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Current Affairs
(CONSOLIDATION)

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(PART – I)

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Polity and Governance

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Revised Subsidy for Electric Vehicles

Why in News

Recently, the central government has decided to **increase the subsidy by 50% on electric two-wheelers** under the **FAME-II (Faster Adoption and Manufacturing of Electric Vehicles) scheme** in view of the adoption of eco-friendly vehicles.

Key Points

➢ **New Modification:**
  ○ The Centre has made **a partial modification of the FAME-II**, including **increasing the demand incentive for electric two-wheelers to Rs. 15,000 per KWh** from an earlier uniform subsidy of Rs 10,000 per KWh for all EVs, including plug-in hybrids and strong hybrids except buses.

  ○ The government **has also capped incentives for electric two-wheelers at 40%** of the cost of vehicles, up from **20% earlier.**

➢ **Significance:**
  ○ It will **bring down the prices of electric two-wheelers nearer to the IC (internal combustion engine) vehicles** and remove one of the biggest blocks of the high sticker price of electric two-wheelers.

  ○ Together with the other important factors like **extremely low running cost, low maintenance and zero emission,** such price levels will surely spur a substantial +demand for electric two-wheelers.

➢ **FAME-II:**
  ○ **Background:**
    ● **FAME India** is a part of the **National Electric Mobility Mission (NEMM) Plan.** Main thrust of FAME is to encourage electric vehicles by providing subsidies.
      ■ NEMM intends to allow **hybrid and electric vehicles** to become the first choice for the

Note:

purchasers so that these vehicles can replace the conventional vehicles and thus **reduce liquid fuel consumption** in the country from the **automobile sector.**

- **Two Phases of the Scheme:**
  - **Phase I:** Started in 2015 and was completed on 31st March, 2019
  - **Phase II:** Started from April, 2019, will be completed by 31st March, 2022.
- The scheme **covers Hybrid & Electric technologies** like Mild Hybrid, Strong Hybrid, Plug in Hybrid & Battery Electric Vehicles.
- **Monitoring Authority:** Department of Heavy Industries, the **Ministry of Heavy Industries and Public Enterprises.**
- Fame India Scheme has **four focus areas:**
  - Technology development
  - Demand Creation
  - Pilot Projects
  - Charging Infrastructure
- Under this scheme, **demand incentives will be availed by buyers** (end users/consumers) upfront at the point of purchase and the same shall be reimbursed by the manufacturers from Department of Heavy Industries, on a monthly basis.

○ **Salient Features of FAME II:**

- Emphasis on **electrification of the public transportation** that includes shared transport.
- Aims to support, through subsidies, approximately 7000 e-Buses, 5 lakh e-3 Wheelers, 55000 e-4 Wheeler Passenger Cars and 10 lakh e-2 Wheelers.
- In the **3-Wheel (W) and 4-Wheel (W) segment** incentives will be applicable mainly to **vehicles used for public transport or registered for commercial purposes.**
- In the **2-Wheel (W) segment**, the focus will be on the **private vehicles.**
- To encourage advanced technologies, the **benefits of incentives will be extended to only those vehicles** which are fitted with advanced batteries like a **Lithium Ion battery** and other new technology batteries.
- Proposes for the **establishment of charging infrastructure**, whereby about 2700 charging stations will be established in metros, other million plus cities, smart cities and cities of Hilly states across the country so that there will be availability of at least one charging station in a grid of 3 km x 3 km.

- Establishment of **Charging stations are also proposed on major highways** connecting major city clusters.

➤ **Concerns:**

- The **adoption of electric vehicles depends on several factors**, including robust charging infrastructure, easy financing and adequate performance in real-world conditions. These **require considerable government intervention and planning**, especially with the sector in its nascent stages.
- E-rickshaw drivers also **depend on unsafe, sometimes illegal, sources of power to charge their vehicles.** Charging is done in unsafe conditions, which poses a danger to both the driver and the commuter.

National AI Portal

Why in News

The **'National AI Portal'**, celebrated its **first anniversary on 28th May, 2021**.

Key Points

➤ **About the National AI Portal:**

- It is **a joint initiative by the Ministry of Electronics and IT (MeitY), National e-Governance Division (NeGD) and NASSCOM**.
  - **NeGD:** In **2009**, NeGD was created as **an Independent Business Division under the Digital India Corporation** (a not-for-profit company set up by MeitY).
  - **NASSCOM:** A **not-for-profit industry association**, is the **apex body for the IT and IT enabled products and services sector** in India.
- It serves as **a central hub for Artificial Intelligence (AI) related news, learning, articles, events and activities etc.,** in India and beyond.

➤ **About Artificial Intelligence (AI):**

- It describes the **action of machines accomplishing tasks** that have historically required human intelligence.

Note:

○ It includes technologies like **machine learning, pattern recognition, big data, neural networks, self algorithms etc.**

○ AI involves complex things such as **feeding a particular data into the machine and making it react as per the different situations.**

○ AI is being **used across different industries** including finance and healthcare.

○ As per a report by PwC, India reported **a 45% increase in the use of AI,** the highest among all countries, following the outbreak of the virus.

➢ **Recent Examples of Use of AI in India:**

○ **For the Covid-19 Response:** An **AI-enabled Chatbot** was used by **MyGov** for ensuring communications.

○ **In Judicial System**: An AI based **portal 'SUPACE'** is aimed at assisting judges with legal research.

○ **In Agriculture:** ICRISAT has developed an **AI-power sowing app**, which utilises weather models and data on local crop yield and rainfall to more accurately predict and advise local farmers on when they should plant their seeds.

○ **In Disaster Management:** An **AI-based flood forecasting model** that has been i**mplemented in Bihar** is now being expanded to cover the whole of India to ensure that around 200 million people get alerts and warnings 48 hours earlier about impending floods.

○ **In Banking & Financial Services Industry:** Few banks in India have adopted AI **to increase digitisation to improve customer experience and use algorithms in risk management** (for example, fraud detection).

➢ **Initiatives Taken to Boost Use of AI:**

○ The **National Strategy for Artificial Intelligence** (NITI Aayog, June 2018) which is focused on inclusive AI (AI for all), and the **New Education Policy** (NEP, 2020) which addresses the need to inculcate AI in the curriculum are the right strategic steps to encourage core and applied research.

○ The **Ministry of Tribal Affairs (MTA)** has inked **a MoU with Microsoft** to support the **digital transformation of schools such as Eklavya Model Residential Schools (EMRS)** and Ashram Schools, among others under the Ministry.

○ **US India Artificial Intelligence (USIAI) initiative** has been launched to scale up the science and technology relationship between India and the United States.

○ In 2020, India joined the **'Global Partnership on Artificial Intelligence (GPAI)'** as a founding member to support the responsible and human-centric development and use of AI.

○ **'RAISE 2020 - Responsible AI for Social Empowerment 2020'**, a mega virtual summit, was jointly organised by the NITI Aayog and the MeitY.

