Copernicus.** Copernicus' theory of the heliocentric (sun-centric) universe made a pioneering contribution to modern science.
- Sentinel satellites is a **group of six satellites** dedicated for different purposes.
  - **Sentinel 1:** It provides all-weather, day and night radar images.
  - **Sentinel 2:** It delivers high-resolution optical images for land services.
  - **Sentinel 3:** It delivers data on land and ocean.
  - **Sentinel 4 and 5:** Monitor atmosphere from geostationary and polar orbits.
  - **Sentinel 6:** Provides information on oceanography and climate studies.

### Earth Observation Satellites of India

- Recently, India has launched **EOS-01 satellite.**
  - It is an earth observation satellite and is intended for applications in agriculture, forestry and disaster management support.
- Earth observation satellites are the satellites equipped with remote sensing technology. Earth observation is the gathering of information about Earth's physical, chemical and biological systems.
  - Many earth observation satellites have been employed on **sun-synchronous orbit.**
- Other earth observation satellites launched by ISRO include **RESOURCESAT- 2, 2A, CARTOSAT-1, 2, 2A, 2B, RISAT-1 and 2, OCEANSAT-2, Megha-Tropiques, SARAL and SCATSAT-1, INSAT-3DR, 3D, etc.**

## Rules for Ammonium Nitrate

### Why in News

Recently, the Government has amended the **rules for Ammonium Nitrate** to curb its pilferage, **introduce fire-fighting provisions** as well as **improve ways to handle and store the chemical.**

- These rules have been amended from the lesson learnt from the **Beirut Explosion** in 2020. Nearly 3,000 tons of ammonium nitrate was stored at **Beirut's port for six years** that detonated in 2020, wreaking death and destruction.

### Key Points

Note:



➤ **About New Rules:**

- The rules require that ammonium nitrate received at ports be transferred to storage houses **500 metres beyond the port area**.
- The rules also permit the **auction of seized lots of ammonium nitrate** to ensure safe and speedy disposal besides requiring that Ammonium Nitrate be imported in bagged form only.
- The amendments include **provision for adequate fire-fighting facilities in storage and handling areas**, improvement of flooring in storage and handling areas.
- This will reduce the handling of loose chemicals at port and therefore enhance safety.

➤ **About Ammonium Nitrate:**

- **Ammonium Nitrate ( $\text{NH}_4\text{NO}_3$ )** is a nitrogen-rich white, crystalline chemical which is soluble in water.
- **Uses:**
  - It is a common chemical ingredient of **agricultural fertilisers**.
  - It is used as an ingredient for the production of **anaesthetic gases** and **cold packs**.
  - It is also the main ingredient in the manufacture of **commercial explosives** used in mining and construction.
- **As Explosive:**
  - It is the main component of the explosive composition known as **ANFO- Ammonium Nitrate Fuel Oil**.
  - Pure ammonium nitrate is not an explosive on its own. For Ammonium nitrate to be explosive, a **primary explosive or detonator** like RDX or TNT is required.
  - Many **Improvised Explosive Devices (IEDs)** used by terrorists around the world have ANFO as the main explosive.
  - **Stored ammonium nitrate is a fire hazard** and can explode in two ways.
    - It may come in contact with some explosive mixture.
    - Due to the oxidation process at large scale, heat may be generated starting a fire and then explosion. This seems to be the primary likely cause of the incident at Beirut port.
- **Regulations:**

- **Global:** It is classified as an **oxidising content** (Grade 5.1) under the **United Nations classification of dangerous goods**.
  - The United Nations Committee of Experts on the Transport of Dangerous Goods categorizes the types of dangerous goods, under nine classes like Explosive Materials, Inflammable liquids, Easily oxidising contents etc.
- **India:** In India, the manufacture, conversion, bagging, import, export, transport, possession for sale or use of ammonium nitrate is covered under The **Ammonium Nitrate Rules, 2012**.
  - The **Explosives Act, 1884**, define ammonium nitrate as the “compound with formula  $\text{NH}_4\text{NO}_3$  including any mixture or compound having more than 45% ammonium nitrate by weight including emulsions, suspensions, melts or gels but **excluding** emulsion or slurry explosives and non explosives emulsion matrix and fertilizers from which the ammonium nitrate cannot be separated”.
  - Storage of ammonium nitrate in large quantities in populated areas is illegal in India.
  - For the manufacture of ammonium nitrate, an Industrial licence is required under the **Industrial Development and Regulation Act, 1951**.
  - A **license** under the Ammonium Nitrate Rules, 2012 is also required for any activity related to ammonium nitrate.

## Herbicide-Tolerant Rice Varieties

### *Why in News*

Recently, the **Indian Agricultural Research Institute (IARI)** has developed the **country's first-ever non-GM (genetically modified) herbicide-tolerant rice varieties (Pusa Basmati 1979 and Pusa Basmati 1985)**.

- These varieties **can be directly seeded** and significantly save water and labour **compared to conventional transplanting**.
- **ICAR-IARI** is a deemed university.

### *Key Points*

Note:

### ➤ About the New Varieties of Rice:

- The new varieties contain a **mutated AcetoLactate Synthase (ALS) gene** making it possible for farmers to spray **Imazethapyr**, a broad-spectrum herbicide, to control weeds.
  - The **ALS gene** in rice codes for an enzyme (protein) that **synthesises amino acids for crop growth and development**.
  - The **herbicide sprayed on normal rice plants binds itself to the ALS enzymes, inhibiting their production of amino acids**.
- **Imazethapyr**, effective against a range of broadleaf, grassy and sedge weeds, **can't be used on normal paddy**, as the chemical **does not distinguish between the crop and the invasive plants**.
- However, the new basmati varieties contain a **mutated ALS gene** whose DNA sequence has been altered using **ethyl methanesulfonate, a chemical mutant**.
  - As a result, the ALS enzymes no longer have binding sites for Imazethapyr and amino acid synthesis isn't inhibited.
- The plants can now **"tolerate" application of the herbicide**, and hence it kills only the weeds.
- It is important to note that, as **there is no foreign gene involved in the process**, the herbicide-tolerance is through mutation breeding. **Thus, it is not a Genetically modified organism**.

### ➤ Advantages of These Varieties:

- **Direct Seeding of Rice Activity:** The new varieties simply replace water with Imazethapyr and there's no need for nursery, puddling, transplanting and flooding of fields.
  - Water is a natural herbicide that takes care of weeds in the paddy crop's early-growth period.
  - The new varieties will help in **Direct Seeding of Rice (DSR) which has several advantages over paddy transplantation**.
- **Cheaper Option:** DSR cultivation is currently based on two herbicides, Pendimethalin and Bispyribac-sodium.
  - However, Imazethapyr is cheaper than these two options.
- **Safer Option:** Imazethapyr, moreover, has a wider weed-control range and is safer, as the ALS gene isn't present in humans and mammals.

### **Paddy Transplantation vs Direct Seeding of Rice**

#### ➤ Paddy Transplantation:

- The field where the seedlings are transplanted has to be **"puddled" or tilled in standing water**.
- For the first three weeks or so after transplanting, the plants are irrigated almost daily to maintain a water depth of 4-5 cm.
- Farmers continue giving water every two-three days even for the next four-five weeks when the crop is in **tillering (stem development) stage**.
- Paddy transplantation is **both labour- and water-intensive**.

#### ➤ Direct Seeding of Rice (DSR):

- In DSR, the **pre-germinated seeds are directly drilled** into the field by a tractor-powered machine.
- There is no nursery preparation or transplantation involved in this method.
- Farmers have to only level their land and give one pre-sowing irrigation.

#### ➤ Advantages with Direct Seeding of Rice:

- Water savings.
- Less numbers of labourers required.
- Saves labour cost.
- Reduce methane emissions due to a shorter flooding period and decreased soil disturbance compared to transplanting rice seedlings.

#### ➤ Drawbacks of Direct Seeding of Rice:

- The seed requirement for DSR is also high, 8-10 kg/acre, compared to 4-5 kg/acre in transplanting.
- Further, laser land levelling is compulsory in DSR. This is not so in transplanting.
- The sowing needs to be done timely so that the plants have come out properly before the monsoon rains arrive.

## Dark Energy

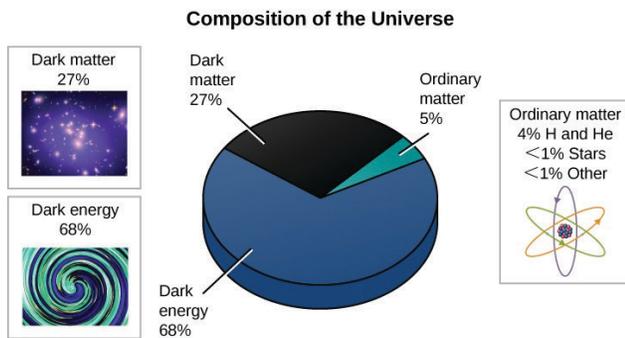
### **Why in News**

Recently, an international team of researchers made the **first direct detection of dark energy**. The experiment named **XENON1T**, is the **world's most sensitive dark matter experiment** and was operated deep underground at the **INFN Laboratori Nazionali del Gran Sasso in Italy**.

Note:



- Dark energy is the mysterious form of energy that makes up about **68% of the universe**, and has intrigued physicists and astronomers for decades.



### Key Points

#### ➤ About the Experiment:

- The XENON1T is a dark matter research project, operated at the **Italian Gran Sasso National Laboratory**.
- It is a deep underground research facility featuring increasingly ambitious experiments aiming to detect dark matter particles.
- The experiments aim to detect particles in the form of **Weakly Interacting Massive Particles (WIMPs)** by looking for rare interactions via nuclear recoils in a **liquid xenon target chamber**.

#### ➤ Other Dark Matter and Energy Experiments:

- **LUX-Zeplin** – a next generation dark matter experiment located at the Sanford Underground Research Facility, US.
- **PandaX-xT** – project at China Jinping Underground Laboratory.

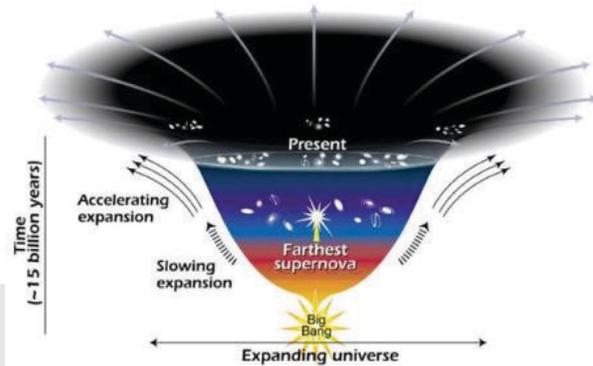
#### ➤ Dark Matter And Dark Energy:

- While **dark matter attracts and holds galaxies together, dark energy repels and causes the expansion of our universe**.
- Despite both components being invisible, a lot more is known about dark matter, since its existence was suggested as early as the 1920s, while dark energy wasn't discovered until 1998.

#### ➤ About Dark Energy:

- The **Big Bang** occurred nearly **15 billion years ago** and expanded. Earlier, astronomers believed that eventually the expansion of the Universe will slow down because of gravity and it will recollapse.

- However, data from the **Hubble Telescope** suggested that the **Universe's expansion is accelerating**.
- The astronomers theorize that the **faster expansion rate is due to a mysterious, dark force or energy** that is pulling galaxies apart.
  - The term '**dark**' is used to denote the unknown.
- The following diagram reveals changes in the rate of expansion since the universe's birth 15 billion years ago.



#### ➤ Possible Explanations of Dark Energy:

- **Property of Space:** Albert Einstein was the first person to realize that empty space is not nothing.
  - One version of **Einstein's gravity theory**, the version that contains a **cosmological constant**, implies that "empty space" can possess its own energy.
  - Because this energy is a property of space itself, it would not be diluted as space expands. As more space comes into existence, more of this energy-of-space would appear. As a result, this form of energy would cause the universe to expand faster and faster.
- **Quantum Theory of Matter:** Another explanation for how space acquires energy comes from the **quantum theory of matter**.
  - In this theory, "empty space" is **actually full of temporary ("virtual") particles that continually form and then disappear**.
- **Fifth Fundamental Force:** There are four fundamental forces in the universe, and speculative theories have proposed a **fifth force** – something that can't be explained by the four forces.
  - To hide or screen this fifth force, many models for dark energy use special mechanisms.
  - Some theorists have named this "**quintessence**," after the fifth element of the Greek philosophers.

Note:



- **Most unsaturated fatty acids (fats)** are of plant and fatty fish origin. Meat products contain both saturated and unsaturated fats.
- Within the family of **PolyUnsaturated Fatty Acids (PUFAs)**, there are two different groups: the 'omega-3-fatty acids' and 'omega-6-fatty acids'.
  - Both are considered essential fatty acids because they cannot be synthesized by humans.
- **Trans fatty acids**, more commonly called trans fats, are made by heating liquid vegetable oils in the presence of hydrogen gas and a catalyst, a process called hydrogenation. These are the **worst types of fat** for the heart, blood vessels, and rest of the body.
- **Findings of the Study:**
  - **Helpful for Health:**
    - The **traditional rice varieties** can **add essential FAs in the staple diet** helping in the **normal brain development in infants**.
    - **Many folk varieties** like **Athikaraya, Dudh-sar, Kayame, Neelam samba, Srihati, Maharaji and Bhejri** are known in folk medicine to enhance milk production in lactating women.
    - Varieties like **Kelas, DudheBolta and Bhutmoori** are rich in iron and can be included in the diet of mothers to treat **anaemia**.
  - **Address the Problem of Undernutrition:**
    - The traditional varieties help **address the problem of undernutrition in under five children**.
    - India was placed at the **94<sup>th</sup> spot among 107 countries by the Global Hunger Index 2020**. It is calculated on the basis of **total undernourishment of the population, child stunting, wasting and child mortality**.
  - **Contributes to the Economy:**
    - Recently, the first export consignment of **Bao-dhaan (red rice) from Assam was sent to the US** in March 2021. This enhances incomes of farming families.
      - This **iron-rich** red rice is grown in the Brahmaputra valley of Assam, without the use of any chemical fertilizer.
  - **Resistance against Disease:**
    - **Seven rice varieties of North East India** — Meghalaya lakang, Chingphourel, Manuikhamei,

Kemenyakepeyu, Wainem, Thekrulha, and Koyajang — have the **potential to resist leaf and neck blast disease** in rice plants.

- **Blast disease** caused by **fungal pathogen Pyricularia oryzae** is a major threat to rice productivity worldwide.
- **Conservation is Cheaper:**
  - **In situ conservation** of these **neglected and vanishing varieties of rice**, rich in nutrients, is a cheaper option **than High-Yielding Varieties (HYVs)**.
    - **HYV seeds** were developed by scientists to improve food supplies and reduce famine in developing countries.
    - **In situ and ex situ** conservation focuses on the maintenance of species diversity within or away from their natural habitats, respectively.

#### Rice

- It is a **kharif crop** which requires **high temperature, (above 25°C)** and high humidity with annual rainfall **above 100 cm**.
- Rice is **grown in** the plains of north and north-eastern India, coastal areas and the deltaic regions.
- **West Bengal tops the list** of rice-producing states followed by Uttar Pradesh and Punjab.

## Mu Variant of Covid-19

### Why in News

Recently, the **World Health Organisation (WHO)** has added a **new variant of Covid-19** in the list of **Variants of Interest (VOI)** and named it **Mu (B.1.621)**. It has also added **C.1.2** as a new **VOI**.

- According to **INSACOG (Indian SARS-CoV-2 Genomics Consortium)**, India has so far not seen Mu and C.1.2, and the **Delta variant** and its sub-lineages continue to be the main **Variants of Concern (VOC)**.
- **C.1.2 is a sub-lineage of the C.1 variant described in South Africa** but did not spread globally.

### Key Points

- **About:**
  - **Mu belongs to the lineage B.1.621 variant** and named after the twelfth letter of the Greek alphabet. It was **first detected in Colombia in January 2021**.

Note:

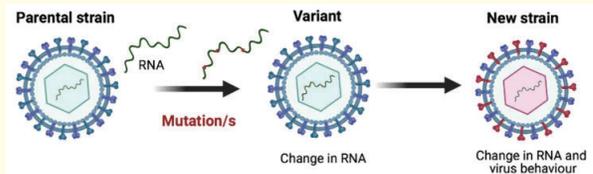


- It has a constellation of mutations that **indicate potential properties of immune escape**. It has several substitutions affecting the **Spike Protein** and amino acid changes.
- It has **seen mutations**, E484K, N501Y, P681H, D614G, which have been reported in other VOIs and VOCs.
- It is the **fifth 'VOI'** to be monitored by WHO. The **other four VOIs** are:
  - Eta (lineage B.1.525), Iota (lineage B.1.526), Kappa (lineage B.1.617.1), and Lambda (lineage C.37).
- **Variants of Interest:**
  - A variant is placed in the VOI list if it is seen to have **certain "genetic changes that are predicted or known to affect virus characteristics"** such as transmissibility, disease severity, immune escape, diagnostic or therapeutic escape".
  - To be added to the VOI list, a variant must also be **"identified to cause significant community transmission or multiple Covid-19 clusters in multiple countries"**, and suggest "an emerging risk to global public health".
- **Variants of Concern:**
  - A VOI can become a VOC if it is demonstrated to be **associated with an increase in transmissibility or virulence**, or with a **"decrease in effectiveness of public health and social measures** or available diagnostics, vaccines, and therapeutics".

- Currently, **four variants** of the coronavirus are designated as variants of concern:
  - **Alpha** (lineage B.1.1.7, the so-called 'UK variant'), **Beta** (lineage B.1.351, 'South Africa variant'), **Gamma** (lineage P.1, 'Brazil variant'), Delta (lineage B.1.617.2).

#### Mutation, Variant and Strain

- When a virus replicates it doesn't always manage to produce an exact copy of itself.
- This means that, over time, the virus may start to differ slightly in terms of its genetic sequence.
- Any **changes to the viral genetic sequence during this process** is known as a **Mutation**.
- Viruses with **new mutations are sometimes called Variants**. Variants can differ by one or multiple mutations.
- When a new variant has **different functional properties to the original virus** and becomes established in a population, it is **sometimes referred to as a New Strain** of the virus.
  - All strains are variants, but not all variants are strains.



Note:

# Environment and Ecology

## Highlights

- *Plant Discoveries 2020: BSI*
- *World Rhino Day*
- *New Species of Hybodont Shark*
- *Woolly Mammoths*
- *Global Methane Pledge*
- *Super-Hydrophobic Cotton Composite for Oil Spills*
- *Report on Climate Indicators & Sustainable Development: WMO*
- *New WHO Global Air Quality Guidelines*
- *Arsenic Contamination of Food Chain*
- *World Ozone Day*
- *Humboldt Penguin*
- *Alternative of Single-use Plastics*
- *United in Science 2021: WMO*
- *World's First 'Five-Country Biosphere Reserve'*
- *Climate-Induced Migration and Modern Slavery*
- *Blue Flag Certification*
- *Arctic Sea Ice Decline*
- *Capacity of India's Sewage Treatment Plants*
- *Blue Food*

## Plant Discoveries 2020: BSI

### Why in News

Recently, the **Botanical Survey of India (BSI)**, in its new publication **Plant Discoveries 2020** has added 267 new taxa/ species to the country's flora.

- Earlier, the **United Nations Convention on Biological Diversity (CBD)** demanded an additional USD 200 billion fund flow to developing countries from various sources to manage nature through 2030.

### Key Points

- **About:**
  - The **new Discovery to the flora of India** include **119 species of seed plants**, 57 species of fungi, 44 species of lichens, 21 species of algae, 18 species of microbes, five species of bryophytes and three species of fern and fern allies.
    - India has about **45,000 species of plants**, already identified and classified, which account for about **7% of the total plant species** of the world.
    - About 28% of the Indian plants are endemic to the country.
  - Few examples among the new discoveries are:
    - Nine new species of **balsams (Impatiens)** and one species of wild **banana (Musa pradhanii)** from **Darjeeling**.

### Botanical Survey of India

#### ➤ About:

- It is the **apex research organization** under the **Ministry of Environment and Forests (MoEFCC)** for carrying out taxonomic and floristic studies on wild plant resources of the country. It was **established in 1890**
- It has **nine regional circles** situated at different regions of the country. However the **headquarter is located in Kolkata, West Bengal**.

#### ➤ Functions:

- **Exploration, inventorying and documentation** of phytodiversity in general and protected areas, hotspots and fragile ecosystems in particular.
- **Publication** of National, State and District Floras.
- **Identification** of threatened and red list species and species rich areas needing conservation.
- **Ex-situ conservation** of critically threatened species in botanical gardens.
- Survey and documentation of **traditional knowledge (ethno-botany)** associated with plants.
- **Develop National database** of Indian plants, including herbarium and live specimens, botanical paintings and illustrations, etc.

- One species each of **wild jamun (Syzygium anamalaianum)** from **Coimbatore**.

Note:



- **Fern species** (Selaginella odishana) Kandhamal in Odisha.
- **Geographical Distribution of Species:**
  - 22% of the discoveries were made from the **Western Ghats** followed by **Western Himalayas** (15%), **Eastern Himalayas** (14%) and **Northeast Ranges** (12%).
  - The West coast contributed 10% while the East Coast contributed (9%) in total discoveries; Eastern Ghats and South Deccan contributed 4% of each while Central Highland and North Deccan added 3% each.
- **Significance of the Discovery:**
  - India is a signatory to the '**Convention on Biological Diversity**' (CBD) and is committed to work towards a **global strategy of plant conservation**.
    - Every year, **new plant discoveries are compiled and documented by BSI**, which plays a central role to fulfil **India's global commitment** of comprehensive documentation and identification of plant diversity of the country.
    - CBD, a legally binding treaty to conserve biodiversity, has been **in force since 1993**.

## World Rhino Day

### Why in News

World Rhino Day is observed on **22<sup>th</sup> September** to spread awareness for all five species of rhino and work being done to save them.