○ The larger aim of the program **"Responsible AI for Youth"** is to provide an equal opportunity to all Indian youths - in urban, rural and remote corners of India - to become human-centric designers who can create real AI solutions to solve economic and social impact issues of India.

➢ **Barriers to Adoption of AI:**

○ **Limited understanding of AI:** Many Indian companies may have not yet understood the full benefits of leveraging AI in their companies.

○ **Low Investments and Less Evolved Startup Ecosystem:** Startup/investment funding ecosystem in India is yet to scale up in terms of AI startups and service providers.

○ **Limited Availability of AI Trained Talent:** There is limited infrastructure to 'democratise' and scale-up important AI skills such as deep learning and neural networks.

Beed Model of Pradhan Mantri Fasal Bima Yojana

Why in News

Recently, the Maharashtra Government asked the Prime Minister for state-wide implementation of the '**Beed model' of the crop insurance scheme Pradhan Mantri Fasal Bima Yojna (PMFBY).**

Key Points

➢ **About Beed Model:**

○ Beed is **a district of Maharashtra** located in the **drought-prone** Marathwada region.

○ **80-110 Formula:** This model is also called 80-110 Formula.

● Under this plan, the **insurer's potential losses are restricted.**

● The insurance firm **does not have to entertain claims above 110% of the gross premium.**

Note:

The **state government has to bear** the cost of compensation **above 110%** of the premium collected to insulate the insurer from losses **(bridge amount).**

- However, **if the compensation is less than the premium collected**, the **insurance company would keep 20% of** the amount as handling charges and **reimburse the rest to the state government** (premium surplus).

➢ **Reason for Implementing this Model:**
  ○ **Benefits to States:**
    - **Another Source of Fund:** In most years, the **claims-to-premium ratio is low**. In the Beed model, **the profit of the insurance company is expected to reduce** and the **state government would access another source of funds.**
    - **Reduce the Burden of Financing PMFBY:** The reimbursed amount can **lead to lower budgetary provision for PMFBY by the state** for the following year, or **help in financing the paying the bridge amount in case of a year of crop loss.**
  ○ **Flaws in PMFBY:**
    - **Fiscally-stressed states** have over the years **dissented to footing the premium bill** for the PMFBY, resulting in **insurers not honouring the farmers' claims on time.**
    - In 2020, **far-below-normal monsoon rainfalls** in central Maharashtra's Beed district **dissuaded insurers from covering farmers** in the district under the PMFBY for kharif 2020.

➢ **Challenges:**
  ○ Questions remain on **how the state government is going to raise the excess amount, and how the reimbursed amount would be administered.**
  ○ For **farmers**, this model **does not** seem to **have any direct benefit.**

Pradhan Mantri Fasal Bima Yojana

➢ **About:** PMFBY was **launched in 2016.**
  ○ It **provides a comprehensive insurance cover against failure of the crop** thus helping in **stabilising the income of the farmers.**
➢ **Scope:** All **food & oilseed crops and annual commercial/horticultural crops** for which past yield data is available.
➢ **Premium:** The prescribed premium is **2%** to be paid by farmers for **all Kharif** crops and **1.5% for all rabi** crops.

In the case of annual commercial and **horticultural** crops, the **premium is 5%.**
  ○ Premium cost **over and above the farmer share** is **equally subsidized by States and GoI.**
  ○ However, **GoI shared 90% of the premium subsidy for North Eastern States** to promote the uptake in the region.
➢ **PMFBY 2.0** (PMFBY was **revamped in the 2020 Kharif Season**):
  ○ **Completely Voluntary:** Prior to 2020, the scheme was optional for farmers who did not have loans pending, but mandatory for loanee farmers. Since 2020, it has been optional for all farmers.
  ○ **Limit to Central Subsidy:** The Cabinet decided to cap the Centre's premium subsidy under the scheme for premium rates up to **30% for unirrigated** areas/crops and **25% for irrigated** areas/crops.
  ○ **More Flexibility to States:** The government has given the flexibility to states/UTs to implement PMFBY and given them the option to select any number of additional risk covers/features.
  ○ **Investing in ICE Activities:** Insurance companies have to **spend 0.5%** of the total premium collected on **information, education and communication** (IEC) activities.
➢ **Use of Technology under PMFBY:**
  ○ **Crop Insurance App:**
    - Provides for easy enrollment of farmers.
    - Facilitate easier reporting of crop loss within 72 hours of occurrence of any event.
  ○ **Latest Technological Tools:** To assess crop losses, satellite imagery, remote-sensing technology, **drones, artificial intelligence** and machine learning are used.
  ○ **PMFBY Portal:** For integration of land records.
➢ **Performance of the Scheme:**
  ○ The Scheme **covers over 5.5 crore farmer applications** on average per year.
  ○ **Aadhar seeding** (linking Aadhaar through Internet banking portals) has helped in speedy claim settlement directly into the farmer accounts.
  ○ One notable example is mid-season adversity claims of nearly Rs. 30 crore in Rajasthan during Rabi 2019-20 **Locust attack.**

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QS World University Rankings 2022

Why in News

QS World University Rankings 2022 shows that **India's tally in the top 200 universities** hasn't changed for the **fifth straight year.**

QS World University Rankings

➢ Quacquarelli Symonds (QS) is a **leading global career and education network** for ambitious professionals looking to further their personal and professional development.

➢ QS **develops and successfully implements methods of comparative data collection and analysis** used to highlight institutions' strengths.

➢ The 'QS World University Rankings' is an **annual publication of university rankings** which comprises the global overall and subject rankings.

➢ **Six parameters** and their weightage for the evaluation:
  ○ Academic Reputation (40%)
  ○ Employer Reputation (10%)
  ○ Faculty/Student Ratio (20%)
  ○ Citations per faculty (20%)
  ○ International Faculty Ratio (5%)
  ○ International Student Ratio (5%)

Key Points

➢ **Global Rankings:**
  ○ **Top Ranks:**
    ● **Massachusetts Institute of Technology (MIT)** of the US is the top university for the **10th consecutive year.**
    ● The **University of Oxford (UK)** has risen to **second rank for the first time since 2006**, while Stanford University (US) and the University of Cambridge (UK) share third spot.
  ○ **Asian Institutions:**
    ● Singapore's **National University of Singapore** and **Nanyang Technological University**, and China's **Tsinghua University** and **Peking University**, are **the only Asian universities in the global top 20.**
➢ **Indian Institutions:**

Top varsities | JNU, featuring for the first time in the QS World Universities Ranking list, is among the top-600 in the world
= indicates shared ranking

2022 global rank	Name
177=	Indian Institute of Technology, Bombay
185	Indian Institute of Technology, Delhi
186=	Indian Institute of Science, Bengaluru
255=	Indian Institute of Technology, Madras
277=	Indian Institute of Technology, Kanpur
280	Indian Institute of Technology, Kharagpur
395=	Indian Institute of Technology, Guwahati
400=	Indian Institute of Technology, Roorkee
501-510 (ranking band)	University of Delhi
561-570 (ranking band)	Jawaharlal Nehru University, Delhi

○ Overall, there are **22 Indian institutions in the top 1,000 list** compared to **21 in the 2021 Rankings**, with the **Indian Institutes of Technology (IITs) in Guwahati, Kanpur, Kharagpur and Madras making major strides in rankings**.

○ **Jawaharlal Nehru University** has **entered the top 1,000 of the rankings for the first time**, as its new undergraduate engineering programme now makes it eligible for the rating.

○ **IIT Bombay** maintained its position as the **top Indian institution for the fourth consecutive year**, although it fell five places in the global rankings to the joint 177th position.

○ **IIT Delhi** (185 rank) overtook the **Indian Institute of Science**, Bangalore (186 rank), giving **India three institutions in the world's top 200**.
  ● **IISc** was also declared the **world's top research university by the indicator of most citations per faculty member,** when adjusted for faculty size.

➢ **India's Performance:**
  ○ Indian universities have **improved their performance on academic reputation metric and research impact**, but continue to **struggle on the teaching capacity metric**.
    ● No Indian university ranks among the top 250 for faculty-student ratio.
    ● **Poor performance on teaching capacity** is not because of any drop in hiring, but rather a**n**

Note:

increased student intake mandated by the government to implement reservations for **economically weaker sections.**

➢ **Concerns**:
   ○ **No Objective Methodology:**
      ● The rankings **do not accurately reflect the quality of education in India,** as they are largely dependent on international perception factors.
      ● Half of the score comes from reputation indicators which are **based on perception, rather than any objective methodology.**
   ○ **Manipulation**:
      ● It is being blamed that this year's improvement in scores was simply a **manipulation of numbers by the rankings agency, driven by commercial pressures**.

➢ **Related Indian Initiatives:**
   ○ **Institutions of Eminence (IoE) Scheme:**
      ● It is a government's scheme to provide the **regulatory architecture for setting up or upgrading of 20 Institutions** (10 from public sector and 10 from the private sector) as world-class teaching and research institutions called 'Institutions of Eminence'.
   ○ **National Education Policy, 2020:**
      ● It aims to introduce several changes in the Indian education system - from the school to college level and **make India a global knowledge superpower.**
   ○ **Impacting Research Innovation and Technology (IMPRINT):**
      ● It is a first-of-its-kind Pan-IIT and IISc joint initiative to **develop a new education policy and a roadmap for research to solve major engineering and technology challenges** that India must address and champion to enable, empower and embolden the nation for inclusive growth and self-reliance.
   ○ **Uchhatar Avishkar Yojana (UAY):**
      ● It was announced with a view to promote innovation of a higher order that directly impacts the needs of the Industry and thereby improves the competitive edge of Indian manufacturing.

Swachh Bharat Mission Grameen Phase-II

Why in News

Swachh Bharat Mission (Grameen) [SBM (G)] Phase-II is making steady progress amidst **Covid-19** with **1249 villages declared ODF(Open Defecation Free) Plus.**

➢ **SBM (G) Phase-II** was approved in **February 2020** by the **Ministry of Jal Shakti.**

➢ **ODF Plus** entails that ODF behaviours are sustained, and every village has access to solid and liquid waste management.

Key Points

➢ **About SBM(G) Phase-II:**
   ○ **About:** It emphasizes the sustainability of achievements under **phase I** and to provide adequate facilities for **Solid/Liquid & plastic Waste Management (SLWM)** in rural India.
   ○ **Implementation:** SBM (G) Phase-II will be implemented from **2020-21 to 2024-25** in a mission mode with a total outlay of Rs. **1,40,881 crores.**
   ○ **Funding Pattern and Norms:** The fund sharing pattern between Centre and States will be **90:10** for North-Eastern States and Himalayan States and UT of J&K; **60:40** for other States; and **100%** for other Union Territories.
      ● Funding Norms for **SLWM** have been rationalized and changed to per capita basis in place of the number of households.
   ○ **Monitoring:** The SLWM component of ODF Plus will be monitored on the basis of output-outcome indicators for 4 key areas:
      ● Plastic waste management,
      ● Biodegradable solid waste management (including animal waste management),
      ● Greywater (Household Wastewater) management
      ● Fecal sludge management.
   ○ **Significance:**
      ● It will continue to **generate employment and provide impetus to the rural economy** through construction of household toilets and community toilets, as well as infrastructure for SLWM such as compost pits, soak pits, waste stabilisation ponds, material recovery facilities etc.

Note:

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- It will also **help rural India effectively handle the challenge of solid and liquid waste management** and will help in substantial improvement in the health of the villagers in the country.

➤ **Swachh Bharat Mission (G) Phase-I:**
  ○ The **rural sanitation coverage** in the country at the time of launch of **SBM (G)** on 2ⁿᵈ October, 2014 was reported as **38.7%.**
  ○ More than 10 crore individual toilets have been constructed since the launch of the mission; as a result, rural areas in all the States have declared themselves ODF as on 2ⁿᵈ October, 2019.

➤ **Other Schemes as part of SBM:**
  ○ **GOBAR-DHAN (Galvanizing Organic Bio-Agro Resources) Scheme:** It was launched by the **Ministry of Jal Shakti in 2018.**
    - The scheme aims to augment income of farmers by converting biodegradable waste into **compressed biogas** (CBG).
  ○ **Individual Household Latrines (IHHL):** Under SBM, individuals get around 15 thousand for the construction of toilets.
  ○ **Swachh Vidyalaya Abhiyan:** The Ministry of Education launched Swachh Vidyalaya Programme under Swachh Bharat Mission with an objective to provide separate toilets for boys and girls in all government schools within one year.

I-Familia: Global Database to Identify Missing Persons

Why in News

Recently, the **Interpol** has launched **a new global database named "I-Familia" to identify missing persons through family DNA** and help the police solve cold cases in member countries.

Key Points

➤ **About I-Familia:**
  ○ The **first of its kind**, I-Familia is **a global database for identifying missing persons based on international DNA** (deoxyribonucleic acid) **kinship matching.**
  ○ The database **seeks to identify missing persons or unidentified human remains when direct comparison is not possible**, by **using DNA samples from family members** instead.

- **Family members must give their consent** for their data to be used for international searching.
  ○ It **builds on Interpol's long-standing success in direct DNA matching.**

➤ **Working:**
  ○ I-Familia has **three components:**
    - A **dedicated global database to host the DNA profiles provided by relatives**, held separately from any criminal data.
    - **DNA matching software** called Bonaparte.
    - **Interpretation guidelines**, produced by Interpol, to efficiently identify and report potential matches.
  ○ In the event of a match, **notifications are sent to the countries that supplied the DNA profile from the unidentified body and from the family** respectively.