### Key Points

- It was **first announced by the World Wildlife Fund (WWF) - South Africa in 2010**. The species of rhinoceros are on the verge of extinction due to persistent **poaching and habitat loss** over several decades.



- There are **five species of rhino** – **white and black rhinos** in Africa, and the **greater one-horned, Javan and Sumatran rhino species** in Asia.
  - **IUCN Red List Status:**
    - **White Rhino:** Near Threatened.
    - **Black Rhino:** Critically endangered.
    - **Greater One Horned:** Vulnerable.
    - **Javan:** Critically Endangered
    - **Sumatran Rhino:** Critically Endangered
- **Theme 2021:** Keep the five Alive.
- **Objectives:** Strengthening protection, Expanding the distribution range, Research and monitoring, Adequate and sustained funding.

### Greater One-Horned Rhinoceros

- **About:**
  - Also known as the **Indian rhino**, it is the **largest of the rhino species**. It is identified by a single black horn and a grey-brown hide with skin folds. **India is home to the largest number of Greater One-Horned Rhinoceros** in the world.
  - They primarily graze, with a diet consisting almost entirely of grasses as well as leaves, branches of shrubs and trees, fruit, and aquatic plants.
  - At present, **there are about 2,600 Indian rhinos in India**, with more than **90% of the population concentrated in Assam's Kaziranga National Park**.
- **Habitat:**
  - The species is restricted to small habitats in **Indo-Nepal terai and northern West Bengal and Assam**.
  - In India, rhinos are mainly found in **Kaziranga NP, Pobitora WLS**, Orang NP, Manas NP in Assam, Jaldapara NP and Gorumara NP in West Bengal and **Dudhwa TR** in Uttar Pradesh.
- **Threats:**
  - Poaching for the horns
  - Habitat loss
  - Population density
  - Decreasing Genetic diversity
- **Protection Status:**
  - **IUCN Red List:** Vulnerable.
  - **CITES:** Appendix-I
  - **Wildlife Protection Act, 1972:** Schedule I.
- **Conservation Efforts by India:**

Note:



- **New Delhi Declaration on Asian Rhinos 201'**: India, Bhutan, Nepal, Indonesia and Malaysia have signed a declaration for the conservation and protection of the species.
- **DNA profiles of all rhinos**: The project will help in curbing poaching and gathering evidence in wildlife crimes involving rhinos.
- **National Rhino Conservation Strategy**: It was launched in 2019 to conserve the greater one-horned rhinoceros.
- **Indian Rhino Vision 2020**: It was an ambitious effort to attain a wild population of at least 3,000 greater one-horned rhinos spread over seven protected areas in the Indian state of Assam by the year 2020.

## New Species of Hybodont Shark

### Why in News

Recently, the **Geological Survey of India** (GSI) and the Indian Institute of Technology, Roorkee have discovered a **new extinct species of hybodont shark** from the Jaisalmer Basin of Rajasthan.

- **GSI** is a scientific agency under the Ministry of Mines, works as a repository of geo-science information required in various fields in the country.

### Key Points

- **Newly discovered species**:
  - The newly discovered **crushing teeth** from Jaisalmer represents a new species named by the research team as **Strophodusjaisalmerensis**.



- The genus *Strophodus* has been identified for the **first time from the Indian subcontinent** and is only the third such record from Asia, the other two being from Japan and Thailand.

- These sharks have been **reported for the first time from the Jurassic rocks** (approximately, between 160 and 168 million years old) of the Jaisalmer region of Rajasthan.
- **Hybodont Sharks**:
  - Hybodonts **dominated both marine and freshwater environments** during the Triassic and early Jurassic periods.
  - However, **hybodont sharks started to decline in marine environments from the Middle Jurassic onwards** until they formed a relatively minor component of open-marine shark assemblages.
  - They finally became **extinct at the end of the Cretaceous time** 65 million years ago.
- **Significance of the fossil**:
  - It marks an **important milestone in the study of Jurassic vertebrate fossils** in the Jaisalmer region of Rajasthan, and it **opens a new window for further research** in the domain of vertebrate fossils.

### Geological Time Scale:

EON	ERA	PERIOD	MILLIONS OF YEARS AGO	KEY EVENTS
Phanerozoic	Caenozoic	Quaternary	1.6	Humans evolve
		Tertiary		
	Mesozoic	Cretaceous	138	Extinction of Dinosaurs
		Jurassic		
		Triassic		
	Paleozoic	Permian	240	Permian mass extinction
		Carboniferous	330	
		Devonian	410	Invertebrates become common
		Silurian		
		Ordovician		
Cambrian	500			
Proterozoic	Also known as Precambrian	3500	Earliest life	
Archean				
Hadean				

## Woolly Mammoths

### Why in News

The United States' startup Colossal Biosciences has announced its **plan to bring woolly mammoths**, or animals like them, **back from extinction** and into the frosty landscape of the Siberian tundra (treeless polar desert).

### Key Points

Note:

## A MAMMOTH UNDERTAKING

● Harvard geneticists now seek to resurrect the long-gone **woolly mammoth** – the shaggy Ice Age herbivore, which lived on northern continents in climates of extreme cold, **went extinct about 4,000 years ago**, but genetics can return these

● Genetic tools enable scientists to **sequence the mammoth's genes found in fossils**, recreate and place these in the closely-related Asian elephant, for **the elephant** to then give birth to a woolly mammoth

● Reviving the woolly mammoth can help our ecological well-being – the **Siberian steppes** are composed of **permafrost** which contains vast amounts of **carbon**. With global warming, permafrost is melting, which could release more harmful carbon. But **permafrost temperature can be significantly lowered by reintroducing large animals like mammoths and bison**, which help the growth of steppe grasses that reflect sunlight back into the atmosphere, lowering heat absorption – and **reducing permafrost melt**



### ➤ About:

- Mammoth, (genus *Mammuthus*), **any member of an extinct group of elephants found as fossils in Pleistocene deposits over every continent except Australia and South America and in early Holocene deposits of North America.**
  - The **Pleistocene Epoch** began 2.6 million years ago and ended 11,700 years ago.
  - The **Holocene Epoch** began 11,700 years ago and continues through the present.
- **Woolly Mammoths:** The woolly, Northern, or Siberian mammoth (*Mammuthus primigenius*) is by far the best-known of all mammoths.
  - The relative abundance and, at times, excellent preservation of this species's carcasses found in the permanently frozen ground of Siberia has provided much information about mammoths' structure and habits.
- **Cause of Extinction:**
  - It is believed that mammoths disappeared because of a **change in climate**, disease, hunting by humans, or perhaps some combination of these.

### ➤ De-extinction of Woolly Mammoths:

- **Need:**

- **Restoration of Ecosystem:** When mammoths disappeared from the Arctic some 4,000 years ago, shrubs overtook what was previously grassland.

- Mammoth-like creatures **could help restore this ecosystem** by compressing shrubs, knocking over trees, and fertilising grasses with their faeces.

- **Reduce Climate Change:**

- If the current Siberian **permafrost** melts, it will release potent greenhouse gases.
- De-extinction will prevent the permafrost from melting. Compared to tundra, grassland might reflect more light and keep the ground cooler.

- **Technology Used:** The **CRISPR gene editing technology** will be used to modify **Asian elephant embryos**.

- Asian elephants are the mammoth's closest living relative so their genomes resemble those of woolly mammoths.

### ➤ Concerns Raised:

- **Disturb the Ecosystem:** Bringing back extinct species, whose ecological niches may no longer exist, will upset existing ecosystems.
- **Opportunity Cost:**
  - The de-extinction could **distract from more cost-effective efforts to protect biodiversity or mitigate climate change.**
  - The **possible moral hazards** that may arise if people start believing extinction is not forever.
  - Even if de-extinction programs are successful, they will likely **cost more than saving existing species** from extinction.
    - Once de-extinction becomes possible, the need to protect species from extinction will seem less urgent.
- **No Guarantee of Behaviour Adoption:** Even if newly engineered mammothants contain mammoth DNA, there is **no guarantee these hybrids will adopt the behaviours of ancient mammoths.**
  - For instance, we inherit more than just DNA sequences from our parents. We inherit **epigenetic changes**, wherein the environment around us can affect how those genes are regulated.

Note:



- We also inherit our parents' microbiome (colonies of gut bacteria), which plays an important role in our behaviours.
- The behaviours animals learn from observing other members of their species. The first mammals will have no such counterparts to learn from.

#### Tundra

- The tundra climate region **occurs between 60° and 75° of latitude, mostly along the Arctic coast** of North America and Eurasia and on the coastal margins of Greenland.
- Tundra winters are long, dark, and cold, with mean temperatures below 0°C for 6 to 10 months of the year. There is a layer of permanently frozen ground below the surface, called **permafrost**.
- Structurally, the Tundra is a **treeless expanse** that supports communities of sedges and heaths as well as dwarf shrubs.

## Global Methane Pledge

### Why in News

Recently, the US President has announced the **Global Methane Pledge**, which is an **US-EU led effort to cut methane emissions by a third by the end of this decade**.

- The announcement has come ahead of 26<sup>th</sup> **Conference of the Parties (COP26)** of **United Nations Framework Convention on Climate Change (UNFCCC)** in Glasgow, UK.
- This will also help in abiding by the targets of the **Paris climate deal**.

### Key Points

- **About:**
  - The pact between the US and the EU **sets a target of cutting at least 30% from global methane emissions**, based on 2020 levels, by 2030.
  - If adopted around the world, this **would reduce global heating by 0.2C** by the 2040s, compared with likely temperature rises by then.
    - The world is now about 1.2C hotter now than in pre-industrial times.
- **Methane Gas:**
  - **About:**

- Methane is the **simplest hydrocarbon, consisting of one carbon atom and four hydrogen atoms** (CH<sub>4</sub>).
  - It is flammable, and is used as a fuel worldwide.
- Methane is a powerful **greenhouse gas**.
- Approximately 40% of **methane emitted is from natural sources** and about 60% **comes from human-influenced sources**, including livestock farming, rice agriculture, biomass burning and so forth.

#### Impact:

- **More Global Warming Potential:** It is nearly 80-85 times more potent than carbon dioxide in terms of its global warming capacity.
  - This makes it a critical target for reducing global warming more quickly while simultaneously working to reduce other greenhouse gases.
- **Promotes Generation of Tropospheric Ozone:** Increasing emissions are driving a rise in **tropospheric ozone** air pollution, which causes more than one million premature deaths annually.

#### Related Indian Initiatives:

- **'Harit Dhara' (HD):** Indian Council of Agricultural Research (ICAR) has developed an anti-methanogenic feed supplement '**Harit Dhara' (HD)**, which can cut down cattle methane emissions by 17-20% and can also result in higher milk production.
- **India Greenhouse Gas Program:** The India GHG Program led by WRI India (non-profit organization), Confederation of Indian Industry (CII) and **The Energy and Resources Institute (TERI)** is an industry-led voluntary framework to measure and manage greenhouse gas emissions.
  - The programme builds comprehensive measurement and management strategies to reduce emissions and drive more profitable, competitive and sustainable businesses and organisations in India.
- **National Action Plan on Climate Change (NAPCC):** **NAPCC** was launched in 2008 which aims at creating awareness among the representatives of the public, different agencies of the government, scientists, industry and the communities on the threat posed by climate change and the steps to counter it.
- **Bharat Stage-VI Norms:** India shifted from **Bharat Stage-IV (BS-IV) to Bharat Stage-VI (BS-VI)** emission norms.

Note:

**Global Methane Initiative (GMI)**

- It is an international public-private partnership focused on reducing barriers to the recovery and use of methane as a clean energy source.
- GMI provides technical support to deploy methane-to-energy projects around the world that enable Partner Countries to launch methane recovery and use projects.
- **India is a partner country.**

## Super-Hydrophobic Cotton Composite for Oil Spills

**Why in News**

Recently, the **Indian Institute of Technology (IIT), Guwahati**, has developed a **super-hydrophobic cotton composite** with **Metal-Organic Framework (MOF)** that can clean-up marine **oil-spill**.

- Earlier, a study confirmed that **Stimulating Bacteria (Bioremediation)** with nutrients in the cold seawaters of the Canadian Arctic can help decompose diesel and **Other Petroleum Oil after Oil Spills**.

**Key Points**

- **About:**
  - It is a **novel MOF composite, which is a highly porous and water-repellent material** and can absorb oil selectively from an oil-water mixture.
    - MOF are **crystalline porous solids** composed of a three-dimensional (3D) network of metal ions held in place by multidentate organic molecules **suitable for solid-phase extraction**.
  - This MOF composite has **great capability for selective separation of the oils from oil / water mixtures** and the separation efficiency lies between 95% and 98%, irrespective of the chemical composition and density of the oils.
  - It can also absorb **large volumes of oils and can be reused for a minimum of 10 times** so that the sorbents can provide more recovery of the spilled oil. Both heavy and light oils can be effectively absorbed by the material, which is easy to prepare, cost-effective and recyclable.
- **Significance:**
  - It will **clean-up the spilled oil from environmental**

**water** (river, sea or ocean water) during oil transportation with high efficiency and large absorption capacity, thus reducing environmental water pollution.

- It is **environmentally friendly and cost effective**. Such low-cost material will reduce the production cost of the material for large-scale synthesis for real applications, compared to currently available materials.
- **Other Remedies for Oil Spills:**

**Oil Spills**

- **About:**
  - It refers to **any uncontrolled release of crude oil, gasoline, fuels, or other oil by-products** into the environment. It can pollute land, air, or water, though it is mostly used for oceanic oil spills.
  - The severe water contamination threatens the health of humans as well as other living species.

Note:

- It has become a major environmental and economic problem, chiefly as a result of intensified petroleum exploration and production on continental shelves and the transport of large amounts of oils in vessels.
- Major oil spills are frequently followed by the immediate suspension of commercial fishing and also affect tourism and commerce through sea routes.
- Oil spills that happen in rivers, bays and the ocean most often are caused by accidents involving tankers, barges, pipelines, refineries, drilling rigs and storage facilities, but also occur from recreational boats and natural disasters.

#### ➤ Related Laws in India:

- Presently, there is no law covering oil spill as such and its consequential environmental damage in India but India has “the National Oil Spill Disaster Contingency Plan of 1996 (NOS-DCP)” to handle such situations.
  - It gives the Indian Coast Guard the mandate to coordinate with state departments, ministries, port authorities and environmental agencies to assist in oil spill cleaning operations.
- In 2015 India ratified the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (Bunker Convention). Convention ensures adequate, prompt and effective compensation for damage caused by oil spills.
  - It was administered by the International Maritime Organization (IMO).

## Report on Climate Indicators & Sustainable Development: WMO

### Why in News

Recently, the World Meteorological Organization (WMO) has published a new report on Climate Indicators and Sustainable Development: Demonstrating the Inter-connections.

- WMO studied seven climate indicators — carbon dioxide (CO<sub>2</sub>) concentration, temperature, ocean acidification and heat, sea ice extent, glacier melt and sea-level rise.
- Its release coincides with the United Nations General

Assembly annual session and the opening in September 2021 of the Sustainable Development Goals (SDGs) Action Zone, which is dedicated to accelerating action on the SDGs.



### Key Points

- Aim:
  - To contribute to the sustainable development agenda and to inspire leaders to take bolder climate action.
- Importance:
  - In the face of ongoing climate change, poverty, inequality and environmental degradation, understanding the connections between climate and international development is a matter of urgency.
  - Increasing temperatures will result in global and regional changes, leading to shifts in rainfall patterns and agricultural seasons. The intensification of El Niño events is also generating more droughts and floods.
- Rising CO<sub>2</sub> Concentration:
  - The rising concentration of CO<sub>2</sub> will impact all of the 17 United Nations-mandated SDGs.
  - Rising CO<sub>2</sub> concentration due to human activities is a key driver of global climate change.
- Impact on SDGs:
  - Rising CO<sub>2</sub> concentration and increasing global temperatures, if left unchecked, would negatively impact efforts to combat climate change under the SDG 13.
    - This, in turn, would pose a significant threat to the achievement of the 16 SDGs other than SDG 13, by 2030.
  - This would happen because uncontrolled rising CO<sub>2</sub> emissions would be indirectly responsible for risks related to the remaining six climate indicators,

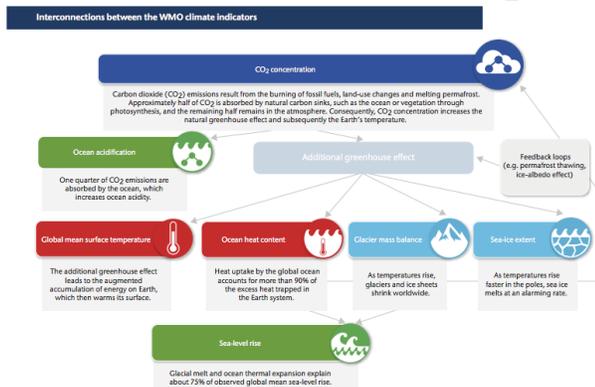
Note:



drishti

namely temperature, ocean acidification and heat, sea ice extent, glacier melt and sea-level rise.

- For instance, rising concentrations of CO<sub>2</sub> in the atmosphere will **lead to reductions in nutrient content, affecting food security** or the SDG indicator 2.1.2.
    - This would affect the **global goal on tackling poverty, SDG 1**, as well.
  - Rising CO<sub>2</sub> in water would cause **ocean acidification**, directly affecting SDG indicator 14.3.1 which addresses marine acidity.
  - Both food insecurity and loss of livelihood may drive conflicts related to resource management, thus **threatening regional peace and stability (SDG 16.1)**.
  - Extreme events attributed to rising temperature affect rainfall patterns and groundwater availability, which leads to a **higher risk of water scarcity, directly affecting SDG 6** on access to water and specially the targets.
- **Suggestions:**
- To mitigate climate risks, the WMO recommended to work on:
    - **Improved education (SDG 4)**
    - **Global partnerships (SDG 17)**
    - **Sustainable consumption (SDG 12)**



## New WHO Global Air Quality Guidelines

### Why in News

Recently, the **World Health Organisation (WHO)** has released **new Global Air Quality Guidelines (AQGs)**. Under

these guidelines, WHO has **further lowered the recommended levels of pollutants** that can be considered safe for human health.

- This is the **first-ever update of WHO since 2005**. The goal of the guideline is **for all countries to achieve recommended air quality levels**.

### Key Points

#### ➤ New Guidelines:

- The guidelines recommend **new air quality levels** to protect the health of populations, by **reducing levels of key air pollutants**, some of which also **contribute to climate change**.
- By striving to achieve these guideline levels, **countries will be both protecting health as well as mitigating global climate change**.
- WHO move sets the stage for eventual shifts in policy in the government towards **evolving newer stricter standards**.
- WHO's new guidelines recommend air quality levels for **6 pollutants**, where evidence has advanced the most on health effects from exposure.
  - 6 classical pollutants include **particulate matter (PM 2.5 and 10), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>) sulfur dioxide (SO<sub>2</sub>) and carbon monoxide (CO)**.

#### ➤ New WHO Global AQGs vs India's NAAQS:

### REVISED AFTER 16 YEARS

WHO | Then & Now

Pollutant*	Average	2005*	2021*
PM2.5	Annual mean	10	5
	24-hour mean	25	15
PM10	Annual mean	20	15
	24-hour mean	50	45
O <sub>3</sub>	Peak season	NS**	60
	8-hour mean	100	100
NO <sub>2</sub>	Annual mean	40	10
SO <sub>2</sub>	24-hour mean	NS**	25
	24-hour mean	20	40
CO	24-hour mean	NS**	4

**India's National Ambient Air Quality Standards (NAAQS)**

**Average**  
● Annual mean  
● 24-hour mean

PM2.5  
40 | 60

PM10  
60 | 100

NO<sub>2</sub>  
40 | 80

SO<sub>2</sub>  
50 | 80

**Average (8-hour mean)**  
O<sub>3</sub> | 100; CO | 2

\* micrograms per cubic meter (µg/m<sup>3</sup>); \*\*NS - Not Set; PM2.5 & PM10 - Particulate Matters; O<sub>3</sub> - Ozone; NO<sub>2</sub> - Nitrogen Dioxide; SO<sub>2</sub> - Sulfur Dioxide; CO - Carbon Monoxide

#### ➤ Effect of Air Pollution on Human Health:

- According to WHO, **Air pollution is one of the biggest environmental threats** to human health, alongside **climate change**.

Note:

- Every year, exposure to air pollution is estimated to cause **7 million premature deaths** and result in the **loss of millions more healthy years of life**.
- In **children**, this could include **reduced lung growth and function**, respiratory infections and aggravated asthma.
- In **adults**, **heart disease and stroke** are the most common causes of premature death attributable to outdoor air pollution, and evidence is also emerging of other effects such as **diabetes and neurodegenerative conditions**.
- This puts the burden of disease attributable to air pollution **on a par with other major global health risks such as unhealthy diet and tobacco smoking**.
- **Disparities in air pollution** exposure are increasing worldwide, particularly as low- and middle-income countries are experiencing growing levels of air pollution because of large-scale urbanization and economic development that has largely relied on the burning of fossil fuels.
- **Status of Pollution in India:**
  - India continues to remain **one of the most polluted areas in the world**, with pollutant levels several times higher than recommended levels.
    - For example, a **Greenpeace study** found the average concentration of **PM2.5 in New Delhi in 2020 to be nearly 17 times higher than the recommended levels**.
    - In **Mumbai**, pollution levels were **eight times higher**; in Kolkata, over nine times higher; and in Chennai, over five times higher.
  - According to experts of **Global Burden of Disease study**, **over 95% of India's population already lived in areas where pollution levels were higher than WHO's 2005 norms**.
  - India's own **national air quality standards are much more lenient**, even compared to WHO's 2005 norms.
    - For example, the recommended PM2.5 concentration over a 24-hour period is 60 micrograms per cubic metre, compared to 25 micrograms advised by WHO's 2005 guidelines.
    - But even these lower standards are hardly met.
- **Impact of New Guidelines on India:**
  - The new air quality guidelines mean that nearly **entire India would be considered a polluted zone for most of the year**.