➤ **Significance:**
  ○ There is **growing international concern about the number of missing persons and unidentified victims** around the world **due to increased international travel**, the prevalence of **organized crime and human trafficking,** the rise in **global migration, conflicts and natural disasters.**
  ○ All countries have unsolved missing persons investigations as well as human remains that **cannot be identified using their national systems alone.**

➤ **Direct DNA Matching vs Kinship DNA Matching:**
  ○ **A direct DNA sample** from the missing person, for example a prior medical sample or a personal item such as a toothbrush, can be compared to the DNA from an unidentified body or human remains to see if a match can be found. **This type of identification** has been carried out via the **Interpol DNA Database since 2004.**
  ○ **Biological relatives share a percentage of their DNA**, depending on their relationship. In the event that a DNA sample from the missing person cannot be obtained for direct matching, **DNA from close family members (parents, children, siblings) can also be compared.** This is where **I-Familia** is set to make a difference.

Interpol

➤ The **International Criminal Police Organization (Interpol)** is **an intergovernmental organization** that

Note:

helps **coordinate the police force of 194 member countries.**

➤ Each of the member countries hosts **an Interpol National Central Bureau (NCB).** This connects their national law enforcement with other countries and with the General Secretariat.

○ The **Central Bureau of Investigation (CBI)** is designated as the **National Central Bureau of India.**

➤ It is **headquartered in Lyon, France.**

➤ **Interpol Notices** are international requests for cooperation or alerts allowing police in member countries to share critical crime-related information.

New Pension Rules for Civil Servants

Why in News

Recently, the **Central Government has amended its pension rules** putting new restrictions on officials of intelligence and security organisations after retirement.

➤ The government has **amended Rule-8(3)(a) of the CCS (Central Civil Services) Pension Rules-1972.**

➤ The Centre has notified **Central Civil Services (Pension) Amendment Rules, 2020.**

Key Points

➤ **Background:**

○ The said rules were **first drafted in 1972** and have been **amended 47 times.**

○ In **2008**, **Rule 8** pertaining to **"pension subject to future good conduct"** was first **amended** by inserting the condition that **retired intelligence and security officials will not publish any material that affects the "sovereignty and integrity of India,** the

security, strategic, scientific or economic interests of the State, or relation with a foreign State or which would lead to incitement of an offence".

➤ **Amended Rule-8(3)(a):**

○ **Officials retired from** certain **intelligence or security establishments (included under 2nd schedule of RTI Act)** will **not be allowed to write anything about their organisation** without permission.

● The **Second Schedule** of the **Right to Information (RTI) Act 2005** covers **26 organisations** including the Intelligence Bureau, R&AW, **Directorate of Revenue Intelligence**, **CBI**, **NCB**, **BSF**, **CRPF**, **ITBP** and **CISF**.

○ Requires the **retired officials to sign an undertaking - Form 26 -** and **declare that without the prior approval of the competent authority they will not publish any information** related to the "domain of the organisation and obtained by virtue of my working in the said organisation".

○ The **amendment expands the scope** to include any information related to "domain of the organisation, any reference or information about any personnel and his designation, and expertise or knowledge gained by virtue of working in that organisation."

➤ **Purpose of the Amendment:**

○ The amendment was in process for around four years after the **Committee of Secretaries recommended it.**

○ The move was **prompted by concerns** arising out of the fact that some high-profile retired officers had written books on their tenure, and some of these had revealed information.

➤ **Implications:**

○ This amendment to Rule 8 means that **pension can be withheld or withdrawn if the pensioner disobeys the rules.**

○ This change in rules is l**ikely to impact retired officials of security and intelligence organisations who write in newspapers** and magazines or author books on their former organisations and experiences**.**

Rules Pertaining to Civil Servants

➤ **Rule 9 of CCS Pension Rules-1972 (Departmental Proceeding after Retirement):**

○ It says that if any government official has **committed any misconduct and retires**, he or she **may face**

departmental proceedings only until four years after the date of committing that misconduct.

➢ **Central Civil Services (Conduct) Rules, 1964:**
  ○ It puts **some restrictions on Government Employees while in Service.**
    ● **Rule 7:** It restricts government servants from resorting to or abetting any form of **strike or coercion.**
    ● **Rule 8:** It restricts them, except with government sanction, from **owning or participating in the editing or management of any newspaper** or other periodical publication or electronic media.
    ● **Rule 9:** It restricts a government servant from **making statements of fact or opinion** in writing or in a telecast or a broadcast "which has the effect of an **adverse criticism of any current or recent policy** or action of the Central Government or a State Government".
  ○ **Restriction on Political Activity while in Service:**
    ● The **Conduct Rules bars government servants** from being associated with any political party or organisation, and from taking part or assisting any political activity.
    ● An **amendment in 2014** said, "Every government employee shall at all times maintain political neutrality" and "commit himself to and uphold the supremacy of the Constitution and democratic values"

➢ **Rule 26, All India Services (Death-cum-Retirement Benefits Rules) 1958 (Employment after Retirement):**
  ○ It **restricts a pensioner from any commercial employment for one year** (until 2007 it was 2 years) after retirement, except with previous sanction of the central government.
  ○ **Non-compliance** can lead the central government declaring that the employee "shall not be entitled to the whole or such part of the pension and for such period as may be specified".

➢ **Joining Politics after Retirement:**
  ○ There is **no rule** to stop government servants from joining politics after their retirement.
  ○ In 2013, the **Election Commission** had written to the **DoPT** (Department of Personnel and Training) and **Law Ministry,** suggesting a **cooling-off period** for bureaucrats joining politics after retirement, but it was rejected.

● The Legislative Department of the Ministry of Law advised "that **any such restriction** (against officials joining politics or contesting polls) **may not stand the test of valid classification under Article 14** (equality before the law) **of the Constitution of India".**

Section 51 of the Disaster Management Act, 2005

Why in News

Recently, the **former Chief Secretary of West Bengal** was served **a show cause notice by the Home Ministry** under **Section 51 of the Disaster Management (DM) Act, 2005.**

Key Points

➢ **About the Show Cause Notice:**
  ○ The notice was issued **for failing to comply with the Centre's directions to attend the review meeting on Cyclone Yaas** chaired by the Prime Minister in Bengal's Kalaikunda.
    ● The Act is **violative of Section 51 (b) of the DM Act, 2005.**
  ○ Though the **DoPT (Department of Personnel and Training)** is the **cadre-controlling authority of Indian Administrative Service (IAS) officers,** the **show cause notice was served under provisions of the DM Act**, which is **under the purview of the Home Ministry.**

➢ **Section 51 (b) of the DM Act:**
  ○ The section prescribes **"punishment for obstruction"** for refusal to comply with any direction given by or on behalf of the Central government or the State government or the National Executive Committee or the State Executive Committee or the District Authority under the Act.
  ○ Anyone refusing to comply with orders is **liable for punishment** with **imprisonment up to one year**, or fine, or both. In case this refusal leads to **death of people**, the person liable shall be punished with **imprisonment up to two years.**
  ○ Section 51 of the Act has **two important reservations.**
    ● Under the Act, the action on the part of the person has to be **'without reasonable cause'**

Note:

and **'failure of an officer to perform the duty without due permission or lawful excuse'.**

➢ **Previous Use of Provisions of DM Act:**

○ In **April 2020,** the Home Ministry **made spitting in public a punishable offence.** The guidelines issued by the Ministry under the DM Act, which are binding on the states, also made "**wearing of face masks in public places mandatory**."