- However, by WHO's own admission, more than **90% of the world's population lived in areas** which did not meet its 2005 pollution standards.
- The new WHO norms **should push India** to work harder to make its air cleaner and safer.
- Further, the **feasibility of implementing the new guidelines is questionable**, especially in challenging geo-climatic zones like south Asia, including India.
  - Experts point out that this region has **challenging meteorological and climatic conditions**, with the added challenge of haze columns, heat island effects and very high base pollution.
- However, as the WHO's guidelines are **not binding**, the move doesn't immediately impact India as the **National Ambient Air Quality Standards (NAAQS)** don't meet the WHO's existing standards.
  - The government has a dedicated **National Clean Air Programme** that aims for a 20% to 30% reduction in particulate matter concentrations by 2024 in 122 cities, keeping 2017 as the base year for the comparison of concentration.

## Arsenic Contamination of Food Chain

### Why in News

A recent study in Bihar has found that **Arsenic contamination** not only in groundwater but in **the food chain** as well.

- The research study was a part of the **Project Nature and Nurture in Arsenic Induced Toxicity of Bihar** jointly funded by the **British Council in the United Kingdom** and **Department of Science and Technology** in India.

### Key Points

- **Major Findings:**
  - **Food Chain Contamination:**
    - Arsenic has found its way into the food chain - mainly **rice, wheat and potato**.
      - **Arsenic contamination in groundwater has been a growing concern in several parts of the country.**
    - Arsenic is present in **the groundwater as it is used on a large scale for irrigation by farmers**. That is how it finds its way into the food chain as well.

Note:

## Affected areas



### ○ Food vs Water Contamination:

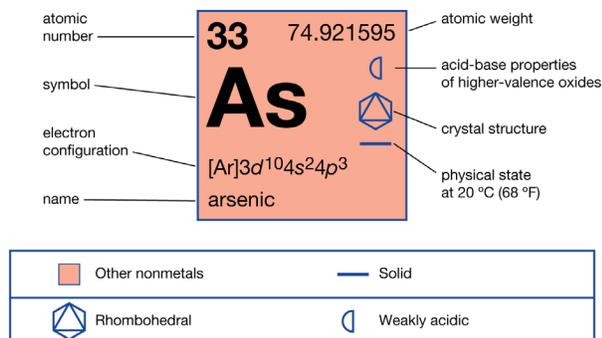
- The food had more arsenic content than drinking water, even when arsenic levels in drinking water was above the **World Health Organization (WHO)** provisional guide value of 10 micrograms per litre ( $\mu\text{g} / \text{L}$ ).
  - The **concentration was higher in cooked rice compared to raw rice.**

### ➤ Arsenic:

#### ○ About:

- It is an **odourless and tasteless metalloid** widely distributed in the earth's crust.
- It is naturally present at high levels in the earth crust and groundwater of a number of countries. **It is highly toxic in its inorganic form.**

#### Arsenic



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### ○ Arsenic Poisoning:

- It can **get into the human body through drinking water as well as eating food** that has been contaminated with arsenic.
  - **Arsenicosis** is the medical word for **arsenic poisoning**, which occurs due to accumulation of large amounts of arsenic in the body.
  - It leads to **adverse health effects through inhibition of essential enzymes**, which ultimately leads to death from multi-system organ failure.
  - Long-term exposure to arsenic from drinking-water and food can cause **cancer and skin lesions**. It has also been associated with **cardiovascular disease** and **diabetes**.
  - In utero and early childhood exposure has been linked to **negative impacts on cognitive development** and increased deaths in young adults.
- ### ○ Steps Taken:
- Under the **2030 Agenda for Sustainable Development**, the indicator of “safely managed drinking water services” calls for tracking the population accessing drinking water which is free of faecal contamination and priority chemical contaminants, including arsenic.
- **Jal Jeevan Mission** is envisioned to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India.
  - Recently, the **Jal Jeevan Mission (Urban)** has also been launched.

## World Ozone Day

### Why in News

Every year, **16<sup>th</sup> September** is observed as the **International Day for the Preservation of the Ozone layer** (World Ozone Day).

### Key Points

#### ➤ About:

- After the **Montreal Protocol** on Substances that deplete the ozone layer signed by almost every country in 1987, the **United Nation General Assembly**, in 1994, proclaimed this day as the **International Day for the Prevention of the Ozone Layer**.

Note:

- The Montreal Protocol has **led to the phase-out of 99% of ozone-depleting chemicals** in refrigerators, air-conditioners and many other products.
- The latest Scientific Assessment of Ozone Depletion completed in 2018, shows that parts of the ozone layer have **recovered at a rate of 1-3% per decade since 2000**.
- Ozone layer protection efforts have also **contributed to the fight against climate change** by averting an estimated 135 billion tonnes of carbon dioxide equivalent emissions, from 1990 to 2010.
- In September 2009, the **Vienna Convention** and the **Montreal Protocol** became the first treaties in the history of the United Nations to achieve universal ratification.
  - Establishment of a mechanism for cooperation to take action to protect the ozone layer was formalized in the **Vienna Convention in 1985**.
- In 2016 as a continuation of the global effort the Parties to the Montreal Protocol **reached agreement at their 28<sup>th</sup> Meeting of the Parties in Kigali, Rwanda** to phase-down **hydrofluorocarbons (HFCs)**.
- Recently, the **Indian Government approved the ratification of the Kigali Amendment** to the Montreal Protocol.

➤ **2021 Theme:**

- Montreal Protocol – **Keeping us, our food, and vaccines cool.**

### Ozone

➤ **About:**

- It is a **special form of oxygen with the chemical formula  $O_3$** . The oxygen we breathe and that is so vital to life on earth is  $O_2$ .
- Most ozone resides high up in the atmosphere, **between 10 and 40km above Earth's surface**. This region is called the **stratosphere** and it contains about 90% of all the ozone in the atmosphere.

➤ **Classification:**

- **Good Ozone:**
  - Ozone occurs naturally in the **Earth's upper atmosphere (Stratosphere)** where it **forms a protective layer** that shields us from the sun's harmful ultraviolet rays.

- This "good" ozone is gradually being destroyed by man-made chemicals referred to as **Ozone-Depleting Substances (ODS)**, including chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), halons, methyl bromide, carbon tetrachloride, and methyl chloroform.
- **Bad Ozone:**
  - In the **Earth's lower atmosphere (troposphere) near ground level**, ozone is formed when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources react chemically in the presence of sunlight.
    - Surface level ozone is a harmful **air pollutant**.



## Humboldt Penguin

### Why in News

Recently, Mumbai's Byculla Zoo announced the addition of **two new Humboldt penguin chicks**.

### Key Points

- **About:**
- Humboldt penguins (*Spheniscus Humboldtii*) are a **medium-sized species** with an average height of just over 2 ft.

Note:

- They have **large, bare skin patches around their eyes**, an adaptation to help keep them cool.
- Their breeding season in the wild is **either March-April or September-October** depending on the location of the colony.
- They are **one of the most popular zoo penguins** due to their ability to withstand warmer climates.



#### ➤ **Habitat:**

- Humboldt penguins are endemic to the **Pacific coasts of Chile and Peru**.
  - They are so named because their habitat is **located near the Humboldt Current**, a large oceanic upwelling characterised by cold waters.

#### ➤ **Threats:**

- Entanglement in fishing nets, loss of key breeding sites, harvesting of guano for use as fertiliser, and being hunted by introduced species such as cats and dogs.

#### ➤ **Protection Status:**

- **IUCN:** Vulnerable
- **CITES:** Appendix I

## Alternative of Single-use Plastics

### **Why in News**

Recently, the researchers at the **Indian Institute of Science, Bengaluru (IISc)** have found a way to make a **substitute for single-use plastic (SUP)** that can, in principle, help mitigate the problem of accumulating **plastic waste** in the environment.

### **Key Points**

#### ➤ **About the Research:**

- In the research, **Non-edible Castor oil** was used in this process of making the polymer which involves allowing them to react with the **cellulose** (from **agriculture stubble**) and **di-isocyanate compound**.

- These polymers can be moulded into sheets having properties suitable for making bags, cutlery or containers.
- The material so made is **biodegradable, leak-proof and non-toxic**.

#### ➤ **Possible Advantages:**

- **Addressing the Problem of Single use Plastics (SUP):** Given the surge in the usage of single use plastics and the challenge of managing the landfills choked with SUPs, such alternatives could bring **paradigm shift especially in the packaging sector**, the largest consumer of SUP.
- **Tackling Agricultural Stubble Problem:** Agricultural stubble burning is responsible for air pollution in several northern states in India.
  - In Delhi, for example, the **air quality index** dips to indicate “severe” or “hazardous” level of pollution every winter, and this is due in part to the burning of agricultural stubble in the surrounding regions.
  - Using agriculture stubble for replacement of single use plastics will not address the problem of air pollution, but will generate additional income opportunities for farmers also.
- **Use in Healthcare Facilities:** As the material is biodegradable and non-toxic, researchers are planning to use the material for healthcare applications also.

#### ➤ **Other Alternatives to Single-Use Plastics:**

- Long-lasting plastic alternatives that are available right now are, Stainless steel, glass, Platinum Silicone, Bamboo, pottery and ceramics, etc.
- Other than these, **bioplastics** can be used to replace traditional plastics.
  - **Bioplastics** are a type of plastic that can be made from natural resources such as vegetable oils and starches.

#### ➤ **Need to Address Plastic Pollution:**

- According to a report by the **Central Pollution Control Board of India**, for the year 2018-2019, 3.3 million metric tonnes of plastic waste were generated by Indians.
  - Moreover, several reports suggest that it is an underestimation.
- Another alarming statistic is that of all the plastic waste produced in the world, 79% enters the environment.

Note:



- Only 9% of all plastic waste is recycled.
- Accumulation of plastic waste is detrimental to the environment and when this waste finds its way into the sea, there can be major harm to aquatic ecosystems, too.
- SUP is so cheap and convenient that it has replaced all other materials from the packaging industry but it takes hundreds of years to disintegrate.

#### Initiatives to Curb Plastic Waste

- **Rules for Banning Single-Use Plastics from 1<sup>st</sup> July 2022**
- **Swachh Bharat Mission**
- **India Plastics Pact**
- **Project REPLAN**
- **Un-Plastic Collective**
- **GoLitter Partnerships Project**

## United in Science 2021: WMO

### Why in News

Recently, the **World Meteorological Organization (WMO)** released a report named **United in Science 2021**.

- It is a **multi-organization high-level compilation** of the latest climate science information.
- The report is coordinated by the WMO, with inputs from the **United Nations Environment Programme, World Health Organization, Intergovernmental Panel on Climate Change, Global Carbon Project, World Climate Research Programme** and the Met Office (UK).



### Key points

#### ➤ Climate Change:

- The pace of **climate change** has not been slowed by the global **Covid-19 pandemic** and the world remains behind in its battle to cut carbon emissions.
  - It has caused only a **temporary downturn in carbon dioxide (CO<sub>2</sub>)** emissions in 2020.
  - **High latitude regions** and the **Sahel** are likely to be **wetter** over 2021–2025, than the recent past.
- Reduction targets are not being met and there is a **rising likelihood the world will miss its Paris Agreement target** of reducing global warming to 1.5 degrees Celsius above pre-industrial levels.
  - There is an increasing likelihood that **temperatures would temporarily breach the threshold of 1.5 degrees Celsius** above the pre-industrial era, in the next five years.

#### ➤ Temperature:

- Average global **temperature for the past five years** was among the **highest on record**.
- Rising global temperatures are **fuelling devastating extreme weather throughout the world**, with spiralling impacts on economies and societies.
  - Climate hazards such as heatwaves, wildfires and poor air quality combine to threaten human health worldwide, putting vulnerable populations at particular risk.

#### ➤ Greenhouse Gases:

- Concentrations of major **greenhouse gases** in the atmosphere continued to increase last year and during the first half of 2021.

#### ➤ Fossil Fuel Emissions:

- Fossil fuel emissions from coal, gas, cement, etc were back to 2019 levels or even **higher in 2021**.

#### ➤ Sea Level:

- Global mean sea levels rose **20 cm** from 1900 to 2018. Even if emissions are reduced to limit warming to well below 2°C, global mean sea level would likely rise by **0.3-0.6 m** by 2100, and could rise **0.3-3.1 m** by 2300.

#### ➤ Loss of Work Hours:

- An excess of **103 billion potential work hours** were lost globally in 2019, compared to 2000.
  - It was due to heat-related mortality and work impairment, caused by rising temperatures.

Note:

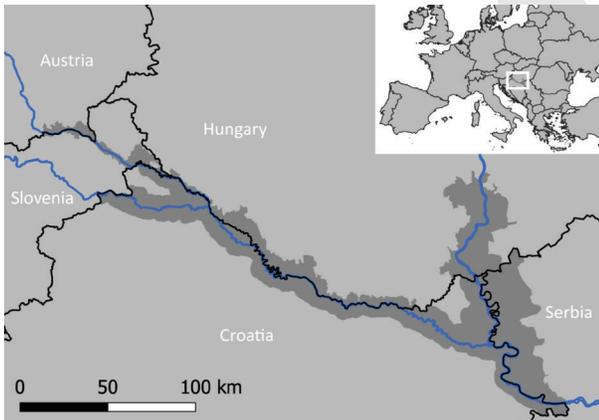
➤ **Suggestions:**

- More countries should develop **long-term strategies** that are **consistent with the 2015 Paris Agreement**.
- Net-zero commitments needed to be translated into **strong near-term policies and action**.
- **Adaptation strategies are needed** where they do not exist – especially in low-lying coasts, small islands, deltas and coastal cities.
- Covid-19 **recovery efforts should be aligned with national climate change and air quality strategies** to reduce risks from compounding and cascading climate hazards, and gain health co-benefits.

## World's First 'Five-Country Biosphere Reserve'

### Why in News

Recently, **Mura-Drava-Danube (MDD)** was declared as the **world's first 'five-country biosphere reserve'** by the **United Nations Educational, Scientific and Cultural Organization (UNESCO)**.



### Key Points

➤ **About MDD:**

- The biosphere reserve **covers 700 kilometres** of the **Mura, Drava and Danube rivers** and stretches across **Austria, Slovenia, Croatia, Hungary and Serbia**.
- The total area of the reserve is a **million hectares** - in the so-called '**Amazon of Europe**', which is now the **largest riverine protected area in Europe**.
- The biosphere "represented an **important contribution to the European Green Deal** (climate action

plan) and contributed to the **implementation of the EU Biodiversity Strategy** in the Mura-Drava-Danube region."

- The strategy's aim is to revitalise 25,000 km of rivers and protect 30% of the European Union's land area by 2030.

➤ **Importance of the MDD:**

- The area is **one of the richest in Europe** in terms of species diversity.
- It is **home to** floodplain forests, gravel and sand banks, river islands, oxbows and meadows.
- The area is home to the **highest density in Europe of breeding pairs** of white-tailed eagle and endangered species such as the little tern, black stork, otters, beavers and sturgeons.
- It is also an **important stepping stone** for more than 2,50,000 migratory waterfowls every year.

### Biosphere Reserve (BR)

➤ **About:**

- BR is an international designation by **(UNESCO)** for representative parts of natural and cultural landscapes extending over large areas of terrestrial or coastal/marine ecosystems or a combination of both.
  - BR tries to **balance economic and social development** and maintenance of associated cultural values along with the preservation of nature.
  - BRs are **nominated by national governments** and remain under the sovereign jurisdiction of the states where they are located.
  - These are **designated under the intergovernmental MAB Programme** by the Director-General of UNESCO following the decisions of the MAB International Coordinating Council (MAB ICC).
    - The Man and the Biosphere (MAB) Programme is an **intergovernmental scientific programme** that aims to establish a scientific basis for enhancing the relationship between people and their environments.
  - Their status is **internationally recognized**.
  - There are **727 biosphere reserves in 131 countries**, including 22 transboundary sites.
- **Three Main Zones:**
- **Core Areas:** It comprises a strictly protected zone that contributes to the conservation of landscapes, ecosystems, species and genetic variation.

Note:

- **Buffer Zones:** It surrounds or adjoins the core area(s), and is used for activities compatible with sound ecological practices that can reinforce scientific research, monitoring, training and education.
- **Transition Area:** The transition area is where communities foster socio-culturally and ecologically sustainable economic and human activities.
- **Biosphere Reserves in India:**
  - Presently, there are **18 Biosphere Reserves in India**, among which **12 Biosphere reserves in India** find their place in **UNESCO's List of Man & Biosphere Reserves Programme**.
    - The latest included under the MAB was '**Panna Biosphere Reserve**' (Madhya Pradesh).

## Climate-Induced Migration and Modern Slavery

### Why in News

Recently, **International Institute for Environment and Development (IIED)** and **Anti-Slavery International** released a report named **Climate-Induced Migration and Modern Slavery**.

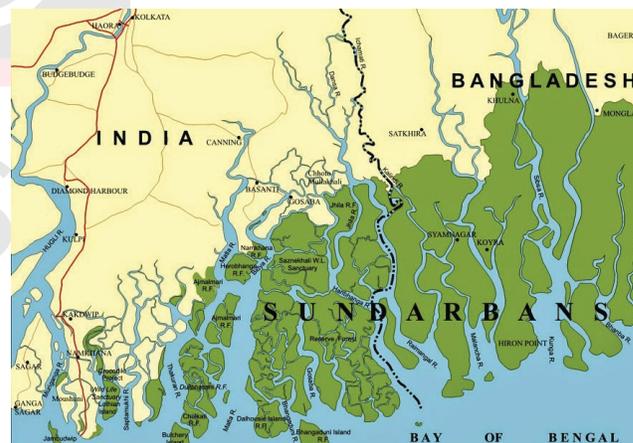
- **IIED** is a policy and action research organisation promoting sustainable development and linking local priorities to global challenges. It is **based in London, UK**.
- **Anti-Slavery International** is the world's oldest international human rights organisation, founded in 1839. It is the only British charity exclusively working to eliminate all forms of slavery.

### Key Points

- **Increasing Inequality:**
  - **Climate change** is devastating the planet, leading to **intensifying global inequality** as well as **disputes over land, water and scarce resources**.
- **Increased Migration:**
  - People are being **driven to migrate within and across borders** in search of resources and income.
    - As many as **55 million people were internally displaced** within their countries due to **extreme weather events in 2020**.
  - The **World Bank** estimates that, by 2050, the impact of the climate crisis, such as poor crop yields, a lack of water and rising sea levels, **will force more than**

**216 million people** across six regions, including sub-Saharan Africa, south Asia and Latin America, **from their homes (Groundswell Report)**.

- **Modern Slavery:**
  - Climate change-induced extreme weather events put **women, children and minorities at risk of modern slavery and human trafficking**. The phenomenon is on the rise in India, among other countries.
    - **40.3 million people are living under slavery** in the world.
  - Drivers of vulnerability to modern slavery are complex and impacted by many layers of risk. While several **socio-economic, political, cultural and institutional risks shape vulnerability**, they are **increasingly considered to be made worse by climate change** impacts and environmental degradation.
- **Plight of Sundarban:**
  - The **Sundarban** region is characterised by **intense, recurrent and sudden onset disasters**, therefore millions of people across the Sundarbans are unable to work for most of the year.



- Severe **cyclones** and flooding in Sundarbans delta had also **reduced the land for agriculture, which is the major source of livelihood**.
- While restrictions were imposed by bordering countries, **smugglers and traffickers operating in the affected region** targeted widows and men desperate to cross the border to India to find employment.
  - **Women were trafficked** and often forced into hard labour and prostitution, with some working in sweatshops along the border.

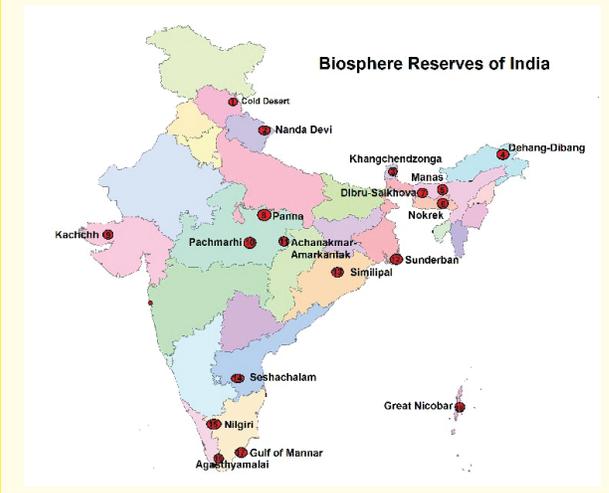
Note:

- **People** displaced and migrating from rural to urban areas **with no resources, skills or social networks** at their destination, are **targeted by agents and / or traffickers**.
- **Suggestions:**
  - **Recognise the Impact of Climate Change:**
    - Climate and development policy-makers **urgently need to recognise** that millions of people displaced by climate change are being, and will be, exposed to **slavery in the coming decades**.
  - **Develop Targeted Actions:**
    - Policymakers should therefore **develop targeted actions, at national and international levels**, to address the issue. The global and regional discourse on development and climate policy must consider trafficking and slavery risks due to climate shocks.
  - **Committed Funding:**
    - **G20** should **commit to providing long-term funding to address anti-slavery efforts** in the context of recurring displacement due to climate impacts.
  - **Coordination of Ongoing Initiatives:**
    - Several ongoing initiatives — including the **Warsaw International Mechanism Task Force on Displacement (WIM TFD)**, the **Sendai Framework**, etc — should be coordinated to increase understanding of, and response to, growing risks of climate-induced migration / displacement and exposure to modern slavery.
  - **Effort to Tackle Modern Slavery:**
    - The report is a warning to world leaders in advance of the **Conference of Parties (CoP 26) United Nations** climate summit in Glasgow in November 2021.
    - It calls on them to **make sure efforts to address the climate emergency also tackle modern slavery**.

#### Forms of Modern Slavery

- **Human Trafficking:** The use of violence, threats or coercion to transport, recruit or harbour people in order to exploit them for purposes such as forced prostitution, labour, criminality, marriage or organ removal.
- **Forced Labour:** Any work or services people are forced to do against their will under threat of punishment.

- **Debt Bondage/Bonded Labour:** The world's most widespread form of slavery. People trapped in poverty borrow money and are forced to work to pay off the debt, losing control over both their employment conditions and the debt.
- **Descent-Based Slavery:** Most traditional form, where people are treated as property, and their "slave" status was passed down the maternal line.
- **Slavery of Children:** When a child is exploited for someone else's gain. This can include child trafficking, child soldiers, child marriage and child domestic slavery.
- **Forced and Early Marriage:** When someone is married against their will and cannot leave. Most child marriages can be considered slavery.



## Blue Flag Certification

### Why in News

Recently, **Foundation for Environment Education (FEE), Denmark** has awarded the **Blue Flag Certification to Kovalam (Tamil Nadu) and Eden (Puducherry)**, taking the total number of such beaches in the country to **10**.

- A waving "Blue Flag" is an indication of 100% compliance to the 33 stringent criteria and sound health of the beach.

### Key Points

- **About:**
  - It is an **internationally recognised eco-label** that is accorded based on **33 criterias**. These criterias are **divided into 4 major heads** namely,

Note:

- Environmental education and information
  - Bathing water quality
  - Environmental management
  - Conservation and safety services in the beaches
- Blue Flag beaches are considered the cleanest beaches of the world. It is an **eco-tourism model endeavouring to provide the tourists/beachgoers** clean and hygienic bathing water, facilities, a safe and healthy environment and sustainable development of the area.
  - It is accorded by the international jury composed of eminent members - **United Nations Environment Programme** (UNEP), **United Nations World Tourism Organisation** (UNWTO), Denmark-based NGO Foundation for Environmental Education (FEE) and **International Union for Conservation of Nature** (IUCN).
  - On the lines of Blue Flag certification, **India has also launched its own eco-label BEAMS** (Beach Environment & Aesthetics Management Services).
- **Other Eight Beaches which have Received the Certification:**
- Shivrajpur in Gujarat,
  - Ghoghla in Daman & Diu,
  - Kasarkod in Karnataka and,
  - Padubidri beach in Karnataka,



- Kappad in Kerala,
- Rushikonda in Andhra Pradesh,
- Golden beach of Odisha,
- Radhanagar beach in Andaman and Nicobar.

#### BEAMS

- Beach Environment & Aesthetics Management Services comes under ICZM (**Integrated Coastal Zone Management**) project.
- This was **launched by** the Society of Integrated Coastal Management (SICOM) and the Union Ministry of Environment, Forest and Climate Change (MoEFCC).
- The **objectives of BEAMS program is to:**
  - Abate pollution in coastal waters,
  - Promote sustainable development of beach facilities,
  - Protect & conserve coastal ecosystems & natural resources,
  - Strive and maintain high standards of cleanliness,
  - Hygiene & safety for beachgoers in accordance with coastal environment & regulations.
- It has helped in saving 1,100 ml/year of municipal water through recycling; educating around 1,25,000 beachgoers about responsible behaviour at the beaches; providing alternate livelihood opportunities to 500 fishermen families through pollution abatement, safety and services and has also increased footfall for recreation activities at the beaches by approximately 80% leading to economic development.

## Arctic Sea Ice Decline

### Why in News

Recently, the **Arctic sea** ice reached its **minimum extent**, coming in at 4.72 million square miles. It is the **12<sup>th</sup> lowest** on record and the record minimum melting of the ice occurred in 2012.

- September marks the end of the summer sea ice melt season and the Arctic sea ice minimum, which means when sea ice over the **Northern Hemisphere ocean** reaches its lowest extent of the year.
- The '**Last Ice Area**' (LIA), located in the Arctic's Ice north of Greenland, has also started melting earlier than what the scientists had expected.

Note:



### Key Points

#### ➤ About:

- Sea ice cover has dropped by roughly half since the 1980s as a direct result of **increased carbon dioxide** from human activities.
- In recent years, Arctic sea ice levels have been at their lowest since at least 1850 for the annual mean and in at least 1,000 years for late summer, according to the **Intergovernmental Panel on Climate Change (IPCC)**.
  - It concluded that **the Arctic is likely to be practically sea ice free in September at least once before 2050.**
- At this stage of the melt season, the sea ice pack is at its weakest and is highly responsive to the weather conditions of a given day or week. **Subtle shifts can have big impacts.**

#### ➤ Factors Causing Rapid Melting of Ice:

- **Albedo Feedback Loop:**
  - Ice is more reflective (has a higher albedo) than land or water surfaces, this is one of several reasons for the Arctic's warming about **three times faster than the planet as a whole.**
    - Therefore, as global ice cover decreases, the reflectivity of Earth's surface decreases, more incoming solar radiation is absorbed by the surface, and the surface warms.

#### ○ Darker Ocean Surface:

- The Arctic's bright ice is replaced by a darker open ocean surface, less of the sun's radiation is reflected back to space, **driving additional heating and ice loss.**

#### ○ Counterclockwise Ice Circulation:

- **Cyclones** entering the Arctic from Siberia generated counterclockwise winds and ice drifts.
- This pattern generally reduces the amount of sea ice moving out of the Arctic through the **Fram Strait, east of Greenland.** This likely contributed to the record low summer sea ice conditions observed in the Greenland Sea.

#### ○ Low Pressure System:

- The low pressure system also **increases cloudiness over the Arctic.**
- Clouds generally block incoming solar radiation, **reducing sea ice melt, but they can also trap heat lost from the surface,** so their impact on sea ice melt can be a mixed bag.

#### ➤ Impact of Melting Arctic Ice:

##### ○ Global Climate Change:

- The **Arctic and Antarctic** act like the **world's refrigerator.** They balance out other parts of the world that absorb heat. The loss of ice and the warming waters will **affect sea levels, salinity levels, and current and precipitation patterns.**

##### ○ Danger to Coastal Communities:

- Global average sea level has **risen by about 7-8 inches since 1900,** and it's getting worse.
- Rising seas endanger coastal cities and small island nations by exacerbating **Coastal Flooding** and storm surge.

##### ○ Food Security:

- Polar vortexes, increased heat waves, and unpredictability of weather caused by ice loss are already causing significant damage to crops on which global **food systems** depend.

##### ○ Loss of Methane Store:

- **Permafrost** in the Arctic region (ground that is permanently frozen) stores large amounts of methane, which is a greenhouse gas that contributes to climate change.
- As more quickly the arctic ice is lost, more rapidly permafrost will melt. This will result in a **vicious cycle that may result in a climate catastrophe.**

Note:

- **Biodiversity Threat:**
  - Melting of the Arctic ice puts the Arctic region's vibrant **biodiversity under serious threat.**

## Capacity of India's Sewage Treatment Plants

### Why in News

According to the latest report of the **Central Pollution Control Board (CPCB)**, **Sewage Treatment Plants (STPs)** in India are **able to treat a little more than a third of the sewage generated per day.**

- CPCB is a statutory organisation which was constituted in September, 1974 under the **Water (Prevention and Control of Pollution) Act, 1974.**

### Key Points

- **Highlights of the Report:**
  - **Installed Capacity of STPs:**
    - India **generated 72,368 MLD (million litres per day)** whereas the **installed capacity of STPs was 31,841 MLD (43.9%).**
    - **5 states and Union Territories (UT)** - Maharashtra, Gujarat, Uttar Pradesh, Delhi and Karnataka - account for **60% of the total installed treatment capacity of the country.**
    - Arunachal Pradesh, Andaman & Nicobar Islands, Lakshadweep, Manipur, Meghalaya and Nagaland have **not installed sewage treatment plants.**
    - **Chandigarh ranks first** in terms of total sewage generated to what is actually treated.
  - **Reuse of Treated Sewage:**
    - It is **maximum in Haryana** followed by Puducherry, Delhi, Chandigarh.
      - It has **not assumed much importance in the policy planning** of many state governments.
    - Treated sewage water **can be reused for horticulture**, irrigation, washing activities (road, vehicles and trains), fire-fighting, industrial cooling, toilet flushing and gardening.
    - This **can decrease the water demand from aquatic sources** like rivers, ponds, lakes and as well as groundwater sources.
- **Concerns:**
  - **Increased Sewage Generation:**

- CPCB has estimated that sewage generation will **increase to over 1,20,000 MLD by 2051.**
- **Gaps in Treatment Capacity:**
  - The gaps in treatment capacity are **amplified at local levels**, as STPs are concentrated in larger cities and **Common Effluent Treatment Plants (CETPs)** are unevenly distributed across states.
- **Economic Case:**
  - **Modern Wastewater Treatment Plants (WTPs)** are **capital-intensive** and require the use of innovative technology, such as sensors, **Internet of Things (IoT)** devices and **Artificial Intelligence (AI)**-based trackers.
  - The **high upfront capital requirements** in machinery and equipment, combined with unpredictable revenue streams, make this a high-risk sector, deterring private sector investment.

### ➤ Related Government Initiatives:

- Recognising this challenge, the Indian government shifted its focus to **solid waste, sludge and greywater management** under the **Swachh Bharat Mission 2.0 (SBM 2.0)** which was announced recently.
- Following a sustained focus on achieving **Open Defecation-Free (ODF) status**, the **Ministry of Housing and Urban Affairs (MoHUA)** developed detailed criteria for cities to achieve **ODF+, ODF++ and Water+** statuses in May 2020.

## Blue Food

### Why in News

Recently, a report titled **Environmental performance of blue foods** has stated that the Aquatic or blue foods can be made more environmentally sustainable than they are now.

- The report is published as **part of the Blue Food Assessment (BFA).**
- The BFA is a **collaboration between** Sweden-based Stockholm Resilience Centre, United States-based Stanford University and the non-profit EAT.

### Key Points

- **About Blue Foods and its Advantages:**
  - Blue foods are food derived from **aquatic animals, plants or algae** that are caught or cultivated in **freshwater and marine environments.**

Note:

- They are found to **rank more highly than terrestrial animal-source foods** in terms of their **nutritional benefits and potential for sustainability gains**.
    - Many blue food species are **rich in important nutrients** like omega-3 fatty acids, vitamins and minerals.
  - On average, the major species produced in **aquaculture**, such as tilapia, salmon, catfish and carp, were found to have **lower environmental footprints** comparable to terrestrial meat.
- **About the Report:**
- The report has uncovered that Blue foods and the waters in which they grow will have **an essential role to play in the shift towards healthy, equitable and sustainable food systems**.
- The production of blue food **generates the fewest greenhouse gas and nutrient emissions** and **uses the least land and water**.
    - **Capture fisheries** refers to all kinds of harvesting of naturally occurring living resources in both marine and freshwater environments. These have the potential to reduce greenhouse gas emissions through improved management and optimising gear types.
  - **Investing in innovation and improving fisheries management** could increase consumption even more and have profound effects on **malnutrition**.
  - Promotion of Blue food will help in fulfillment of many **Sustainable development Goals** (SDG 2 - Nutrition and 14-Sustainable use of marine resources).



Note:

# History

## Highlights

- Gupta Period Temple Remains Found: UP

## Gupta Period Temple Remains Found: UP

### Why in News

Recently, the **Archaeological Survey of India (ASI)** discovered remains of an ancient temple dating back to the **Gupta period (5<sup>th</sup> century)** in **Bilsarh village** in Uttar Pradesh's **Etah district**.

- The Bilsarh site was **declared 'protected' in 1928 by the ASI**.

### Key Points

#### ➤ About:

- Two pillars were excavated on which there is an inscription about **Kumargupta I**, the powerful ruler of Gupta dynasty, in '**sankh lipi**' (conch script or shell script) typical of the 5<sup>th</sup> century AD.
    - The **Guptas were the first to build structural temples**, distinctly different from the ancient rock-cut temples.
  - The inscription was **deciphered as Mahendraditya** which was the **title of king Kumargupta I** who had even conducted **ashwamedh yajna** during his rule.
    - The **statue of a horse having similar inscription** is at the state museum in **Lucknow**.
    - **Ashvamedha Yajna** is a horse sacrifice ritual followed by the Sruta tradition of Vedic religion.
  - The discovery becomes significant since only two other structural temples from the Gupta age have been found so far — **Dashavatara Temple (Deogarh)** and **Bhitargaon Temple (Kanpur Dehat)**.
- #### ➤ Shankhalipi Script:
- Also called "**shell-script**" is found in inscriptions across north-central India and dates to between the **4<sup>th</sup> and 8<sup>th</sup> centuries**.



- Both **Shankhalipi and Brahmi** are stylised scripts used primarily for names and signatures.
  - The inscriptions consist of a **small number of characters**, suggesting that the shell inscriptions are **names or auspicious symbols** or a combination of the two.
- It was **discovered in 1836** on a brass trident in Uttarakhand's Barahat by English scholar **James Prinsep**.
  - **Prominent sites with shell inscriptions:** Mundeshwari Temple (Bihar), the **Udayagiri Caves** (Madhya Pradesh), Mansar (Maharashtra) and some of the cave sites of Gujarat and Maharashtra.
    - These inscriptions are also reported in **Indonesia's Java and Borneo**.

#### ➤ Kumargupta-I:

- He was the **Successor of Chandragupta-II** and had a long reign from **414 to 455 A.D.**
- He performed the Asvamedha Yajna which was confirmed by **Asvamedha coins**. The discovery of his **1395 coins** confirms his extension towards **the South**.
- His period is also regarded as **forming part of the Golden Age of the Guptas**.

Note:

- Towards the middle of the fifth century A.D. The reign of the Kumaragupta-I was **disturbed by the revolt of Pushyamitra tribe** and the invasion of the **Hunas**.
  - His greatest achievement was his **repulsing the attack of the Pushyamitra**.
- After the death of Kumaragupta-I **Skandagupta succeeded in 455 A.D.** and reigned from **455 to 467 A.D.**

### Gupta Empire

#### ➤ About:

- The Gupta Empire stretched across **northern, central and parts of southern India** between **320 and 550 CE**.
- The period is noted for its achievements in the **arts, architecture, sciences, religion, and philosophy**.
- **Chandragupta I (320 – 335 CE)** started a **rapid expansion** of the Gupta Empire and soon established himself as the **first sovereign ruler of the empire**.
- It marked the **end of 500 hundred years of domination of the provincial powers** and resulting disquiet that began with the **fall of the Mauryas**.
- It began a period of overall prosperity and growth that continued for the next two and half centuries which came to be **known as a Golden Age in India's history**.

#### ➤ Governance:

- The efficiency of their **martial system was well known**. The large kingdom was divided into smaller **pradesha** (provinces).

#### ➤ Trade:

- **Gold and silver coins** were issued in great numbers which is a general indicator of the health of the economy.
- Trade and commerce flourished both within the country and outside. **Silk, cotton, spices, medicine, priceless gemstones, pearl, precious metal and steel** were exported by sea.

#### ➤ Religion:

- They were devout **Vaishnava (Hindus who worship the Supreme Creator as Vishnu)** themselves, yet that did not prevent them from being **tolerant towards the believers of Buddhism and Jainism**.

#### ➤ Literature:

- Poet and playwright **Kalidasa** created such epics as *Abhijnanasakuntalam*, *Malavikagnimitram*, *Raghuvansha* and *Kumarsambhaba*. **Harishena** composed *Allahabad Prasasti*, **Sudraka** wrote *Mricchakatika*, **Vishakhadatta** created *Mudrarakshasa* and **Vishnusharma** penned *Panchatantra*.
- **Varahamihira** wrote *Brihatsamhita* and also contributed to the fields of astronomy and astrology. Genius mathematician and astronomer **Aryabhata** wrote *Surya Siddhanta* which covered several aspects of geometry, trigonometry and cosmology. **Shanku** devoted himself to creating texts about Geography.

#### ➤ Architecture:

- The finest examples of painting, sculpture and architecture of the period can be found in **Ajanta, Ellora, Sarnath, Mathura, Anuradhapura and Sigiriya**.



Note:



drishti

# Geography

## Highlights

- Rabi Crops
- Lake Tanganyika: East Africa
- La Palma Island: Spain
- New Varieties of Turmeric

## Rabi Crops

### Why in News

Recently, the Government of India has inaugurated the **National Conference on Agriculture for Rabi campaign 2021-22**.

### Key Points

Kharif Crops	Rabi Crops
Crops that are <b>sown during the southwest monsoon season</b> are called kharif or <b>monsoon crops</b> .	Those that are <b>sown around the Retreating Monsoon and Northeast monsoon season</b> , which begins by October are called rabi or <b>winter crops</b> .
These crops are sown at the beginning of the season around end May to early June and are <b>harvested post the monsoon rains beginning October</b> .	The harvest for these crops happens typically during April and May, <b>during the summer season</b> .
These crops <b>depend on the rainfall patterns</b> .	These crops are <b>not much affected by the rainfall</b> .
<b>Rice, maize, pulses such as urad, moong dal and millets</b> are among the key kharif crops.	Major Rabi crops are <b>wheat, gram, peas, barley</b> etc.
It <b>requires a lot of water and hot weather</b> to grow.	A <b>warm climate</b> is required for seed germination and <b>cold climate</b> for the growth of crops.
<b>Zaid Crops</b>	
➤ Sown and harvested: <b>March-July (between Rabi and Kharif)</b>	
➤ Important Zaid crops include: <b>Seasonal fruits, vegetables, fodder crops</b> etc	

## Lake

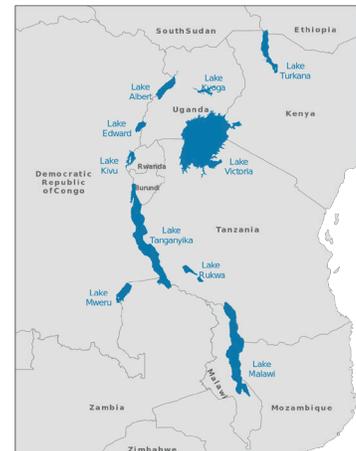
## Tanganyika: East Africa

### Why in News

As per a report by **Save the Children** (a humanitarian organisation), **migration in East Africa's Burundi** in recent years has been seen mainly **because of the rapid and significant rise of Lake Tanganyika**.

### Key Points

- It is the **second largest lake in eastern Africa**. It covers about 12,700 square miles,
- It is the **longest freshwater lake in the world** and the **second deepest after Lake Baikal in Russia**.
- The lake is **shared among four countries** namely Burundi, Democratic Republic of the Congo (DRC), Tanzania and Zambia
- It is situated on the line **dividing the floral regions of eastern and western Africa**, and oil palms, which are characteristic of the flora of western Africa, grow along the lake's shores.
- The **largest rivers discharging into the lake** are the Malagarasi, the Ruzizi, and the Kalambo. Its **outlet is the Lukuga River**, which flows into the Lualaba River.
- Rice and subsistence crops are grown along the shores, and fishing is of some significance. Hippopotamuses and crocodiles abound, and the bird life is varied.



Note:



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## La Palma Island: Spain

### Why in News

Recently, the Cumbre Vieja volcano in La Palma, one of Spain's Canary Islands, erupted.



### Key Points

- **About:**
  - The Cumbre Vieja volcano **erupted for the first time in 50 years**. The last time hot molten lava erupted and spread was in 1971.
  - **La Palma** is the **most north-westerly island of the Canary Islands, Spain**.
    - It's geography is a **result of a volcanic formation** and has an area of 708 square kilometres making it the **fifth largest of the eight main Canary Islands**.
    - Its highest mountain is the **Roque de los Muchachos, at 2,423 metres being second among the peaks** of the Canaries only to the peaks of the Teide massif on Tenerife.
  - The **Canary Islands are a group of ocean island volcanoes** located off the coast of western Africa that have been formed by volcanic activity since around 20 million years ago. It comprises the Spanish provinces of Las Palmas and Santa Cruz de Tenerife.
- **Other Recently Erupted Volcanoes:**
  - **Kilauea Volcano: Hawaii.**
  - **Fukutoku-Okanoba Volcano: Japan**

- **Sangay Volcano: Ecuador**
- **Taal Volcano: Philippines**
- **Mt. Sinabung, Merapi volcano, Semeru volcano (Indonesia)**

### ➤ Volcanoes in India:

- **Barren Island**, Andaman Islands (India's only active volcano)
- **Narcondam**, Andaman Islands
- **Baratang**, Andaman Islands
- **Deccan Traps**, Maharashtra
- **Dhinodhar Hills**, Gujarat
- **Dhosi Hill**, Haryana

## New Varieties of Turmeric

### Why in News

Recently, a high-yielding curcuminoid-rich variety of turmeric named **CIM-Pitamber** and the **NBRI's (National Botanical Research Institute) Keshari variety** have been introduced in Nabarangpur (One of the **Aspirational Districts**) of Odisha.

### Key Points

- **CIM-Pitamber:**
  - **About:**
    - It is a high-yielding **curcuminoid-rich variety** of turmeric developed by **Central Institute of Medicinal and Aromatic Plants (CIMAP)**.
      - **High yielding varieties (HYV)** of seeds are those seeds which **produce huge quantities of crops** particularly wheat and rice.
      - Regular supply of water, maximum use of fertilisers and use of pesticides in an accurate proportion is needed to use these seeds.
    - In this variety, **curcuminoid content is 12.5% more** than the existing variety.
      - **Curcuminoid** is a substance derived from turmeric which has anti-**cancer** properties, anti-inflammatory, anti-aging, anti-diabetic and has **several medicinal properties**.
  - **Benefits:**
    - It can yield **50% more than the existing varieties** of turmeric and help farmers. It is also **tolerant to the leaf blotch disease of turmeric**.

Note:



- Turmeric with **high content of curcuminoid** is preferred by European nations and North America. Export and sale value will be more if curcumin content is more.