○ In **March 2020**, when thousands of migrants gathered at Anand Vihar railway station in Delhi due to the sudden announcement of the countrywide lockdown, **two Delhi government officers were served show cause notice** by the Centre under the DM Act for dereliction of duty.

➢ **About DM Act:**

○ The DM Act was passed by the government of India **in 2005** for the **efficient management of disasters** and other matters connected to it. However it came into force in **January 2006.**

○ It was **invoked for the first time in the country in the wake of the Covid-19 pandemic** in the year 2020.

● The **Centre, through the National Disaster Management Authority (NDMA) headed by the Prime Minister**, invoked the provisions of the Act to streamline the management of the pandemic, empowering District Magistrates to take decisions and centralise other decisions on supply of oxygen and movement of vehicles.

➢ **Main Features of DM Act 2005:**

○ **Nodal Agency:**

● The Act designates the **Ministry of Home Affairs** as the nodal ministry for steering the overall national disaster management.

○ **Institutional Structure:** It puts into place a systematic structure of institutions at the national, state and district levels.

○ **Finance:**

● It contains the provisions for financial mechanisms such as the creation of funds for emergency response, **National Disaster Response Fund** and similar funds at the state and district levels.

○ **Civil and Criminal Liabilities:**

● The Act also devotes several sections to various civil and criminal liabilities resulting from violation of provisions of the Act.

Horticulture Cluster Development Programme

Why in News

The **Ministry of Agriculture and Farmers Welfare** has launched the **Horticulture Cluster Development Programme (CDP)** in order to **promote the export of horticultural produce.**

➢ **Horticulture** is the branch of plant agriculture dealing with garden crops, generally fruits, vegetables, and ornamental plants.

Key Points

➢ **Cluster Development Programme (CDP):**

○ **About:**

● It is a **central sector programme** aimed at growing and developing identified horticulture clusters to make them globally competitive.

▪ **Horticulture cluster** is a regional/geographical concentration of targeted horticulture crops.

○ **Implementation:**

● It will be implemented by the **National Horticulture Board (NHB)** of the **Ministry of Agriculture and Farmers' Welfare.**

● In a **pilot phase**, the programme will be **implemented in 12 horticulture clusters out of the total 53 clusters** selected for the programme.

▪ These clusters will be implemented through **Cluster Development Agencies (CDAs)** which are appointed on the recommendations of the respective State/UT Government.

○ **Objectives:**

● To address all **major issues related** to the **Indian horticulture sector** including pre-production, production, post-harvest management, logistics, marketing and branding.

● To leverage **geographical specialisation** and promote integrated and market-led development of horticulture clusters.

● To converge with other initiatives of the Government such as the **Agriculture Infrastructure Fund.**

○ **Expected Benefit:**

● The programme will benefit about **10 lakh farmers** and is expected to attract **an investment**

Note:

of Rs. 10,000 crore when implemented in all the 53 clusters.
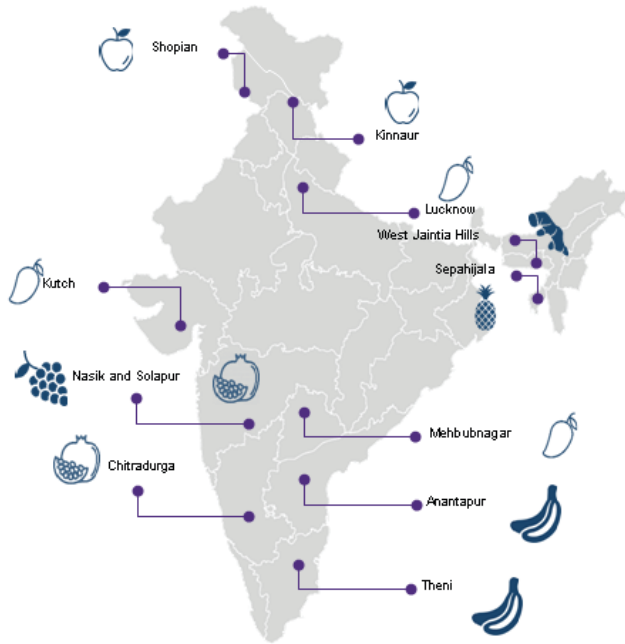
➢ **Horticulture Sector in India:**
- ○ **India is the second-largest producer of horticulture crops globally,** accounting for approximately 12% of the world's production of fruits and vegetables.
  - ● India is a leader in producing fruits like Mango, Banana, Pomegranate, Sapota, Acid Lime and Aonla.
- ○ In 2018-19, **Andhra Pradesh followed by Maharashtra and UP** were the **top states in fruit production.**
  - ● **West Bengal, Uttar Pradesh and Madhya Pradesh** were the **top States in vegetable production.**
- ○ The **area under horticulture crops increased to 25.5 million hectare in 2018-19**, which is 20% of the total area under foodgrain, and produced 314 million tonnes.
- ○ **Recent steps taken for this sector:**
  - ● The Ministry has provided an enhanced allocation of **Rs. 2250 Crore** for the year **2021-22** for **'Mission for Integrated Development of Horticulture' (MIDH).**
  - ● **MIDH** is a **Centrally Sponsored Scheme** for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo.

Section 304B of IPC: Dowry Deaths

Why in News

Recently, the **Supreme Court** (SC) has **widened the scope of section 304B of Indian Penal Code (IPC)** by indicating that **there is no straitjacket formula** to determine the cruelty against women.

Key Points

➢ **About Section 304B of IPC:**
- ○ According to Section 304B, to make out a case of dowry death, **a woman should have died of burns or other bodily injuries or "otherwise** than under normal circumstances" **within seven years of her marriage.**
- ○ She should **have suffered cruelty or harassment from her husband or in-laws "soon before her death"** in connection with demand for dowry.

➢ **Highlights of the Judgement:**
- ○ Section 304B of IPC **must be interpreted keeping in mind the legislative intent to curb the social evil** of bride burning and dowry demand.
- ○ The **court should use their discretion** to determine if the period between the cruelty or harassment and the death of the victim would come within the term **"soon before"**.
  - ● For such determination, an important factor is the establishment of a **"proximate and live link"** between the cruelty and the consequential death of the victim.
  - ● Over the years, **courts had interpreted the phrase 'soon before' in Section 304B as 'immediately before'.** This interpretation would make it necessary for a woman to have been harassed moments before she died.
- ○ Even the **spectrum of cruelty is quite varied**, as it can range from physical, verbal or even emotional. **No straitjacket formulae** can therefore be laid down to define what exact the phrase 'soon before' entails.
- ○ Further, the phrase "**otherwise than under normal circumstances**" in the section calls for a **liberal interpretation.**

Note:

- Section 304-B, IPC **does not take a pigeonhole approach** in categorising death as homicidal or suicidal or accidental.
  - ❍ Also, the **examination of the accused** about the incriminatory material against him **should be done in a fair manner.**
    - However, there is **a need to balance** other important considerations such as the **right to a speedy trial.**
- ➤ **Reports on Dowry Death:**
  - ❍ Dowry deaths **accounted for 40% to 50% homicides** in the country for almost a decade from 1999 to 2018.
  - ❍ In 2019 alone, 7,115 cases of dowry death were registered under Section 304B of the Indian Penal Code.

Dowry

- ➤ The term **dowry has not been defined in IPC** but in **Dowry Prohibition Act, 1961.** According to the act, it has been defined **as any property or valuable security given or agreed** to be given directly or indirectly:
  - ❍ By one party to a marriage to the other party to a marriage or
  - ❍ By the parents of either party to a marriage or by any other person to either party to the marriage or any other person at or before or any time after (on three occasions) the marriage in connection with the marriage of the said parties.
- ➤ However, **customary payments** as are prevalent in different societies, such as at the time of birth of child etc, **are not covered** within dowry.
- ➤ **Giving & taking dowry both** are offences.
- ➤ In addition to the Dowry Prohibition Act, 1961, the **laws have been made more stringent** namely,
  - ❍ **Section 304B (dowry death)** and **Section 498A (cruelty by husband or his relatives)** have been integrated into the **Indian Penal Code (IPC).**
  - ❍ **Section 113 B (presumption as to dowry death)** has been made part of the **Indian Evidence Act (I.E.A.)** so as to eradicate or at-least lower down this heinous act of dowry system and related deaths.

BIS SDO Recognition Scheme

Why in News

Recently, the **Research Design & Standards Organization (RDSO)** of Indian Railways has become the **first Institution** to be declared a **Standard Developing Organization (SDO)** under **One Nation One Standard mission** of **Bureau of Indian Standards (BIS).**

- ➤ RDSO took the initiative to seek recognition as a Standard Developing Organization (SDO) under the **BIS SDO Recognition Scheme.**

Research Designs & Standards Organization

- ➤ It is the **sole R&D Wing of the Ministry of Railways**, is one of India's leading Standard formulating bodies undertaking standardization work for the railway sector situated in **Lucknow, Uttar Pradesh.**

Key Points

- ➤ **About**:
  - ❍ The idea of **One Nation One Standard Mission was first conceived in 2019**, it was envisioned **on the line of one nation, one ration card scheme** in order to ensure quality products in the country.
  - ❍ To attain the One Nation One Standard vision of the Government of India, BIS launched a scheme which provides for **Recognition of SDO.**
    - The recognition is **valid for 3 years** and will require renewal after completion of the validity period.
- ➤ **Objectives:**
  - ❍ **Aggregating and integrating the existing capabilities** and dedicated domain specific expertise available with various organizations in the country engaged in standards development in their specific sectors.
    - The idea is **to develop one template of standard for one given product instead of having multiple agencies set it.**
  - ❍ Enable **convergence of all standard development activities** in the country resulting in **One National Standard for One Subject.**
    - This will help in **establishing in the long run Brand India**. This will also ensure **market relevance for the Indian standards.**
- ➤ **Other Initiatives of BIS:**
  - ❍ **BIS-Care App:**

- With this app, consumers can **check the authenticity** of the **ISI-marked and hallmarked products** and lodge complaints.
  ○ **Covid-19 Standards:**
    - BIS developed **Covid-19** standards for Cover-all and Ventilators and issued norms for grant of **licence for N95 Masks, surgical masks and eye protectors** which has resulted in an increased production of ISI-marked **Personal Protection Equipment (PPE) items.**
  ○ **Quality Control Orders:**
    - BIS has been playing an important role in the **formulation of Quality Control Orders (QCO) to make the standards mandatory.**
  ○ **Portal for Consumer Engagement:**
    - BIS is developing a portal on Consumer Engagement, which **will facilitate the online registration of Consumer Groups, submission of proposals and approval thereof and complaint management.**

Bureau of Indian Standards

➢ It has been established for the harmonious **development of the activities of standardization, marking and quality certification of goods** and for matters connected therewith or incidental thereto.

➢ It was **established by the Bureau of Indian Standards Act, 1986** which came into effect in December 1986. It works under the aegis of the **Ministry of Consumer Affairs, Food & Public Distribution.**

➢ A new **Bureau of Indian standard (BIS) Act 2016** has been brought into force with effect from October 2017.
  ○ The Act establishes the **Bureau of Indian Standards (BIS) as the National Standards Body of India.**

Time to Define Limits of Sedition:SC

Why in News

Recently, the **Supreme Court (SC)** while protecting two Telugu (language) news channels from coercive action by the Andhra Pradesh government noted that **it is time to define the limits of sedition**.

➢ Presently, the **Committee for Reforms in Criminal Laws** constituted by the Union Home Ministry to suggest reforms to the British-era **Indian Penal Code (IPC)**, is **attempting for the first time to define Hate speech.**

Key Points

➢ **About the Case:**
  ○ Channels blamed the state government for **suppressing the right to freedom of speech** by **obstructing the media** coverage and reportage of the **Covid-19 pandemic** in the State.
    - **Article 19** guarantees freedom of expressing one's own views, opinions, beliefs and convictions freely by word of mouth, writing, printing, picturing or in any other manner.
  ○ Channels urged the SC to **initiate contempt proceedings against the senior officials of the State government** for violating its previous order.
    - The previous order of SC **directed the state government to immediately cease any direct and indirect threats** of prosecution and arrest to citizens, who air their grievances.

➢ **SC's Ruling:**
  ○ **Indiscriminate Use of Sedition:**
    - SC flagged **indiscriminate use of the sedition law against critics**, journalists, social media users, activists and citizens for airing their **grievances about the government's Covid-19 management.**
    - Even for seeking help to gain medical access, equipment, drugs and oxygen cylinders, especially during the **second wave** of the pandemic.
  ○ **Interpretation of 'Sedition':**
    - The ambit and parameters of the provisions of **Sections 124A** (sedition), **153A** and **505** of the **IPC** would require interpretation.
      ▪ **IPC Section 153 A:** Punishes **acts promoting enmity between different groups on ground of religion, race, place of birth, residence, language, etc**, and doing acts prejudicial to maintenance of harmony.
      ▪ **IPC Section 505:** Makes the **publication and circulation of content** which may cause ill-will or hatred between different groups an offence.
    - Particularly in the **context of the right of the electronic and print media to communicate news**, information and the rights, even those that may be critical of the **prevailing regime in any part of the nation.**

Note:

○ **Rights of Media:**

● Acknowledged the argument that the **media was well within its rights to air critical programmes** about a prevailing regime without attracting sedition.

Sedition (Section 124A of IPC)

➢ **Sedition** is a **crime under Section 124A, IPC.**

➢ Section 124A, IPC **defines sedition** as **an offence** committed when "any person by words, either spoken or written, or by signs, or by visible representation, or otherwise, brings or attempts to bring into hatred or contempt, or excites or attempts to excite **disaffection towards the government established by law in India".**

○ Disaffection **includes disloyalty and all feelings of enmity**. However, comments without exciting or attempting to excite hatred, contempt or disaffection, will not constitute an offence under this section.