➤ **Keshari variety:**

- It is **tolerant to low temperature** and frost during winter. It has a **longer growth period** as compared to other varieties, which directly **reflects higher fresh rhizome yield** of high quality.
- In comparison to other existing varieties, there is **less problem of yellowing and falling of leaves** in this variety during winter, which leads to extending the life period of this variety.
- The total curcuminoid **content is around 1.16 %, which is also more than other existing cultivated varieties** of north India.

➤ **Turmeric:**

- Turmeric is a **flowering plant**, *Curcuma longa* of the **ginger family**, it is used as **condiment, dye, drug and cosmetic** in addition to its use in religious ceremonies.
- Its color comes mainly from **curcumin**, a bright **yellow phenolic compound**.
- India is a leading producer and exporter of turmeric in the world. India produces **80% of turmeric** in the world.
  - **Telangana** was the leading producer of turmeric

in India during 2018. **Maharashtra** and **Tamil Nadu** were second and third in the ranking that year.

- It can be **grown in diverse tropical conditions** from **sea level to 1500 m above sea level**, at a temperature range of **20-35° C** with an annual **rainfall of 1500 mm or more**, under **rainfed or irrigated conditions**.

**Central Institute of Medicinal and Aromatic Plants**

- It is a **frontier plant research laboratory of Council of Scientific and Industrial Research (CSIR), established in 1959.**
- It is steering multidisciplinary high quality research in biological and chemical sciences and extending technologies and services to the farmers and entrepreneurs of medicinal and aromatic plants (MAPs).
- It is **headquartered in Lucknow.**

**National Botanical Research Institute**

- It is **one of the constituent research institutes of the CSIR set up in 1953.** It is **headquartered in Lucknow.**
- It undertakes **basic and applied research on various aspects of plant science**, including documentation, systematics, conservation, prospection, and genetic improvement.

Note:



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# Social Issues

## Highlights

- PM Poshan Scheme
- Global Roadmap to Defeat Meningitis: WHO
- Forest Rights Act

## PM Poshan Scheme

### Why in News

Recently, the Union Cabinet has approved the **Prime Minister POSHAN scheme or PM-POSHAN for providing one hot cooked meal in Government and Government-aided schools.**

- The scheme will **replace the existing national programme for mid-day meal in schools or Mid-day Meal Scheme.**
- It has been launched for an **initial period of five years (2021-22 to 2025-26).**

### Mid-day Meal Scheme

- The Mid-day Meal Scheme (**under the Ministry of Education**) is a **centrally sponsored scheme** which was **launched in 1995.**
- It is considered as the **world's largest school meal programme** aimed to attain the goal of universalization of primary education.
- **Provides cooked meals to every child** within the age group of six to fourteen years studying in classes I to VIII who enrolls and attends the school.
- If the Mid-Day Meal is not provided in school on any school day due to non-availability of food grains or any other reason, the State Government shall pay **food security allowance** by 15<sup>th</sup> of the succeeding month.

### Key Points

- **PM POSHAN:**
  - **Coverage:**
    - The scheme will cover 11.8 crore students enrolled in **classes 1 to 8** in over 11.2 lakh schools across the country.

- **Primary (1-5) and upper primary (6-8) schoolchildren** are currently entitled to 100 grams and 150 grams of food grains per working day each, to ensure a minimum of 700 calories.

- The scheme will be **extended to students studying in pre-primary or Balvatikas** running in government and government aided primary schools.

- **Balvatika** is the pre-school that was started in government schools last year to include **children aged younger than six years** in the formal education system.

### ○ Nutritional Gardens:

- The government will **promote nutritional gardens** in schools. The gardens are being provided to **offer additional micro-nutrients to students.**

### ○ Supplementary Nutrition:

- The new scheme has a provision for **supplementary nutrition for children** in **aspirational districts** and those with high prevalence of **anaemia.**
  - It **does away with the restriction on the part of the Centre** to provide funds only for wheat, rice, pulses and vegetables.
  - Currently, if a state decides to add any component like milk or eggs to the menu, the Centre does not bear the additional cost. Now that restriction has been lifted.

### ○ Tithi Bhojan Concept:

- The concept of **TithiBhojan** will be encouraged extensively.
- TithiBhojan is a **community participation programme** in which people provide special food to children on special occasions/festivals.

### ○ Direct Benefit Transfer (DBT):

Note:



- The central government will ensure **Direct Benefit Transfer (DBT) from states to schools**, which will use it to cover cooking costs.
  - Earlier money was allocated to the states, which then included their share of the money before sending it to a nodal midday meal scheme authority at district and tehsil levels.
- This is to **ensure no leakages at the level of district administration** and other authorities.
- **Nutrition Expert:**
  - A **nutrition expert is to be appointed in each school** whose responsibility is to ensure that health aspects such as Body Mass Index (BMI), weight and haemoglobin levels are addressed.
- **Social Audit of the Scheme:**
  - A **social audit of the scheme has also been mandated** for each school in each state to study the implementation of the scheme, which was so far not being done by all states.
  - The **Ministry of Education** will also **engage college and university students** to monitor the scheme at a local level.
- **Fund Sharing:**
  - The **Centre will bear Rs. 54,061 crore** of the total estimated cost of Rs 1.3 lakh crore, with the **states paying Rs 31,733 crore** (Rs 45,000 crore will be released by the Centre as subsidies for food grains).
- **Vocal for Local for Atmanirbhar Bharat:**
  - Involvement of **Farmers Producer Organizations (FPO)** and **Women Self Help Groups** in implementation of the scheme will be encouraged.
  - Use of locally grown traditional food items for a fillip to local economic growth will be encouraged.
- **Challenges:**
  - **Meeting Nutrition Targets:**
    - As per the **Global Nutrition Report 2020**, India is among 88 countries that are likely to miss global nutrition targets by 2025.
  - **Serious 'Hunger' Level:**
    - India has been ranked at 94 among 107 countries in the **Global Hunger Index (GHI) 2020**. India has a level of hunger that is "serious".
  - **Menace of Malnutrition:**

- According to the **National Family Health Survey-5**, several states across the country have reversed course and recorded worsening levels of child malnutrition.
- India is home to about 30% of the world's stunted children and nearly 50% of severely wasted children under the age of five.
- **Others:**
  - Corrupt practices and Caste Bias and Discrimination in serving food.
- **Other Related Government Initiatives:**
  - **Anemia Mukh Bharat Abhiyan**
  - **The National Food Security Act (NFSA), 2013**
  - **Pradhan Mantri Matru Vandana Yojana (PMMVY)**
  - **Poshan Abhiyaan**

## Global Roadmap to Defeat Meningitis: WHO

### Why in News

The **World Health Organization (WHO)** has launched the **first-ever global strategy** to defeat meningitis - '**Global Roadmap to Defeat Meningitis by 2030**'.

### Key Points

- **About:**
  - **Goals:** The roadmap includes three visionary goals:
    - **Eliminate epidemics of bacterial meningitis.**
    - **Reduce cases of vaccine-preventable bacterial meningitis** by 50% and deaths by 70%.
    - **Reduce disability** and improve quality of life after meningitis of any cause.
  - **Aims:**
    - **Achievement of high immunisation coverage**, development of new affordable vaccines and improved prevention strategies and outbreak response.
    - **Speedy diagnosis** and optimal treatment for patients.
    - **Good data** to guide prevention and control efforts.
    - **Care and support** for those affected, focusing on early recognition and improved access to care and support for after-effects.

Note:

- **Advocacy and engagement**, to ensure high awareness of meningitis, accountability for national plans, and affirmation of the right to prevention, care and after-care services.

#### ➤ Meningitis:

- **About:** Meningitis is an inflammation (swelling) of the protective membranes covering the brain and spinal cord.
  - It is **predominantly caused by bacterial and viral infection**. However, **injuries, cancer, certain drugs, and other types of infections** also can cause meningitis.
- **Symptoms:** Severe headache that seems different from normal, Sudden high fever, Stiff neck, Confusion or difficulty concentrating, etc.
- **Transmission:** **Most bacteria** that cause meningitis such as *meningococcus*, *pneumococcus* and *Haemophilus influenzae* are carried in the human nose and throat.
  - They spread from **person to person by respiratory droplets or throat secretions**.
  - *Group B streptococcus* (bacteria) is often spread from **mother to child around the time of birth**.
- **Impact:** Meningitis is fatal and debilitating, striking fast with serious health, economic and social consequences, including life-long disabilities, and affecting people of all ages in all countries.
  - Meningitis caused by **bacterial infection causes around 2,50,000 deaths** a year and can lead to **fast-spreading epidemics**.
  - It **kills a tenth of those infected**, mostly children and young people and **leaves a fifth with long-lasting disability**, such as seizures, hearing and vision loss, neurological damage, and cognitive impairment.
- **Spread:** Meningitis epidemics have occurred in the last decade in all regions of the world. But it is most common in the '**Meningitis Belt**,' which spans 26 countries across **sub-Saharan Africa**.
- **Available Vaccines:** Meningococcal, Haemophilus influenzae type b and Pneumococcal vaccines.
- **Treatment:** A range of antibiotics is used to treat meningitis, including penicillin, ampicillin, and ceftriaxone.

## Forest Rights Act

### Why in News

Recently, the **Jammu and Kashmir government** has decided to implement the **Forest Rights Act (FRA), 2006**, which will elevate the socio-economic status of a sizable section of the 14-lakh-strong population of **tribals and nomadic communities**.

### Key Points

- **About:**
- FRA enacted in 2006 **recognises the rights of forest-dwelling tribal communities** and other traditional forest dwellers to forest resources on which these communities **were dependent for a variety of needs, including livelihood, habitation** and other sociocultural needs.
- It recognizes and vest the forest rights and occupation in Forest land in **Forest Dwelling Scheduled Tribes (FDST)** and **Other Traditional Forest Dwellers (OTFD)** who have been residing in such forests for generations.
- It strengthens the **conservation regime of the forests** while ensuring livelihood and food security of the FDST and OTFD.
- The **Gram Sabha** is the authority to initiate the process for **determining the nature and extent of Individual Forest Rights (IFR) or Community Forest Rights (CFR)** or both that may be given to **FDST and OTFD**.
- **Rights Under the Forest Rights Act:**
  - **Title rights:**
    - It gives FDST and OTFD the right to ownership to land farmed by tribals or forest dwellers subject to a maximum of 4 hectares.
    - **Ownership is only for land** that is actually being cultivated by the concerned family and no new lands will be granted.
  - **Use rights:**
    - The rights of the dwellers extend to extracting **Minor Forest Produce**, grazing areas etc.
  - **Relief and development rights:**
    - To rehabilitate **in case of illegal eviction or forced displacement** and to basic amenities, subject to restrictions for forest protection.
  - **Forest management rights:**
    - It includes the right to **protect, regenerate or conserve or manage any community forest**

Note:



resource which they have been traditionally protecting and conserving for sustainable use.

➤ **Significance:**

- **Constitutional Provision Expansion:**
  - It expands the mandate of the **Fifth and the Sixth Schedules** of the Constitution that protect the claims of indigenous communities over tracts of land or forests they inhabit.
- **Security Concerns:**
  - The alienation of tribes was one of the factors behind the **Naxal Movement**, which affected states like Chhattisgarh, Odisha and Jharkhand.
- **Forest Governance:**
  - It has the **potential to democratise forest governance** by recognising community forest resource rights.
  - It will ensure that **people get to manage their forest on their own**, which will regulate exploitation of forest resources by officials, improve forest governance and better management of tribal rights.

➤ **Challenges:**

- **Administrative Apathy:**
  - As tribals are not a big vote bank in most states,

**governments find it convenient to subvert FRA** or not bother about it at all in favour of monetary gains.

- The forest **bureaucracy has misinterpreted the FRA as an instrument to regularise encroachment** instead of a welfare measure for tribals.
- Corporates fear they may lose the cheap access to valuable natural resources.

○ **Dilution of Act:**

- Certain sections of environmentalists raise the concern that **FRA bends more in the favour of individual rights**, giving lesser scope for community rights.

○ **Institutional Roadblock:**

- Rough maps of community and individual claims are prepared by Gram Sabha which at times often lack technical knowhow and suffers from educational incapacity.

○ **Misuse of FRA:**

- The FRA has been misused and communities have rushed to file claims. Politicians across party lines have **interpreted FRA as a land distribution exercise** and have fixed targets for districts.

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Note:



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# Art & Culture

## Highlights

- Qutub Minar

- Sree Padmanabhaswamy Temple

## Qutub Minar

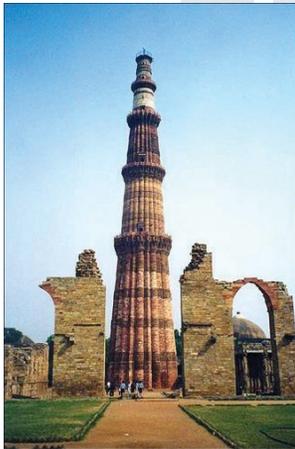
### Why in News

Recently, steep stairways and wooden ramps among other changes have been brought at the **World Heritage Site of Qutub Minar** that will make the place accessible for disabled and the elderly.

- **Humayun's Tomb** (1993) and **Red Fort Complex** (2007) are other **world heritage monuments** in Delhi.

### Key Points

- It is a **five-storeyed red sandstone tower** (72.5 m high) **built by Muslim conquerors in the thirteenth century** to commemorate their final triumph over the Rajput rulers of Delhi (Qutub means victory), while also serving as a tower from where muezzins (criers) call for prayer at the **Quwwatu'l-Islam mosque** nearby.
  - A **7 m-high iron pillar** stands in the courtyard of the mosque.
- Its surrounding contains **Alai-Darwaza Gate**, the masterpiece of **Indo-Muslim art (built in 1311)**.
- The building process of Qutub Minar took about 75 years. Its construction was **started by Qutub-ud-din Aibak** (1206-1210) in 1193 and **finished by Iltutmish** (1211-1236).
  - In 1368, it was repaired by the rulers of the day, Muhammad-bin-Tughluq (1325-51) and Firuz Shah Tughluq (1351-88).



- The minar (tower) is engraved with fine **arabesque decorations** on its surface, mainly **verses from the Quran**.
- Qutub Minar and its monuments were **declared a UNESCO World Heritage Site in 1993**.

## Sree Padmanabhaswamy Temple

### Why in News

Recently, the **Supreme Court (SC)** has **declined a plea filed by Sree Padmanabhaswamy Temple Trust** seeking to exempt it from the audit of 25 years as ordered by the court last year (2020).

### Key Points

- **About:**
  - The Temple has been **in the news since 2011 after the discovery of treasure worth over Rs. 1 lakh crore** in its underground vaults.
  - The SC in 2011 said that, as per customary law, the **members of the royal family have the shebait rights** even after the death of the last ruler.
    - Shebait rights means the **right to manage the financial affairs** of the deity.
    - The Padmanabhaswamy Temple **Trust has been created by the former Travancore royal family**.
  - However, the court **directed the setting up of an administrative committee** with the Thiruvananthapuram District Judge as its chairperson, for transparent administration of the Temple in the future.
  - The **trust argues** that since it had been constituted (on earlier orders by the court) to oversee rituals of the Temple, with no role in the administration, it is a distinct entity from the temple and could not be included in the call for an audit.
  - **According to the Administrative Committee**, it is

Note:



in great financial stress and the offerings are not sufficient to meet the expenses, **seeking an audit** of the temple-related trust run by the Travancore royal family.

➤ **Sree Padmanabhaswamy Temple:**

- According to Historians, the temple dates back to the 8<sup>th</sup> century but the **present structure was built in the 18<sup>th</sup> century by the then Travancore Maharaja Marthanda Varma.**

- The temple was **initially made of wood but later it was constructed with granite.**
- The temple is built in the **unique Chera style of architecture**, and its main deity is **Lord Vishnu** who is found in the **Anantha Shayana posture** (reclined posture of eternal yoga) on **Adishesha or king of all serpents.**
- It is known to be one of the **108 holy temples associated** with Vaishnavism in India.



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Note:



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# Security

## Highlights

- Reduction in Left Wing Extremism Related Violence
- Exercise Samudra Shakti
- Arjun Mk-1A Battle Tanks
- Crime in India Report 2020: NCRB
- China Questions India's Agni V Missile Project
- Akash Prime Surface-to-Air Missile: DRDO

## Reduction in Left Wing Extremism Related Violence

### Why in News

According to data provided by the **Ministry of Home Affairs (MHA)**, there has been a steady decline in **Left Wing Extremism (LWE)** related violence and geographical spread of LWE influence in the country.

- The **geographical influence of Maoists** has contracted to only 41 districts in the country, which is a sharp reduction from 96 such districts in 10 States in 2010.
- **LWE incidents have also reduced** from 2,258 in 2009 to 349 incidents till August 2021.

### Key Points

- **Left Wing Extremism in India:**
  - Left-wing extremists, popularly known as **Maoists** worldwide and as **Naxalites** in India.
  - The **term Naxalism** derives its name from the **village Naxalbari of West Bengal**. It **originated as a rebellion against local landlords** who bashed a peasant over a land dispute.
    - The rebellion was initiated in **1967**, with an objective of rightful redistribution of the land to working peasants under the leadership of **Kanu Sanyal** and **Jagan Santhal**.
  - The movement has **spread across the Eastern India in less developed areas** of states such as Chhattisgarh, Odisha and Andhra Pradesh.
  - It is considered that **Naxals support Maoist political sentiments and ideology**.
    - Maoism is a **form of communism developed by Mao Tse Tung**. It is a doctrine to capture

State power through a combination of armed insurgency, mass mobilization and strategic alliances.

- **The region, affected by LWE**, is referred to as the **Red corridor**.

### ➤ Reasons for the LWE:

#### ○ Tribal Discontent:

- The **Forest (Conservation) Act, 1980** has been used to target tribals, who depend on forest produce for their living.
- Massive **displacement of tribal population** in the naxalism-affected states due to development projects, mining operations and other reasons.

#### ○ Easy Target for Maoists:

- Such people who do not have any source of living are taken into naxalism by Maoists.
- Maoists provide arms and ammunition and money to such people.

#### ○ Gaps in the Socio-Economic System of the Country:

- Government measures its success on the basis of the number of violent attacks rather than the development done in the naxal-affected areas.
  - Absence of strong technical intelligence to fight with naxalites.
- **Infrastructural problems**, for instance, some villages are not yet connected properly with any communication network.

#### ○ No Follow-Up from Administration:

- It is seen that **even after police take hold of a region**, administration fails to provide essential services to the people of that region.
- Confusion over tackling naxalism as a social issue or as a security threat.

### ➤ Governments Initiatives to Check Naxal Activities:

Note:



- **Aspirational Districts Programme:** Launched in 2018, it **aims to rapidly transform the districts** that have shown relatively lesser progress in key social areas.
- **SAMADHAN (2017):**
  - It stands for
    - **S**–Smart Leadership,
    - **A**–Aggressive Strategy,
    - **M**–Motivation and Training,
    - **A**–Actionable Intelligence,
    - **D**–Dashboard Based KPIs (Key Performance Indicators) and KRAs (Key Result Areas),
    - **H**–Harnessing Technology,
    - **A**–Action plan for each Theatre, and
    - **N**–No access to Financing.
  - This doctrine is the **one-stop solution for the LWE problem**. It encompasses the entire strategy of government from short-term policy to long-term policy formulated at different levels.
- **National Policy and Action Plan in 2015:** It consists of a **multi-pronged approach** comprising security measures, development initiatives and ensuring rights & entitlements of local communities.
  - **The Ministry of Home Affairs (MHA) is supporting the State Governments** extensively by way of deployment of **Central Armed Police Force (CAPF)** Battalions, provision of helicopters and UAVs and sanction of India Reserve Battalions (IRBs)/ Special India Reserve Battalions (SIRBs) etc.
  - Funds are provided under **Modernization of Police Force (MPF), Security Related Expenditure (SRE) Scheme and Special Infrastructure Scheme (SIS)** for modernization and training of State Police.
  - **Several development initiatives have been implemented** for construction of roads, installation of mobile towers, skill development, improving network of banks and post offices, health and education facilities.
  - Funds for development are also provided to most **LWE affected districts** under the **Special Central Assistance (SCA) scheme**.
- **Greyhounds:** It was raised in 1989 as an elite anti-naxal force.

- **Operation Green Hunt:** It was started in 2009-10 and massive deployment of security forces was done in the naxal-affected areas.

## Exercise Samudra Shakti

The third edition of **maritime exercise ‘Samudra Shakti’** between **India and Indonesia** will be conducted from 20<sup>th</sup>-22<sup>nd</sup> September, 2021 in the **Sunda Strait**.



### Key Points

#### ➤ About:

- In pursuance of **India’s Act East Policy**, **Exercise ‘Samudra Shakti’** was conceived in 2018 as a bilateral IN-IDN exercise.
- The exercise aims to strengthen the bilateral relationship, enhance mutual understanding and interoperability in maritime operations between the two navies.

#### ➤ India’s Participation:

- The participating Indian **Navy ships Shivalik and Kadmatt** are amongst the latest indigenously designed and built multi-role Guided Missile Stealth Frigate and Anti-Submarine Corvette respectively.
- Indian Navy’s Anti-Submarine Warfare capable Long Range Maritime Reconnaissance **Aircraft P8I** is also participating in the exercise.

#### ➤ Other Exercises with Indonesia:

- **Garuda Shakti** (Military Exercise)
- **IND-INDO CORPAT, IND-INDO BILAT** (Maritime Exercise)

#### Note:

- **GARUDA** is a bilateral air exercise between **India and France**.

Note:



## Arjun Mk-1A Battle Tanks

### Why in News

Recently, the Ministry of Defence (MoD) placed an order with Heavy Vehicles Factory (HVF), Chennai for supply of **118 Main Battle Tanks (MBTs) Arjun Mk-1A** for the Indian Army.