➢ **Punishment for the Offence of Sedition:**

○ Sedition is a **non-bailable offence**. Punishment under the Section 124A ranges from **imprisonment up to three years to a life term, to which fine may be added.**

○ A **person charged** under this law is **barred from a government job.**

○ They have to **live without their passport and must produce themselves in the court at all times as and when required.**

Model Tenancy Act

The Union Cabinet has approved the **Model Tenancy Act** to be sent to the States and Union Territories to **enact legislation or amend laws on rental properties.**

➢ The **draft Act** had been published by the **Ministry of Housing and Urban Affairs** in 2019.

Key Points

➢ **Some Provisions:**

○ **Written Agreement is Mandatory:**

● Mandatory for there to be a **written agreement** between the property owner and the tenant.

○ **Establishes Independent Authority and Rent Court:**

● Establishes an independent authority in every state and UT for **registration of tenancy agree-**

ments and even a separate court **to take up tenancy related disputes.**

WHAT CHANGES

- Verbal rent agreements are illegal
- Security deposit capped at up to 2 month's rent for residential
- For non-residential premises, it is maximum 6 months
- Jurisdiction of civil courts barred
- Redressal within 60 days
- No eviction of tenant during tenancy period
- In force majeure, tenant allowed to stay for a month

○ **Maximum Limit for Security Deposit:**

● Limit the **tenant's advance security deposit to a maximum of two months rent** for residential purposes and to a **maximum of six months** for **non-residential purposes**.

○ **Describes Rights and Obligations of both Landlord and Tenant:**

● The **landlord** will be responsible for activities like structural repairs except those necessitated by damage caused by the tenant, whitewashing of walls and painting of doors and windows, etc.

● The **tenant** will be responsible for drain cleaning, switches and socket repairs, kitchen fixtures repairs, replacement of glass panels in windows, doors and maintenance of gardens and open spaces, among others.

○ **24-hour Prior Notice by the Landlord:**

● A landowner will have to give **24-hour prior notice before entering the rented premises** to carry out repairs or replacement.

○ **Mechanism for Vacating the Premises:**

● If a landlord has **fulfilled all the conditions stated** in the rent agreement - giving notice etc.- and the **tenant fails to vacate the premises** on the expiration of the period of tenancy or termination of tenancy, the landlord is **entitled to double the monthly rent for two months** and four times after that.

○ **Coverage:**

● It will **apply to** premises let out for **residential, commercial or educational use**, but **not for industrial use.**

● It **also won't cover** hotels, lodging houses, inns, etc.

Note:

- It will be applied prospectively and **will not affect existing tenancies.**
  - ❍ **Need:**
    - As per **Census 2011**, nearly **1.1 crore houses** were lying vacant in the country and making these houses available on **rent will complement** the vision of **'Housing for All' by 2022**.
  - ❍ **Significance:**
    - The authority will provide a **speedy mechanism** in **resolving disputes** and other related matters.
    - It will help overhaul the **legal framework** with respect to rental housing across the country.
    - It will enable creation of **adequate rental housing stock** for all the income groups thereby addressing the **issue of homelessness**.
    - It will enable **institutionalisation of rental housing** by gradually shifting it towards the formal market.
    - It is expected to give a **fillip to private participation in rental housing** as a business model for addressing the huge housing shortage.
  - ❍ **Challenges:**
    - The Act is **not binding on the states** as **land and urban development remain state subjects.**
    - Like in the case with **RERA** (Real Estate (Regulation and Development Act), the fear is that states may choose not to follow guidelines, diluting the essence of the Model Act.

Mega Food Park Scheme

Why in News

Recently, the Union Minister for Food Processing Industries virtually inaugurated the **Indus Best Mega Food Park** at **Raipur, Chhattisgarh.**

➢ It is built under the **Mega Food Park Scheme**. By this food park, about **5000 people will get employment and about 25000 farmers will be benefited.**

Key Points

➢ **About:**
  - ❍ It was launched in **2008-09** to give a major **boost to the food processing sector** by adding value and reducing food wastage at each stage of the supply chain with a particular focus on perishables.

  - The **Ministry of Food Processing Industries** is implementing the Mega Food Park Scheme in the country.
  - ❍ Mega Food Parks **create modern infrastructure facilities for food processing along the value chain** from farm to market with strong forward and backward linkages through a cluster-based approach.

➢ **Aim:**
  - ❍ To provide a **mechanism to link agricultural production to the market** by bringing together farmers, processors and retailers so as to **ensure maximizing value addition, minimizing wastage, increasing farmers income** and creating **employment opportunities** particularly in the rural sector.

➢ **Approach:**
  - ❍ The Scheme is **based on the "Cluster" approach** and envisages creation of state of art support infrastructure in a **well-defined agri/horticultural zone** for setting up of **modern food processing units** in the industrial plots provided in the park with a **well-established supply chain.**

➢ **Components:**
  - ❍ A Mega food Park typically consists of supply chain infrastructure including **collection centers (cc), primary processing centers (ppc) central processing centers (cpc), cold chain** and around **25-30 fully developed plots** for entrepreneurs to set up food processing units.

➢ **Financial Assistance:**
  - ❍ The **central government provides financial assistance upto Rs. 50 Crore** per Mega Food Park (MFP) project.

Mega Food Park Model: An Illustration
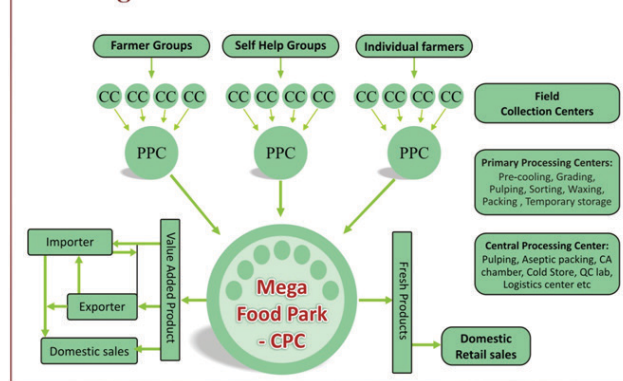
Note:

❍ The MFP project is **implemented by a Special Purpose Vehicle (SPV)** which is a Body Corporate registered under the **Companies Act, 2013.**

● SPV is a subsidiary company that is formed to **undertake a specific business purpose or activity.**

➢ **Present Status**:

❍ Presently, **22 Mega Food Parks are operational.** It is in line with the **'Make in India'** and **'Atma Nirbhar Bharat'** vision of the Government of India.

Bamboo Market Window on GeM Portal

Why in News

Recently, the government of India has dedicated a window **'The Green Gold Collection'** on the **GeM (Government e-Marketplace) portal** for the **marketing of Bamboo Goods.**

➢ This window is the collective work of the **National Bamboo Mission (NBM)** and **GeM.**

Key Points

➢ **About:**

❍ It showcases a range of exquisitely handcrafted bamboo and bamboo products, handicrafts, disposals and office utility products on the GeM portal.