### Key Points

- **About:**
  - The state-of-the-art MBT Mk-1A is a **new variant of Arjun Tank** designed to enhance fire power, mobility and survivability.
    - The Arjun Main Battle Tank project was **initiated by DRDO in 1972**.
  - Infused with **72 new features and more indigenous content from the Mk-1 variant**, the tank would ensure effortless mobility in all terrains, besides precise target engagement during day and night.
  - This indigenous MBT proves to be **at par with any contemporary in its class across the globe**.
- **Developed By:**
  - **Combat Vehicles Research and Development Establishment (CVRDE)**, along with other laboratories of **Defence Research & Development Organisation (DRDO)**.
- **Significance:**
  - The order, worth Rs 7,523 crore, will provide further boost to the **'Make in India' initiative** in the defence sector and is a big step towards achieving **'Aatmanirbhar Bharat'**.
- **Mk1A and MkII:**
  - The **development of Arjun Mk1** was followed by improved variants - **Mk1A and MkII**.

- **Arjun Mk1A**, which features improved firepower and transmission systems, completed the final integration tests in 2019 and was cleared for production.
- The **Arjun MkII variant** is a **light-weight Futuristic Main Battle Tank (FMBT)** with electro-optical sensors and high-power lasers.

## Crime in India Report 2020: NCRB

### Why in News

Recently, **National Crime Records Bureau (NCRB)** released the **Crime in India Report 2020**.

- While 2020, a year marked by months of a national **lockdown** due to the **pandemic** saw **fewer traditional crimes** such as those committed against women and children, among others, it witnessed a **big spike in civil conflicts**.

### A JUMP IN NUMBERS

OFFENCES	2019	2020	% increase
Communal riots	438	857	96%
Caste riots	492	736	50%
Agrarian riots	1,579	2,188	38%
Andolan/Morcha riots	1,442	1,905	33%
Promoting Enmity Between Groups	1,058	1,804	70%
<b>TOTAL RIOTS (including other causes)</b>	<b>45,985</b>	<b>51,606</b>	<b>12%</b>

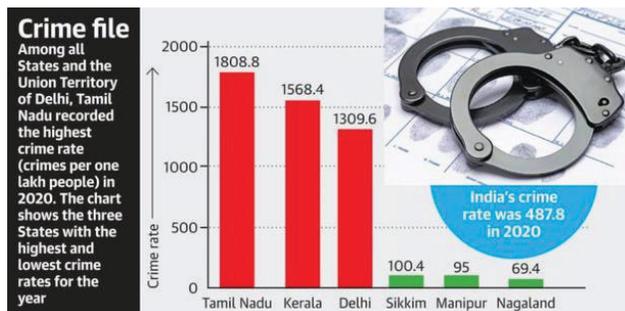
*Offences Against The State decreased by 27%, but UP only major state where they increased*  
Source: NCRB

### Key Points

- **Riots (Civil Conflicts):**
  - **Communal riots** registered an **increase of 96% in 2020** over the previous year.
    - **Delhi Police alone registered the highest** i.e. 520 cases of communal riots in the year and **Uttar Pradesh (UP) did not record a single case** of communal violence in 2020.
  - **Caste riots** saw an increase of close to **50%**, **agrarian riots 38%** and **riots during 'andolan/morcha' increased by 33%**.
- **Traditional Crimes:**

Note:

- The number of cases registered for crimes against women, children and senior citizens, theft, burglary, robbery and dacoity, among others, **dropped by about 2 lakh**.
- **Murder** registered a marginal **increase of 1%** even as offences falling under the category of “**violent crimes**” **decreased by 0.5%**.
- **Delhi** is the **most unsafe city for women**. More than **10,093 cases of crimes against women** were registered in the capital in 2020.
- **Environment Related Offences:**
  - Cases under the ‘environment-related offences’ category **increased by 78.1%** in the country in 2020.
- **Cyber Crime:**
  - The rate of cyber crime (incidents per lakh population) also **increased from 3.3% in 2019 to 3.7%** in 2020.
- **Offences Against State:**
  - The year also saw a significant **drop in cases related to Offences against the State**, with a drop of **27% over 2019**.
  - **UP**, however, was the **only major state to record an increase in this category**, mostly due to the large number of ‘**Damage to Public Property**’ cases registered by the state, many of them during the **anti- CAA (Citizenship (Amendment) Act, 2019) protests**.
  - Offences against the State’ include cases related to **sedition** and **waging war** against the nation, those falling under provisions of the **Unlawful Activities Prevention Act (UAPA) 1967, Official Secrets Act 1923 and Damage to Public Property Act 1954**.
- **State Wise Data:**



### National Crime Records Bureau

- NCRB, **headquartered in New Delhi**, was **set-up in 1986** under the **Ministry of Home Affairs** to function as a repository of information on crime

and criminals so as to assist the investigators in linking crime to the perpetrators.

- It was set up based **on the recommendations of the National Police Commission (1977-1981)** and the MHA’s Task Force (1985).
- NCRB **brings out the annual comprehensive statistics of crime** across the country (‘Crime in India’ report).
  - Having been **published since 1953**, the report **serves as a crucial tool** in understanding the law and order situation across the country.
- The inaugural function of the **2<sup>nd</sup> CCTNS Hackathon and Cyber Challenge 2020-21** of NCRB was held in New Delhi.

## China Questions

### India’s Agni V Missile Project

#### Why in News

Recently, China has cited a **United Nations Security Council (UNSC)** resolution to question India’s missile programme amid reports of an upcoming test for the Agni-V intercontinental ballistic missile.

- **UNSC Resolution 1172** was issued after India’s 1998 nuclear tests.

#### Key Points

- **About Agni V Missiles:**
  - Agni-V is the **most advanced surface-to-surface indigenously built ballistic missile**.
  - It is a **three-stage, solid fuelled, 17-metre tall missile**, and is capable of **carrying a nuclear warhead of about 1.5 tonnes**.
  - Agni-V is a **fire and forget missile**, which once fired cannot be stopped, except by an interceptor missile.
  - It has been developed under the **Integrated Guided Missile Development Programme (IGMDP)**.
    - IGMDP was **conceived by Dr. A.P.J. Abdul Kalam** to enable India attain self-sufficiency in the field of missile technology. It was approved by the Government of India in 1983 and completed in March 2012.
    - The **5 missiles (P-A-T-N-A)** developed under this program: **Prithvi, Agni, Trishul, Nag, Akash**.
  - **Agni Class of Missiles:**

Note:

- They are the **mainstay of India's nuclear launch capability.**
- **Range:**
  - Agni I: Range of 700-800 km.
  - Agni II: Range more than 2000 km.
  - Agni III: Range of more than 2,500 Km
  - Agni IV: Range is more than 3,500 km and can fire from a road mobile launcher.
  - Agni-V: The longest of the Agni series, an **Inter-Continental Ballistic Missile (ICBM)** with a range of over 5,000 km.
  - **Agni-P (Prime):** It is a canisterised missile with range capability between 1,000 and 2,000 km. It will **replace the Agni I missile.**
- The missile has been successfully tested five times and is in the process of induction into the Army.
- Very few countries, including the US, China, Russia, France and North Korea, have InterContinental Ballistic Missiles (ICBM).
  - ICBM is a **land-based, nuclear-armed ballistic missile** with a range of more than 5,600 km.
- **About UNSC resolution 1172:**
  - The resolution, in the aftermath of the **1998 nuclear tests** that calls upon India and Pakistan immediately:
    - To stop their nuclear weapon development programmes,
    - To refrain from weaponization or from the deployment of nuclear weapons,
    - To cease development of ballistic missiles capable of delivering nuclear weapons and any further production of fissile material for nuclear weapons,
    - To confirm their policies not to export equipment, materials or technology that could contribute to weapons of mass destruction or missiles capable of delivering.
- **Issues in Chinese Claims:**
  - Agni V has received wide attention in the Chinese press with focus on the detail that the 5,000 km-range nuclear-capable missile **would bring many cities in China within range.**
  - While citing the resolution regarding India's missile programme, China has, in contrast, been **aiding the development of Pakistan's nuclear and missile programmes.**

- China has been providing **enriched uranium and even technology** for nuclear-capable missiles.
- Further, in 2018, **China had sold Pakistan a tracking system** to speed up development of multi-warhead missiles.

## Akash Prime

### Surface-to-Air Missile: DRDO

#### Why in News

Recently, the **Defence Research and Development Organisation (DRDO)** tested a new version of the Akash Missile – '**Akash Prime**' – from the Integrated Test Range (ITR), Chandipur, Odisha.

- Earlier, DRDO launched the **Akash-NG (New Generation)** and the **Man Portable Anti Tank Guided Missile (MPATGM).**

#### Defence Research & Development Organisation

- It is the **Research & Development wing of the Ministry of Defence**, Govt of India, with a vision to empower India with cutting-edge defence technologies.
- It was **established in 1958** after combining the Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO).

#### Key Points

- **About:**
  - In comparison to the existing Akash system, it is equipped with **indigenous active RF (Radio Frequency) seeker** for improved accuracy, which makes sure that the target at which the missile is fired is hit.



Note:



drishti

- Other improvements were also incorporated in Akash Prime like ensuring **reliable performance** under a **low-temperature** environment at **higher altitudes**.

➤ **Development & Production:**

- Developed by Defence Research & Development Laboratory (DRDL), Hyderabad in collaboration with other DRDO laboratories under the Missiles and Strategic Systems (MSS).

➤ **Akash missile:**

- Akash is India's first indigenously produced **medium range SAM** that can engage multiple targets from multiple directions and it can be **launched from mobile platforms like battle tanks or wheeled trucks**. It has nearly 90% kill probability.
  - The development of the Akash SAM was started by the DRDO in the late 1980s as part of the **Integrated Guided Missile Development Programme**.
- It is unique in the way that It can simultaneously engage **multiple targets in group mode or autonomous mode**.
- It has **built-in Electronic Counter-Counter Measures (ECCM)** features, which means that it has mechanisms on-board that can **counter the**

**electronic systems** that deceive the detection systems.

- The missile is **supported by the indigenously developed radar** called 'Rajendra'.
- It can **engage targets at a speed 2.5 times more than the speed of sound** and can detect and destroy targets flying at low, medium and high altitudes.
- The missile is reportedly **cheaper and more accurate** than US' Patriot missiles due to its solid-fuel technology and high-tech radars.

**Integrated Guided-Missile Development Programme**

- It was **conceived by Dr. A.P.J. Abdul Kalam** to enable India **attain self-sufficiency** in the field of missile technology.
- The **5 missiles (P-A-T-N-A)** developed under this program are:
  - **Prithvi**: Short range surface to surface ballistic missile.
  - **Agni**: Ballistic missiles with different ranges, i.e. Agni (1, 2, 3, 4, 5).
  - **Trishul**: Short range low level surface to air missile.
  - **Nag**: 3<sup>rd</sup> generation anti-tank missile.
  - **Akash**: Medium range surface to air missile.

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Note:



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# Miscellaneous

## Highlights

- Covid-19 Compensation
- INSPIRESAT-1 Cubesat Satellite
- Lord Nataraj
- SAUBHAGYA Scheme
- Tunnels in Jammu & Kashmir
- National Service Scheme Awards
- GI Tag to Assam's Judima Wine Rice
- Surya Kiran XV
- Single Window System for Investors
- Microchip: Smallest Man-Made Flying Structure
- SPIN Scheme: KVIC
- Killing of White-Sided Dolphins: Faroe Islands
- Black Tigers
- Toxic 3 Os Used in Sunscreen
- Earthshot Prize 2021
- Exercise SCO Peaceful Mission 2021
- Tarballs
- AUKUS Grouping
- Mammoth Cave: US
- Free Education to 112 Aspirational Districts
- Delhi-Mumbai Expressway: World's Longest
- Sea Cucumber
- GI Tagged Feni: Goa
- Fast and Secured Transmission of Electronic Records (FASTER) System
- National Mission on Cultural Mapping
- Rajaji Tiger Reserve: Uttarakhand
- Elder Line: Toll-Free Number for Elderly
- Cyclone Gulab

## Covid-19 Compensation

### Why in News

Recently, the **Ministry of Home Affairs** has issued orders for an **ex gratia of Rs. 50,000** to the next of kin of those who died of **Covid-19**. The amount has been recommended by the **National Disaster Management Authority (NDMA)**.

- The amount will be disbursed from the **State Disaster Response Fund (SDRF)**.
- Last year, **Covid-19 was notified as a disaster** by the Ministry.

### Key Points

- **About:**
  - The **ex gratia is applicable to the deceased**, including those involved in relief operations or associated in preparedness activities "**subject to the cause of death being certified as Covid-19**".
  - The assistance would be **applicable from the date of the first case** in the country and **continue till**

## Relief measure

A look at how the ex gratia of ₹50,000 will be paid as per the NDMA recommendation



**The funds:** The States will provide the ex gratia relief from States Disaster Response Fund. The District Disaster Management Authorities will make the disbursement



**The procedure:** After documents proving a COVID-19 death are submitted, the claim will be settled within 30 days. The amount will be deposited in Aadhaar-linked bank accounts



**Addressing grievances:** District-level committees will deal with grievances regarding certification of death and issue amended documents

**the de-notification of Covid-19 as a disaster or till further orders**, whichever is earlier.

### ➤ State Disaster Response Fund (SDRF):

- **About:**
  - SDRF has been constituted under **Section 48 (1) (a)** of the **Disaster Management Act, 2005**.
    - It was constituted based on the **recommendations of the 13<sup>th</sup> Finance Commission**.
  - It is the **primary fund available** with the State governments for responses to notified disasters

Note:



to meet expenditure for providing immediate relief.

- It is **audited by the Comptroller and Auditor General of India (CAG) every year.**
- **Contribution:**
  - The **Centre contributes 75% of the SDRF allocation** for general category States and Union Territories and **90% for special category States** and Union Territories (northeastern States, Sikkim, Uttarakhand, Himachal Pradesh, Jammu and Kashmir).
  - The annual Central contribution is **released in two equal installments** as per the recommendation of the Finance Commission.
- **Disaster (s) Covered under SDRF:**
  - **Cyclone**, drought, **earthquake**, fire, **flood**, **tsunami**, hailstorm, **landslide**, avalanche, cloudburst, pest attack, frost and **cold waves**.
- **Local Disasters:**
  - A State Government may use up to **10% of the funds available** under the SDRF for providing immediate relief to the victims of natural disasters that they consider to be 'disasters' within the local context in the State and which are not included in the notified list of disasters of the Ministry of Home Affairs.

## INSPIRESAT-1 Cubesat Satellite

### Why in News

INSPIRESat-1 CubeSat, developed under the **International Satellite Program in Research and Education (INSPIRE)**, is ready for launch.

### Key Points

- **About:**
  - It is a small scientific satellite which will be placed in a **low earth orbit**, equipped with a **Compact Ionosphere Probe** for studying the **earth's ionosphere**.
    - The **ionosphere is the part of the atmosphere** that is ionized by **solar radiation**.
    - CIP is an all-in-one **plasma sensor** that uses a single instrument to perform multiple sensor functions in a time-sharing mechanism.

- It will also provide a greater understanding of why the **Sun's corona is orders of magnitude hotter than the photosphere**, why there is an abundance of elements change during different solar events, and how these events **affect the earth's ionosphere**.
  - An **order of magnitude** is an exponential change of plus-or-minus 1 in the value of a quantity or unit.
- It weighs less than 10kg and will be launched aboard an upcoming **Polar Satellite Launch Vehicle (PSLV)** of the **Indian Space Research Organisation (ISRO)**.
  - **PSLV is the third generation launch vehicle of India**. It is the first Indian launch vehicle to be **equipped with liquid stages**.
  - It is a **four-staged launch vehicle** with first and third stages using solid rocket motors and second and fourth stages using liquid rocket engines.

### ➤ Developed By:

- Laboratory for Atmospheric and Space Physics (LASP) at the University of Colorado Boulder in the U.S.
- National Central University, Taiwan
- Nanyang Technological University in Singapore
- Indian Institute of Space Science and Technology (IIST)

### INSPIRE

- INSPIRE is a **consortium of universities with active space programs**, formed to advance space science and engineering.
- A **constellation of earth and space-weather observation satellites is envisaged** under the INSPIRE program which includes a series of INSPIRESats i:e INSPIRESat-1 to INSPIRESat-7.



### Cubesat

- A **cube satellite (cubesat)** is a standardized, **low cost, small satellite** design typically used for technological demonstration and research.

Note:

- It is a **Nanosatellite** and other Nanosatellites include PocketQubes, TubeSats, Sun Cubes, ThinSats etc.
  - **Nanosatellites** are any satellite weighing less than 10 kilograms.

## Lord Nataraj

### Why in News

Recently, as many as **157 artefacts and antiquities** were handed over to the Prime Minister by the **United States** including a **bronze Nataraj figure**.

- The list has a diverse set of items **bas-relief panel of Revanta** in sandstone made in the **10<sup>th</sup> century**, 56 **terracotta** pieces, several bronze figurines and copper objects, among others which mainly belong to **11<sup>th</sup> and 14<sup>th</sup> centuries**.
- It also includes an **18<sup>th</sup>-century sword in its sheath**, with the inscription mentioning **Guru Hargobind Singh in Persian**, some **historic antiquities** comprise figurines relating to **Hinduism, Buddhism and Jainism**.

### Key Points

- **Nataraja (Lord of the Dance)**, the **Hindu god Shiva** in his form as the **cosmic dancer**, is represented in metal or stone in many Shaivite temples, particularly in South India.
  - It is an **important piece of Chola sculpture**.
- The **upper right-hand** holds the drum, which signifies the **sound of creation**. All creations spring from the great sound of the damru.
- The **upper left-hand** holds the eternal fire, which represents the **destruction**. Destruction is the precursor and inevitable counterpart of creation.
- The **lower right hand** is raised in the gesture of **Abhay mudra** signifying benediction and reassuring the **devotee to not be afraid**.
- The **lower left-hand** points towards the upraised foot and indicates the **path of salvation**.
- Shiva is dancing on the figure of a small dwarf. The dwarf symbolises **ignorance** and the ego of an individual.



- Shiva is shown as the **source of all movement within the cosmos** and as the god whose **doomsday dance, represented by the arch of flames**, accompanies the dissolution of the universe at the end of an eon.
- The matted and flowing locks of Shiva represent the **flow of river Ganges**.
- In ornamentation, one ear of Shiva has a male earring while the other has a female. This represents the fusion of male and female and is often referred to as **Ardhanarishwar**.
- A snake is twisted around the arm of Shiva. The snake symbolises the **kundalini power**, which resides in the human spine in the dormant stage. If aroused, one can attain true consciousness.
- The Nataraja is surrounded by a nimbus of glowing lights which symbolises the **vast unending cycles of time**.

## SAUBHAGYA Scheme

### Why in News

Recently, the **Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA Scheme)** has successfully completed four years of its implementation.

- 2.82 crore households have been electrified since its launch till 31<sup>st</sup> March, 2021.

### Key Points

- **About:**
  - It was **launched in 2017** to ensure electrification of all households in the country in rural as well as urban areas.
- **Objectives:**
  - Achieving **Universal Household Electrification** in the country, through last mile connectivity.
  - Providing access to electricity to **all un-electrified households** in rural areas and poor households in urban areas.
- **Beneficiaries:**
  - They are identified using **Socio Economic and Caste Census (SECC) 2011** data.
  - However, un-electrified households not covered under the SECC data would also be provided electricity connections under the scheme by paying Rs 500.

Note:



- **Expected Outcomes:**
  - Environmental upgradation by substitution of Kerosene for lighting purposes.
  - Improvement in education services.
  - Better health services.
  - Enhanced connectivity through radio, television, mobiles, etc.
  - Increased economic activities and jobs.
  - Improved quality of life especially for women.
- **Related Initiatives:**
  - Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY).
  - **PM-KUSUM.**
  - **Integrated Power Development Scheme (IPDS).**
  - **Ujwal Discom Assurance Yojana (UDAY).**
  - GARV (Grameen Vidyutikaran) App.

## Tunnels in Jammu & Kashmir

### Why in News

The Union Minister for Road Transport and Highways will lay the foundation stone of various **National Highway (NH) Projects** and will review and inspect **Z-Morh and Zojila Tunnel** in the Union Territory of Jammu & Kashmir.

### Key Points

- **Shyama Prasad Mukherjee Tunnel:** The **Chenani-Nashri Tunnel** renamed as Shyama Prasad Mukherjee Tunnel.
  - It is **not only India's longest highway tunnel (9 km long)** but also **Asia's longest bi-directional highway tunnel.**
  - It is located in the lower Himalayan mountain range, between Udhampur and Ramban in Jammu & Kashmir.
- **Banihal Qazigund Tunnel:** It is the 8.5 km road tunnel at elevation of 1,790 m in the **Pir Panjal range** in the union territory of Jammu and Kashmir **connecting Banihal and Qazigund.**
- **Jawahar Tunnel:** It is also called **Banihal Tunnel or Banihal Pass.** The length of the tunnel is 2.85 km.
  - It is situated between Banihāl and Qazigund on NH 1A that has been renumbered NH 44.
  - The tunnel facilitates round-the-year road **connectivity between Srinagar and Jammu.**
- **Nandni Tunnels:** These tunnels are the series of four highway tunnels built under **Nandni wildlife sanctuary** on Jammu-Srinagar National Highway in Udhampur district.
  - At a combined length of 1.4 km, the tunnels have reduced the distance and travel time between Jammu and Srinagar.
- **Pir Panjal Railway Tunnel:** It is India's longest transportation railway tunnel measuring 11.2 km long.
  - The tunnel link, which is the only broad gauge mountain railway in India, stretches through the **Pir Panjal mountain range** between **Quazigund and Baramulla.**
  - The tunnel section is a part of the 202km **Udhampur – Srinagar – Baramulla rail link project** undertaken by the Northern Railways.
- **Z-Morh Tunnel:** It is an under construction tunnel, 20 km away from the Zojila Pass, on Srinagar-Kargil-Leh highway.
  - The 6.5 km long tunnel will connect **Gagangir directly to Sonamarg** in Kashmir.
- **Zojila Tunnel:** It is an under construction tunnel **located to the north-east of Srinagar, on the Srinagar- Leh section of the NH 1.**
  - The 14.2 km road tunnel between Baltal and Minamarg.
  - The Zojila Tunnel will be **Asia's longest road tunnel**, to be built at an **altitude of 11,578 m above sea level.**
  - It will ensure safer, all weather year round connectivity between Leh, Kargil and Srinagar.
- **Nilgrar Tunnels:**
  - The **Nilgrar-I** is a **twin tube tunnel** of 433 m length each.
  - The Nilgrar twin tunnel-II is of 1.95 Km length each.
  - Nilgrar-I and Nilgrar-II tunnels are part of the 18 Km long approach road to Zojila west portal.
    - Zojila tunnel will provide connectivity to Ladakh region Kargil, Drass and Leh.
- **Chattergala Tunnel:** It is an under construction road tunnel in Jammu and Kashmir.
  - The tunnel will be 6.8 km long and **will connect Kathua and Doda districts of Jammu and Kashmir** via basohli-bani through Chattergala.

Note:

## National Service Scheme Awards

### Why in News

Recently, the President of India conferred the **National Service Scheme (NSS) Awards** for 2019-20.

### Key Points

- **About:**
  - Under NSS Awards 2019-20, 42 awardees in different categories such as University or (+2) Councils, NSS Units and their programme officers and NSS volunteers were conferred with these awards.
- **Establishment:**
  - The NSS Awards were **instituted by the Ministry of Youth Affairs and Sports in 1993-94** on the occasion of the Silver Jubilee Year of National Service Scheme.
  - It **recognises and rewards outstanding contributions** towards voluntary community service made by universities or colleges, councils, senior secondary, NSS units and programme officers and NSS volunteers to further promote NSS in the country.
- **Objectives:**
  - To **encourage young NSS student volunteers** to develop their personality through community service.
  - To **encourage the Programme Officers** and the Programme Coordinators of NSS for catering the needs of NSS through the NSS volunteers.
  - To motivate **NSS Volunteers for continuing their selfless service** towards community work.
- **National Service Scheme:**
  - **About:**
    - NSS is a **Central Sector Scheme** that was launched in 1969 with the objective of developing the personality and character of the student youth through voluntary community service. The ideology of NSS is inspired by the ideals of **Mahatma Gandhi**.
    - Its Motto is **Not me but You**.
  - **NSS volunteers:**
    - They **work on issues of social relevance through regular and special camping activities** – including

literacy and education, health, family welfare and nutrition, environment conservation, social service programmes, programmes for the empowerment of women, programmes connected with economic development activities, rescue and relief during calamities, etc.

## GI Tag to Assam's Judima Wine Rice

### Why in News

**Judima**, a home-made rice wine of **Assam's Dimasa tribe** has become the **first traditional brew in all of northeast** to bag a **Geographical Indication (GI) tag**.

- This is the **second product from the hill districts of Karbi Anglong and Dima Hasao** to get GI tag.
- Earlier, **Manipur's most famous Hathei chilli and Tamenglong orange** were awarded the GI Tag.

### Geographical Indication (GI)

- GI is an indication **used to identify goods having special characteristics originating from a definite geographical territory**.
- It is **also a part of the World Trade Organisation's Trade-Related Aspects of Intellectual Property Rights (TRIPS)**.
- GI tag in India is governed by **Geographical Indications of Goods (Registration & Protection) Act, 1999**. It is issued by the **Geographical Indications Registry (Chennai)**.
- The registration of a geographical indication is **valid for a period of 10 years**.
- The GI protection in India **leads to recognition of the product in other countries thus boosting exports**.

### Key Points

- **About Judima:**
  - Judima is a **rice wine made from sticky rice (glutinous rice called Bora)**, which is steamed and mixed with traditional herbs called **Thembra (Acacia pennata)**.
  - The wine is a **specialty of the Dimasa tribe of the state (Assam)** and has a distinct sweet taste and takes around one week to prepare and it can be stored for years.

Note:



- There are around 14 recognized Plain Tribe communities, 15 Hills Tribe communities and 16 recognized Scheduled Caste communities in the state.
- The **Bodos are the largest group**, comprising almost half of the state's tribal population. Other major ST groups include **Mising, Karbi, Rabha, Kachari, Lalung and Dimasa**.

- **Other Recent GI Tagged Products from Assam:**
  - Kaji Nemu (a type of lemon) (2020)
  - Chokuwa Rice of Assam (2019)

## Surya Kiran XV

### Why in News

Recently, the armies of India and Nepal have started the **15<sup>th</sup> edition of joint military exercise 'Surya Kiran' at Pithoragarh in the Indian state of Uttarakhand.**



### Key Points

- The **biannual exercise**, which **takes place alternately in both countries**.
- The **main objective** of this exercise is to:
  - Establish **military relations in inaccessible mountainous areas** by the soldiers of both countries,
  - Provide **humanitarian assistance** under disaster management,
  - Get training in **anti-terrorist operations**,
  - Build **interoperability and sharing expertise** between the two countries.
- The **14<sup>th</sup> edition** of the exercise took place in **Saljhandi, Nepal in 2019**.

## Single Window System for Investors

### Why in News

The **Ministry of Commerce and Industry** has launched the **national single window system for investors and businesses** to improve Ease of Doing Business (EoDB).

- India was placed at **63<sup>rd</sup> position** in the World Bank's **ease of doing business report, 2020** out of 190 countries. Recently, the World Bank has decided to **discontinue 'Doing Business' reports**.

### Key Points

- **About:**
  - **DPIIT** along with **Invest India** initiated the process of developing the portal as a **National Single Window System (NSWS)**.
  - **DPIIT** (Department for Promotion of Industry and Internal Trade) comes under the Ministry of Commerce and Industry.
  - **Invest India** is the National Investment Promotion and Facilitation Agency of India and acts as the first point of reference for investors in India.
  - The portal offers a single dashboard, allowing businesses to **apply for clearances, track progress and respond to queries**.
  - It would become a **"one stop shop" for state and Central government compliances** and bring transparency, accountability and responsiveness in the ecosystem.
  - It will also offer a Know Your Approvals service to inform businesses of the details of all the approvals they need to obtain as well as a common registration form, document repository and e-communication module.
  - It will provide **strength to other schemes** e.g. **Make in India, Startup India, PLI scheme** etc.
- **Other Initiatives to improve EoDB:**
  - In the **Union Budget** speech 2020, the **Investment Clearance Cell (ICC)** was announced.
    - **ICC** will provide "end to end" facilitation and support to investors, including pre-investment advisory, provide information related to land banks and facilitate clearances at Centre and

Note:

State level. The cell was proposed to operate through an online digital portal.

- Amendments to **Insolvency and Bankruptcy Code (IBC)** and Decriminalisation under **Companies Act, 2013**.
- **Reduction of corporate tax from 30% to 25%** for mid-sized companies.
- The **Ministry of Corporate Affairs (MCA)**, has initiated the **MCA21 project**, which enables easy and secure access to MCA services in an assisted manner for corporate entities, professionals, and the general public.
  - It has also launched the **Simplified Proforma for Incorporating Company Electronically Plus (SPICE+)** web form.
- The **Central Board of Indirect Taxes & Customs (CBIC)** has launched **eSanchit (e-Storage and Computerized Handling of Indirect Tax documents)** for paperless processing, uploading of supporting documents and to facilitate the **trading across Borders**.
- **E-assessment scheme** for taxpayers.

## Microchip: Smallest Man-Made Flying Structure

### Why in News

Recently, Northwestern University (US) has created an **Electronic Microchip or Microflier** with the capability of flight. It is the **smallest-ever human-made flying structure**.

### Key Points

- **About:**
  - It is about the size of a **grain of sand** and does not have a motor or engine.
  - It **catches flight on the wind** — much like a **maple tree's propeller seed** — and spins like a helicopter through the air toward the ground.
- **Idea Behind the Design:**
  - The engineers optimised their design by studying maple trees and other types of **wind-dispersed seeds** and fashioned the micro flier such that when dropped from a height it would fall at a slow velocity in a controlled manner.



- This behaviour stabilizes its flight, **ensures dispersal over a broad area and increases the amount of time** it interacts with the air.
- They designed many different types of micro fliers, including one with three wings, resembling the wings on a **tristellateia seed**.
- **Significance:**
  - It can be packed with **ultra-miniaturised technology**, including sensors, power sources, antennas for wireless communication and embedded memory to store data.
  - **Miniaturization** is the trend to manufacture ever **smaller mechanical, optical and electronic products** and devices.
  - It is ideal for **monitoring Air Pollution and Airborne Disease**.

## SPIN Scheme: KVIC

### Why in News

Recently, the **Khadi and Village Industries Commission (KVIC)** launched the **SPIN (Strengthening the Potential of India) scheme** to make potters self-sustainable.

### KVIC

A **statutory body** established under the Khadi and Village Industries Commission Act, 1956. It functions under the **Ministry of Micro, Small and Medium Enterprises**. In 2017-18, it launched the **Honey Mission programme**. Recently, it launched a project named **Bamboo Oasis on Lands in Drought (BOLD)** from the village NichlaMandwa in Udaipur, Rajasthan.

### Key Points

- **SPIN Scheme:**
  - **About:**

Note:

- Under SPIN, KVIC will **facilitate potters to get easy loans** from banks that will help the potters to diversify their activities and enhance their income.

○ **Objective:**

- It is aimed at **sustainable development by creating local self-employment** which is aligned with the Prime Minister's commitment of "**Job to Every Hand**" (Har Hath Me Kaam).

○ **Features:**

- It is a no-subsidy program.
- KVIC facilitates potters to get bank loans under **Pradhan Mantri Shishu Mudra Yojana**.
- No financial burden on the exchequer.
- Beneficiaries can repay the loans in easy installments.

○ **Significance:**

- It will reduce their dependence on government subsidy and thus make potters self-reliant.

➤ **Other Related Schemes:**

- **Kumhar Sashaktikaran Yojana.**
- **Terracotta Grinder.**
- **Prime Minister's Employment Generation Programme.**

**Pradhan Mantri Mudra Yojana**

- It was launched by the government in **2015 for providing loans up to Rs. 10 lakh** to the non-corporate, non-farm small/micro-enterprises. Loans under this scheme are **collateral-free loans**.
- Under this, three products have been created, i.e. '**Shishu**', '**Kishore**' and '**Tarun**' as per the stage of growth and funding needs of the beneficiary micro unit.
  - **Shishu:** Covering loans up to Rs. 50,000.
  - **Kishore:** Covering loans above Rs. 50,000 and up to Rs. 5 lakh.
  - **Tarun:** Covering loans above Rs. 5 lakh and up to Rs. 10 lakh.

## **Killing of White-Sided Dolphins: Faroe Islands**

### **Why in News**

Recently, the **traditional annual killing of whales**

**and dolphins (grindadrap" hunt) in North Atlantic islands that belong to Denmark** has sparked controversy.

- **1,428 white-sided dolphins** were slaughtered at **Faroe Islands**.



### **Key Points**

➤ **White-Sided Dolphins:**

- **Scientific Name:** *Lagenorhynchus acutus*

○ **Characteristics:**

- Their **common name comes from the prominent white stripes** on their sides, which span from below the dorsal fin to their tail, where it turns into a yellow or amber color.
- Their **scientific name comes from** the Greek word lagenos (which means bottle), rhynchus (which means snout or nose), and acutus from Latin (which means sharp or pointed, referring to their sharply-pointed dorsal fins).

○ **Habitat:**

- The distribution of the Atlantic white-sided dolphin is the **cool temperate and subarctic waters of the north Atlantic Ocean** from southern Greenland to Massachusetts, and from the British Isles to western Norway.
- It has also been reported as far as the southern Barents Sea, the Baltic Sea, the Azores, and the Adriatic Sea.

○ **Conservation Status:**

- **IUCN:** Least Concern
- **CITES:** Appendix II

➤ **Dolphins in Indian Waters:**

- **Gangetic River Dolphin**
- **Irrawaddy Dolphins**

Note:

## Black Tigers

### Why in News

Recently, scientists have unraveled the mystery behind Odisha's 'Black Tigers' in **Similipal Tiger Reserve (STR)**

- The STR is the **only tiger habitat in the world with melanistic tigers**, which have broad black stripes running across their bodies and thicker than those seen on normal tigers.



### Key Points

- **About:**
  - Black Tigers are a **rare colour variant of the tiger** and are **not a distinct species** or geographic subspecies.
  - The coat colouration and patterning that make the wild cats appear dark boil down to a single **mutation** in the **Transmembrane Aminopeptidase Q (Taqpep) gene**.
  - The abnormally **dark or black coat** in such tigers is **termed pseudo melanistic** or false coloured.
  - If you pick any tiger from Similipal, the **chance that it carries the mutant gene is almost 60%**.
- **Factors for Occuring Black Colour:**
  - Due to **Geographic Isolation**, genetically related individuals have been mating with each other for many generations in Similipal, leading to **inbreeding**.
    - It should be noted that this has important implications for tiger conservation as such **isolated and inbred populations are prone to extinction** over even short periods of time.

### Similipal Tiger Reserve

- **About:**

- It was formally **designated a tiger reserve in 1956** and brought under **Project Tiger** in the year 1973. It was **declared a biosphere reserve** by the Government of India in **June, 1994**.
- It has been part of the **UNESCO World Network of Biosphere Reserve** since 2009.
- It is part of the Similipal-Kuldiha-Hadgarh Elephant Reserve popularly known as **Mayurbhanj Elephant Reserve**, which includes 3 protected areas i.e. Similipal Tiger Reserve, Hadagarh Wildlife sanctuary and Kuldiha wildlife sanctuary.

#### ➤ Location:

- It is situated in the **northern part of Odisha's Mayurbhanj district**. Geographically, it lies in the eastern end of the **eastern ghat**.

#### ➤ Wildlife:

- Similipal is home to a wide range of wild animals including tigers and **elephants**, besides **304 species of birds, 20 species of amphibians and 62 species of reptiles**.

#### ➤ Tribes:

- Two tribes, the **Erenga Kharias** and the **Mankirdias**, inhabit the reserve's forests and practise traditional agricultural activities (the collection of seeds and timber).

#### ➤ Vulnerability to Forest Fires:

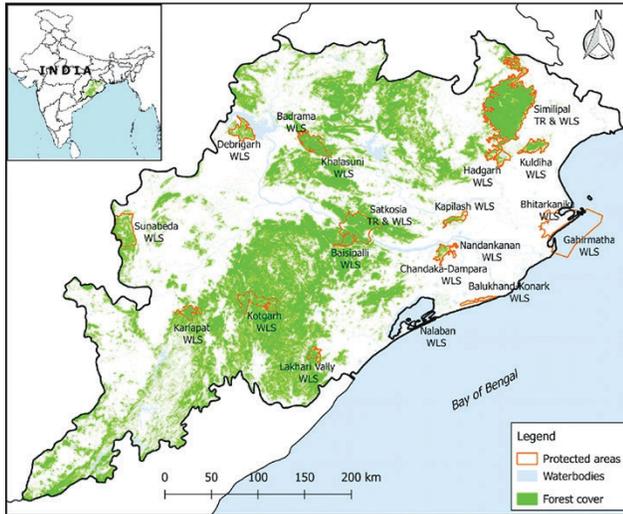
- **Natural:** Natural causes such as lightning or even soaring temperatures can sometimes result in **forest fires** here.
- **Man Made Factors:** Instances of poaching and hunting wherein the poachers set a small patch of forest on fire to divert the wild animals, can lead to forest fires.

#### ➤ Other Major Protected Areas in Odisha:

- **Bhitarkanika National Park.**
- **Badrama WLS.**
- **Chilika (Nalaban island) WLS.**
- **Hadgarh WLS**
- **Baisipalli WLS.**
- **Kotagarh WLS.**
- **Nandankanan WLS.**
- **Lakhari Valley WLS.**
- **Gahirmatha (Marine) WLS.**

Note:





## Toxic 3 Os Used in Sunscreen

### Why in News

Recently, a petition has been submitted by some activists to the **US Food and Drug Administration (FDA)** to reclassify **toxic 3 Os (Oxybenzone, Octinoxate and Octocrylene)** used in sunscreen.

- They demanded that chemicals be shifted to “**Not Generally Recognized As Safe & Effective**” (**GRASE Category II**).

### Key Points

- **Toxic 3 Os:**
  - Oxybenzone (OBZ), avobenzene (AVB), octocrylene (OCR) and octinoxate (OMC) are **UltraViolet (UV) filters** commonly added to chemical sunscreens.
  - These UV filters are known to widely contaminate the environment through a variety of **anthropogenic sources**, including sewage discharge.
- **Related Concerns:**
  - **The 3Os** are active ingredients present in more than **two-thirds of all sunscreens** and they pose a **threat to public health, marine life and coral reefs**.
  - **Octocrylene** in sun protection products **degrades into benzophenone**.
    - Benzophenone is a carcinogen that can also interfere with key hormones and reproductive organs.
  - They cause **human cell damage** that has been linked to cancer, disrupt hormones, have been

found in breast milk, blood and urine and are **known allergens**.

- Oxybenzone is **particularly toxic to corals** at concentrations as low as a few parts per trillion.
  - They wash off people’s bodies when they swim and contaminate through waste water runoff and cause ‘**zombie**’ coral which looks healthy but is unable to reproduce, **coral bleaching** as well as other issues.



## Earthshot Prize 2021

### Why in News

Recently, **two Indians (Vinisha and Vidyut)** among 15 finalists were selected for the first ever **Earthshot Prize 2021**, which will be held in London.

- A 14-year-old Tamil Nadu schoolgirl’s solar-powered ironing cart and a Delhi entrepreneur’s agricultural waste recycling concept named among finalists.

### Key Points

- **About:**
  - The prize was **launched by Britain’s Prince William in October 2020** in order to search for inspiring and innovative solutions to problems facing the planet.
  - The prize is inspired by US President John F Kennedy’s “**Moonshot**” programme, which resulted in the **US Apollo lunar launches** and the first man setting foot on the Moon in 1969.
- **Theme:**
  - It is centred around five “**Earthshots**”, simple but ambitious goals for the planet, which if **achieved by 2030 will improve life for all**, for generations to come.
- **Five Earthshots:**

Note:

- Protect and restore nature
- Clean our air
- Revive our oceans
- Build a waste-free world
- Fix our climate.

#### ➤ Awards Ceremony:

- It will take place in different cities across the world **each year between 2021 and 2030**, at which the **five winners for each of the Earthshots will be selected from 15 finalists**.

#### ➤ Benefits to Winners:

- After the awards, **each winner will receive a global platform and prestigious profile**, with their stories being showcased over the decade with the ambition that their solutions lead to mass adoption, replication and scaling.
  - The **1 million pound in prize money** will support environmental and conservation projects that are agreed with a winner.

#### ➤ Eligibility:

- Prizes can be **awarded to a wide range of individuals, teams or collaborations** such as scientists, activists, economists, community projects etc, which make a substantial contribution to achieving the Earthshots.

#### ➤ Prize Management:

- In addition to the **Prize Council**, the Earthshot Prize is supported by its Global Alliance, a network of organisations worldwide which share the ambition of the Prize to repair the planet.

## Exercise SCO Peaceful Mission 2021

### Why in News

The 6<sup>th</sup> edition of Exercise Peaceful Mission is being hosted by **Russia** in the Orenburg Region of South West Russia from 13<sup>th</sup> to 25<sup>th</sup> September 2021.

- **India** participated for the **first time in the 5<sup>th</sup> edition** of the Exercise (2018).

### Key Points

- It is a **Multilateral and Joint Counter Terrorism Exercise**, which is conducted **biennially** as part of military diplomacy between **Shanghai Cooperation Organisation (SCO)** member states.



- The SCO is an **economic and security bloc** in which India and Pakistan were admitted as full members in 2017. Its founding members included China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan.

- The **scope of the exercise includes** professional interaction, mutual understanding of drills & procedures, establishment of joint command & control structures and elimination of terrorist threats.
- The **aim** is to foster close relations between SCO member states and to enhance abilities of the military leaders to command multi-national military contingents.
- The **Indian military contingent** comprising an all arms combined force of 200 personnel including 38 personnel from the Indian Air Force is participating in the Exercise 2021.

## Tarballs

### Why in News

Recently, black oil-emanating balls also called **Tarballs** were seen, lying on the shore of Mumbai Beach.

### Key Points

- **About:**
  - Tarballs are dark-coloured, sticky balls of oil that **form when crude oil floats on the ocean surface**. They are formed by weathering of crude oil in marine environments.
  - Some of the balls are as big as a basketball while others are smaller globules. They are **transported** from the open sea to the shores **by sea currents and waves**.

Note:



- Most of the time, the presence of several tarballs **indicate an oil spill**. However, its annual occurrence on the west coast during the monsoon has led marine biologists and experts to demand an investigation in the matter.
- Oil-well blowouts, accidental and deliberate release of bilge and ballast water from ships, river runoff, discharges through municipal sewage and industrial effluents also **leads to the formation of tarballs**.
- Once tarballs hit the beaches, they **may be picked up by hand or by beach-cleaning machinery**.
- **Concerns:**
  - Tarballs that travel towards the coast **can get stuck to the fishing nets** installed in the sea, making it difficult for fishermen to clean.
  - In addition, it **could affect marine life**, especially filter feeders like clams and oysters.
  - Tarballs are **difficult to break down**, and can therefore travel for hundreds of miles in the sea. **Tarball pollution** is a major concern to the global marine ecosystem.
  - **Food retrieved from the coastal waters** including fish and other sea food **might also get contaminated** and become a part of the larger food chain harming the health of people.

## AUKUS Grouping

### Why in News

Recently, the US has announced a **new trilateral security partnership for the Indo-Pacific, between Australia, the UK and the US (AUKUS)**.

- The major highlight of this arrangement is the **sharing of US nuclear submarine technology to Australia**.

### Key Points

- **Focusing on Indo-Pacific:** The security grouping AUKUS will focus on advancing strategic interests in the Indo-Pacific region.
  - Though the US has explicitly denied that the grouping is targeted against China, its Indo-pacific orientation makes it an alliance against China's assertive actions in the **South China Sea**.
  - The three countries alongside Canada and New Zealand already share extensive intelligence through the **Five Eyes alliance**.
- **Transferring Nuclear Submarines to Australia:** As part of this initiative, Australia will acquire nuclear-powered submarines with help from the UK and the US.
  - This step is significant because the **US has only shared nuclear submarine technology once before, and it started in 1958 with Great Britain**.
  - Nuclear submarines that are **quieter** than their conventional counterparts but also more capable of being **deployed for longer periods and needing to surface less frequently**.
  - Alongside India's stated intent to acquire more nuclear-powered submarines, it will amount to a step-change increase in the **Quad's undersea and anti-submarine warfare capabilities**.
    - Quad is a grouping of India, USA, Australia and Japan.
  - **Australia is now set to join an elite group of only six countries** – India, the US, the UK, France, Russia and China – that operate nuclear-powered submarines. It will also be the **only country to have such submarines without having a civilian nuclear power industry**.

### Five Eyes Alliance

- The Five Eyes alliance is an **intelligence-sharing arrangement** between five English-speaking democracies: **the US, UK, Canada, Australia and New Zealand**.
- The alliance was created during the **Cold War (1946-1991)** that was fought between the United States and the Soviet Union, as well as their respective allies.
- The alliance was needed to share sensitive information regarding their adversaries on all possible fronts available.
- It is often described as the **world's most successful intelligence alliance**.

Note:

- **Multi-Sectoral Cooperation:** AUKUS will also involve a new architecture of meetings and engagements between the three countries, as well as cooperation across **emerging technologies (applied AI, quantum technologies)** and undersea capabilities).

## Mammoth Cave: US

### Why in News

Recently, the **official length of Mammoth Cave has been extended to 420 miles.**



### Key Points

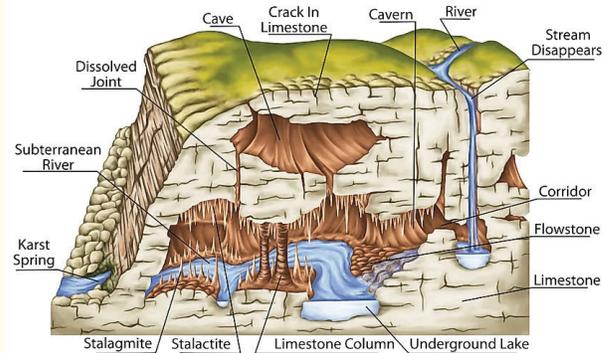
- The **additional mileage (8 miles)** was mapped and **documented by the Cave Research Foundation.**
- **Mammoth Cave National Park**, located in the state of **Kentucky (US)**, has the **world's largest network of natural caves and underground passageways**, which are characteristic **examples of limestone formations (karst topography).**
  - It is a **World Heritage Site** (designated in 1981).
  - It became an **International Biosphere Reserve in 1990.**

#### Karst Topography

- It is a **type of landscape where the dissolving of the bedrock has created sinkholes, sinking streams, caves, springs, and other characteristic features.**
- Karst is **associated with soluble rock types** such as limestone, marble, and gypsum.
- In general, a typical karst landscape **forms** when much of the water falling on the surface interacts

with and enters the subsurface through cracks, fractures, and holes that have been dissolved into the bedrock.

- After traveling underground, sometimes for long distances, this water is then discharged from springs, many of which are cave entrances.



## Free Education to 112 Aspirational Districts

### Why in News

Recently, the **NITI Aayog** launched an initiative with **BYJU'S** (an edutech giant) to provide **free access to tech-driven learning programmes to children from India's 112 aspirational districts.**

### Key Points

- **Students of Classes 6-12** in government schools across **112 'Aspirational Districts (AD)'** will get free access to the company's **"premium learning resources"**.
  - ADs are the districts which are affected by poor socio-economic indicators. They are aspirational in the context, that **improvement in these districts can lead to the overall improvement in human development** in India.
- BYJU'S will also provide **"free" coaching classes to over 3,000 "meritorious" students of Classes 11 and 12**, offered by Aakash Institute, for engineering and medical entrance examinations.
- It aims to **make the supplemental learning resources available to children** in the government schools in the Aspirational Districts on a pro-bono basis (without charge or very less fees).
- It is also aimed to **improve the online education system** in India and mitigate the digital divide in education.

Note:

## Delhi-Mumbai Expressway: World's Longest

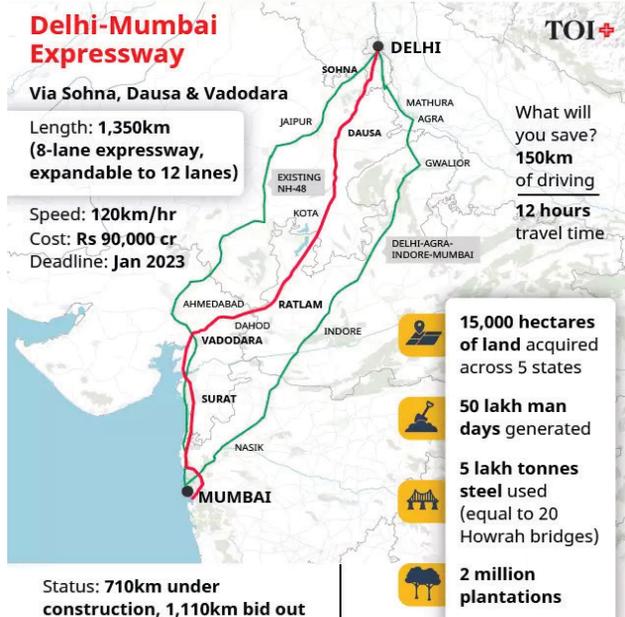
### Why in News

Recently, the Union Minister for Road Transport and Highways concluded the two-day review of the work progress on the eight-lane **Delhi-Mumbai Expressway**.

- It will be the **world's longest highway** once completed. It is expected to be completed by **March 2023**.

### Key Points

- **About:**
  - It is a **1,380-km** eight-lane expressway that can be **expanded to a 12-lane expressway** depending on the volume of traffic.
  - It will start from **Haryana's Sohna** and will end around **Mira Bhayander near Mumbai**.



- DND Flyway to Sohna (60km): Bid out, work to start by May 15
- Sohna to Sawaimadhopur: Construction underway
- All stretches bid out except Dahod to Godhra (150km), Surat to Valsad (60km) & SPUR to JNPT (80km)

### Special Features:

- It will have **wayside amenities** – resorts, restaurants, food courts, fuel stations, facilities for truckers, logistics parks.

- A **helicopter ambulance service** for accident victims and a heliport, which will use drone services for business as well.
- The expressway is the **first in Asia and only the second in the world to feature animal overpasses** to facilitate unrestricted movement of wildlife.
  - It will also include two iconic 8-lane tunnels, one tunneling through **Mukundra sanctuary, Rajasthan** and the second will pass through the **Matheran eco-sensitive zone, Maharashtra**.

### Significance:

- It will **improve connectivity** to economic hubs like Jaipur, Kishangarh, Ajmer, Kota, Chittorgarh, Udaipur, Bhopal, Ujjain, Indore, Ahmedabad, Vadodara and Surat.
- It will result in **annual fuel savings of more than 320 million litres and reduce CO<sub>2</sub> emissions**. The project has also **created employment for thousands**.

## Sea Cucumber

### Why in News

Recently, the **Indian Coast Guard (ICG)** has seized two tonnes of sea cucumber, a banned marine species, in the **Gulf of Mannar** and Palk Bay areas in Tamil Nadu.



### Key Points

#### About:

- Sea cucumbers are marine **invertebrates that live on the seafloor** found generally in **tropical regions**. They're named for their unusual oblong shape that **resembles a fat cucumber**.
- There are about 1,250 species of sea cucumber, all of which belong to the **taxonomic class Holothuroidea**.

Note:

- This class falls under the **Echinodermata phylum**, which also includes many other well-known marine invertebrates, such as sea stars, sea urchins and sand dollars.



- They are **crucial to maintain the balance of ocean habitats**.
- **Significance:**
  - They are an integral part of the **coral ecosystem** as **one of the main by-products** of the sea cucumbers digestion of sand is calcium carbonate and this is essential for the survival of the coral reefs.
  - They **act like garbage collectors of the ocean world**, and they recycle nutrients, thus playing an important role in keeping coral reefs in good condition.
- **Threats:**
  - Illegal Trading and smuggling since the species is high in demand across south-east Asia, mainly China, for food and traditional medicine.
- **Protection:**
  - **IUCN Red List:** Brown Sea Cucumber (Endangered), Blackspotted Sea Cucumber (Least Concern), Blue Sea Cucumber (Data Deficient), etc.
  - **Wildlife Protection Act, 1972:** Schedule I.
- **Conservation Efforts:**
  - In 2020, the **Lakshadweep Islands administration** created the world's first conservation area - 239 sq. km - for sea cucumbers.

## GI Tagged Feni: Goa

### **Why in News**

Recently, the Goa government's Feni Policy 2021 has paved the way to take the **GI** (Geographical Indication)

Certified **Goan Cashew Feni** forward at par with other international Liquors such as **Mexico's tequila, Japanese Sake** and **Russia's Vodka**.

- The Goa government in 2016 classified Feni as the **Heritage Spirit of Goa**.

### **Key Points**

- **Goan Cashew Feni:**
  - It is the first liquor product in the country to obtain '**Heritage Drink**' status and got its GI certification in 2000. Only the cashew feni has been **GI-tagged**.
  - Feni is a brew made from **coconut or cashew fruits** and is synonymous with the **Goan ethos and identity**.
  - Feni was first manufactured in Goa in the 1600s, after the Portuguese imported the **cashew plant from Brazil to India**. There are currently 26 varieties of feni manufactured in Goa.
  - It is used in various cultural traditions, cuisines and is well known for its medicinal value also.
- **Other GI-Tags from Goa:**
  - Khola red chillies/Canacona Chillies, spicy Harmal Chillies, Myndoli Banana or Moira Banana, and traditional sweet dish Goan Khaje.
- **Geographical Indication (GI) Certification:**
  - **About:**
    - GI is an indication used to identify goods having special characteristics originating from a definite geographical territory.
      - It is used for **agricultural, natural and manufactured goods**.
    - The Geographical Indications of **Goods (Registration and Protection) Act, 1999** seeks to provide for the registration and better protection of geographical indications relating to goods in India.
    - It is also a part of the **World Trade Organisation's** Trade-Related Aspects of Intellectual Property Rights (TRIPS).
  - **Administered By:**
    - The Controller General of Patents, Designs and TradeMarks- who is the Registrar of Geographical Indications.
      - The Geographical Indications **Registry is located at Chennai**.

Note:

- **Validity of Registration:**
  - The registration of a geographical indication is valid for a period of 10 years.
  - It can be renewed from time to time for a **further period of 10 years** each.

## Fast and Secured Transmission of Electronic Records (FASTER) System

### **Why in News**

Recently, in a major reform, the **Supreme Court** has given the go-ahead to implement a system for electronic transmission of its orders.

- It will ensure effective implementation of **Article 21 (right to life)**.
- Earlier, the Chief Justice of India (CJI) launched an Artificial Intelligence (AI) based portal '**SUPACE**' in the judicial system aimed at assisting judges with legal research.

### **Key Points**

- **About:**
  - The system proposes **transmission of e-authenticated copies of interim orders, stay orders, bail orders and record of proceedings** to the duty-holders for compliance and due execution, through a **secured electronic communication channel**.
- **Need:**
  - There have been cases where the plight of jail inmates are **not released despite bail orders passed by this court** due to delay in communication of such orders.
  - So, it was needed to **utilise information and communication technology tools** for efficient transmission of court's orders.
- **Significance:**
  - **Ensure that undertrials are not made to wait for days on end** behind bars to be released because the certified hard copies of their bail orders took time to reach the prison.
    - Undertrials are the **people who are yet to be found guilty of the crimes** they have been accused of.

- **Prevent unnecessary arrests and custody of people** even after the court had already granted them its protection.
- **Communicate a stay on an execution ordered** by the final court on time.
- **Challenges:**
  - The **availability of internet connection in jails** across the nation as without this facility transmission of such orders to prisons will not be possible.

## National Mission on Cultural Mapping

### **Why in News**

Recently, the **National Mission on Cultural Mapping (NMCM)** has been handed over to the **Indira Gandhi National Centre for the Arts (IGNCA)**, which will start a trial run in **75 villages** in October 2021.

- IGNCA was established in 1987 as an autonomous institution under the **Ministry of Culture**, as a centre for research, academic pursuit and dissemination in the field of the arts.
- IGNCA aims to complete mapping in 5,000 villages by the end of financial year 2021-2022.

### **Key Points**

- **About:**
  - The **Ministry of Culture** had approved the NMCM in **2017** to build a **comprehensive database of artists, art forms and other resources** from organisations under the Ministry.
  - It is aimed at addressing the necessities of preserving the **threads of rich Indian Art and Cultural Heritage**, converting vast and widespread cultural canvas of India into an **objective Cultural Mapping** while creating a strong "**Cultural Vibrancy**" throughout the nation.
  - It encompasses **data mapping, demography building, formalising the processes** and bringing all cultural activities under one umbrella for better results.
  - The work on creating a **database for folk arts and mapping of heritage of villages** would be carried out over five years (From 2017).

Note:



- Volunteers from the **Nehru Yuva Kendra Sangathan**, the **National Service Scheme** and students of sociology and social work would be deputed to collect such data from villages.
- **Other Schemes Related to Art and Culture:**
  - **Kala Sanskriti Vikas Yojana.**
  - Scheme of Financial Assistance for Promotion of Art and Culture.
  - Scheme of Financial Assistance for Creation of Cultural Infrastructure.
  - **Scheme for Safeguarding the Intangible Cultural Heritage.**
  - **Ek Bharat Shreshtha Bharat.**

## Rajaji Tiger Reserve: Uttarakhand

### Why in News

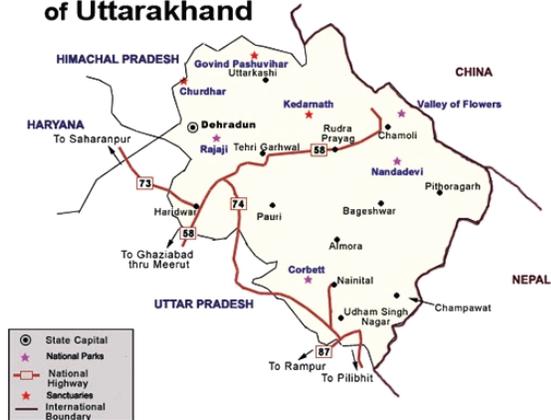
Recently, a Supreme Court-appointed committee has questioned relaxations given for the upgrade of a 4.7-km road (Laldhang-Chillarkhal road) in the buffer zone of Rajaji Tiger Reserve and sought replies from the Centre and Uttarakhand government.

- The relaxation for measurement of roads was approved by the **National Board for Wildlife (NBWL)**. NBWL is the apex agency to clear projects in and around protected areas.

### Key Points

- **Core and Buffer Area of a Tiger Reserve:**
  - According to the **Wild Life (Protection) Amendment**

### National Parks & Sanctuaries of Uttarakhand



**Act of 2006, a tiger reserve must have a core or critical habitat and a buffer zone peripheral to it.**

- While the **critical habitat** is supposed to be kept inviolate for conservation, a **buffer zone** is needed to ensure the integrity of the habitat with adequate space for dispersal of tigers. It is **aimed at promoting co-existence between wildlife and human activity.**
- **About Rajaji Tiger Reserve:**
  - **Location:** **Haridwar (Uttarakhand)**, along the foothills of the Shivalik range. It is part of **Rajaji National Park.**
  - **Background:** Rajaji National Park was established in the year 1983 after amalgamating three sanctuaries in the Uttarakhand i.e. Rajaji, Motichur and Chila.
    - It was **named after the famous freedom fighter C. Rajgopalachari**; popularly known as “Rajaji”.
    - It was declared a **Tiger Reserve** in 2015 as the 48<sup>th</sup> tiger reserve of the country.
  - **Salient Features:**
    - **Flora:** Broadleaved deciduous forests, riverine vegetation, scrubland, grasslands and pine forests form the range of flora in this park.
      - **Sal (*Shorea robusta*)** is the characteristic dominant tree species.
    - **Fauna:** The reserve is home to more than 50 species of mammals including tiger, elephant, leopard, Himalayan black bear, sloth bear, jackal, hyena, spotted deer, sambhar, barking deer, nilgai, monkeys and over 300 species of birds.
    - **Rivers:** The **Ganga and Song rivers** flow through this.
- **Other Protected Areas in Uttarakhand:**
  - **Jim Corbett National Park** (first National Park of India).
  - Valley of Flowers National Park and Nanda Devi National Park which together are a **UNESCO World Heritage Site.**
  - Govind Pashu Vihar National Park and Sanctuary.
  - **Gangotri National Park.**
  - Nandhaur Wildlife Sanctuary.

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## Elder Line: Toll-Free Number for Elderly

### Why in News

Recently, the **Ministry of Social Justice and Empowerment** launched the **Elder Line**, the first Pan-India toll-free helpline number (14567) for **Senior Citizens**, ahead of **International Day of Older Persons**, which is observed on 1<sup>st</sup> October every Year.

- Earlier **SAGE (Seniorcare Aging Growth Engine) initiative** was launched.

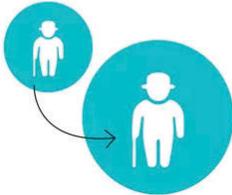
### 300M ELDERLY BY 2050

30 years from now, the elderly population in India is expected to triple from **104 million** in 2011 to **300 million** in 2050

Elderly population in **India (134m)** in 2020 is fast reaching the current size of population of **Mexico (130m)** or **Russia (143m)**

The 2050 population of elderly will be close to the population of the **US (326m)** in 2018) today

India's **12 million** population of 80+ is equal to the total population of countries such as Belgium, Greece, or Cuba



### Key Points

- **About:**
  - It provides **information, guidance, emotional support** - particularly on pension, medical and legal issues - besides immediate assistance in cases of abuse.
  - It is devised **to provide all senior citizens, or their well-wishers, with ONE platform** across the country **to connect and share their concerns** and get information and guidance on problems that they face on a day-to-day basis.
- **Need:**
  - According to the **Longitudinal Ageing Study of India**, India will have over 319 million elderly by 2050 compared to the 120 million now.
  - The senior citizen population faces several challenges such as mental, financial, emotional, physical, and legal.
  - The **Covid-19 pandemic** has aggravated the situation of senior citizens.

- **Other Initiatives Related to Elderly:**
  - **Integrated Programme for Older Persons (IPOP).**
  - **Rashtriya Vayoshri Yojana (RVY).**
  - **Pradhan Mantri Vaya Vandana Yojana (PMVVY).**
  - **Vayoshreshtha Samman.**
  - **Maintenance and Welfare of Parents and Senior Citizens (MWPC) Act, 2007.**

### Ageing

- Ageing is a continuous, irreversible, universal process, which starts from conception till the death of an individual.
- However, the age at which one's productive contribution declines and one tends to be economically dependent can probably be treated as the onset of the aged stage of life.
- The **National Elderly Policy** defines people in the **60+ age group** as elderly.

## Cyclone Gulab

### Why in News

Recently, **Cyclone Gulab** made landfall on India's east coast and weakened into a depression.

- Another cyclone--**Shaheen**—may form over the Arabian Sea from the remnant of cyclone Gulab.

### Key Points

- **Named By:**
  - Gulab was a **tropical cyclone** and was named by **Pakistan**. It affected the coasts of south Odisha north Andhra Pradesh.
    - According to **WMO (World Meteorological Organization)** guidelines, countries in every region are supposed to give names for cyclones.
    - The **North Indian Ocean Region** covers tropical cyclones formed over **Bay of Bengal and Arabian Sea**.
    - The **13 members**, which come under the region, are Bangladesh, India, Maldives, Myanmar, Oman, Pakistan, Sri Lanka, Thailand, Iran, Qatar, Saudi Arabia, the UAE and Yemen.
    - **Indian Meteorological Department (IMD)**, one of the six **Regional Specialised Meteorological Centres (RSMC)** in the world, is mandated to

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issue advisories and name tropical cyclones in the north Indian Ocean Region.

- It is an agency of the **Ministry of Earth Sciences**.

➤ **Occurrence:**

- India has a **bi-annual cyclone season** that occurs between March to May and October to December. But **on rare occasions, cyclones do occur in June and September** months.
  - Cyclone Gulab became the **third cyclone of the 21<sup>st</sup> century** to make landfall over the **east coast in September**, after tropical cyclone **Daye in 2018** and **Pyarr in 2005**.
- Typically, tropical cyclones in the North Indian Ocean region (Bay of Bengal and Arabian Sea) develop during the **pre-monsoon** (April to June) and **post-monsoon** (October to December) periods.

- May-June and October-November are known to **produce cyclones of severe intensity** that affect the Indian coasts.

➤ **Classification:**

- The IMD classifies cyclones on the **basis of the Maximum Sustained Surface Wind Speed (MSW)** they generate.
- The cyclones are classified as **severe** (MSW of 48-63 knots), **very severe** (MSW of 64-89 knots), **extremely severe** (MSW of 90-119 knots) and **super cyclonic storm** (MSW of 120 knots or more). One knot is equal to 1.8 kmph (kilometers per hour).
- Cyclone Gulab Falls into the **severe category** with maximum speed of 95 km/hr.

➤ **Cyclones that Hit India in 2020-21: [Tauktae](#), [Yaas](#), [Nisarga](#), [Amphan](#).**



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**Key Points**

**Details**

Blank area for Key Points.

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**Summary**

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