❍ It **aims to** provide bamboo artisans, weavers and entrepreneurs in rural areas with market access to Government buyers.

❍ It seeks **to promote** the adoption and **use of bamboo products** among Government buyers and usher a sustainable rural economy for an **Atmanirbhar Bharat.**

➢ **National Bamboo Mission:**

❍ **Launch:**

● The **restructured NBM** was launched in **2018-19** for the holistic development of the complete value chain of the bamboo sector and is being **implemented in a hub & spoke model.**

■ "**Hub & Spoke**" model wherein the **Mentor Institution**, called the **"Hub"** is centralized and will have the responsibility of guiding the **Mentee institution** through the secondary branches the "**Spoke**" i.e. through the services provided to the mentee for self improvement.

❍ **Objectives:**

● **Connecting farmers to markets** so as to enable farmer producers to get a ready market for the bamboo grown and to increase the supply of appropriate raw material to the domestic industry.

● It also endeavours **to upgrade skills** of traditional bamboo craftsmen as per the requirement of contemporary markets with a tie-up with enterprises and premier institutes.

❍ **Nodal Ministry:**

● Ministry of Agriculture and Farmers Welfare.

➢ **Government e-Marketplace:**

❍ **About:**

● **GeM** is **a one-stop National Public Procurement Portal** to facilitate online procurement of common use Goods & Services required by various Central and State Government Departments / Organizations /Public Sector Undertakings (PSUs).

● The procurement of goods and services by Ministries and the Central Public Sector Enterprises (CPSEs) is **mandatory for goods and services available on GeM.**

● It also provides the tools of **e-bidding** and **reverse e-auction** to facilitate the government users achieve the best value for their money.

● At present, GeM has more than **30 lakh products**, over Rs. 10 lakh crore worth of transactions have happened so far at the portal.

❍ **Launch:**

● It was launched **in 2016** to bring transparency and efficiency in the government buying process.

❍ **Nodal Ministry:**

● Ministry of Commerce and Industry.

Bamboo

➢ **18th September** is observed as **World Bamboo Day** by the **World Bamboo Organisation.**

➢ **India is the world's second-largest cultivator of bamboo** after China, with **136 species** and **23 genera** spread over 13.96 million hectares, according to the **State of Environment report 2018.**

➢ **Green Gold**, as bamboo is often known, is f**ound everywhere in India**.

➤ Known as **'poor man's timber'**, bamboo is omnipresent in tribal cultures and community living. Rural communities engage with bamboo handicrafts, textiles, artifacts, and household utilities.

  ❍ **Examples** include **Tripura bamboo silks**, heritage cuisines with roasted and pickled bamboo shoots, cultural symbols like the **Assamese 'Jaapi'** (made of bamboo, cane, and palm), widely popular bamboo tree houses, machans, besides modern sustainable architectural concepts and musical instruments.

➤ **Initiatives Taken:** National Bamboo Mission, **Bamboo Clusters**, Removal of Bamboo from 'Tree' Category (**Indian Forest Act 1927** was amended in 2017).

Council of Scientific and Industrial Research

Why in News

Recently, the Prime Minister chaired a meeting of the **Council of Scientific and Industrial Research (CSIR) Society** through video conference.

➤ Earlier **CSIR Floriculture Mission** was approved for implementation in 21 States and Union Territories of India.

➤ It is also planning to **undertake genome sequencing of** a sample of nearly 1000 Indian **rural youth to determine unique genetic traits, susceptibility (and resilience) to disease.**

Key Points

➤ **About:**

  ❍ It is the **largest research and development (R&D) organisation in India**. It has a **pan-India presence** and has a dynamic network of **37 national laboratories, 39 outreach centres, 3 Innovation Complexes and 5 units**.

  ❍ It is **ranked 37th among 1587 government institutions worldwide** and is the only Indian organization among the top 100 global government institutions, according to the **Scimago Institutions Ranking World Report 2021.**

    ● CSIR holds the **7th rank in Asia and leads the country at the first position**.

  ❍ The **Prime Minister** is the **President** (Ex-officio) and the **Union Minister of Science and Technology** is the **Vice President** (Ex-officio).

➤ **Funding:**

  ❍ CSIR is funded by the **Ministry of Science and Technology** and it operates as an autonomous body through the **Societies Registration Act, 1860.**

➤ **Established:**

  ❍ September 1942.

➤ **Located**:

  ❍ New Delhi.

➤ **Objectives:**

  ❍ **Scientific and industrial/applied research of national importance**. It covers a wide spectrum of streams such as: Radio and space physics, oceanography, **biotechnology**, **nanotechnology**, information technology, etc.

  ❍ It **provides significant technological intervention** in many areas with regard to societal efforts which include the environment, health, drinking water, food, housing, energy, farm and non-farm sectors.

➤ **Some Initiatives:**

  ❍ **Covid-19:**

    ● CSIR has set up **five technology verticals** for addressing the emerging situation due to **pandemic**:

      ■ Digital and Molecular Surveillance.

      ■ Rapid and Economical Diagnostics.

      ■ Repurposing of Drugs, Vaccine and Convalescent Plasma Therapy.

      ■ Hospital Assistive Devices and PPEs (Personal Protective Equipment).

      ■ Supply Chain and Logistics Support Systems.

  ❍ **Strategic:**

    ● **Head-Up-Display (HUD):** It developed indigenous Head-Up- display (HUD) for Indian Light Combat Aircraft, **Tejas**. HUD **aids the pilot in flying the aircraft and in critical flight maneuvers including weapon aiming.**

  ❍ **Energy & Environment:**

    ● **Solar Tree:** It occupies **minimum space to produce clean power.**

    ● **Lithium Ion Battery:** India**'s first lithium ion battery fabrication facility** based on indigenous novel materials for making 4.0 V/14 h standard cells has been established.

- ❍ **Agriculture:**
  - ● **Samba Mahsuri Rice Variety:** It developed a **Bacterial Blight Resistant Rice.**
  - ● **Rice Cultivar (Muktashree):** A rice variety has been developed which **restricts assimilation of Arsenic within permissible limits.**
  - ● **White-fly resistant Cotton variety**: Developed a **transgenic cotton line** which is resistant to whiteflies.
- ❍ **Healthcare:**
  - ● **Genomics and other omics technologies for Enabling Medical Decision – GOMED**: It has been developed by the CSIR which provides a platform of disease genomics to solve clinical problems.
- ❍ **Food & Nutrition:**
  - ● **Ksheer-scanner:** It detects the **level of milk adulteration** and adulterants in 45 seconds at the cost of 10 paise.
  - ● **Double-Fortified Salt:** Salt **fortified with iodine and iron** having improved properties developed and tested for **addressing anaemia in people.**

Incredible India Tourist Facilitator Certification Programme

Why in News

Recently, on the occasion of **World Environment Day (5th June)**, the Tourism Minister appreciated the **Incredible India Tourist Facilitator Certification Programme (IITFC)**.

Key Points

- ➢ **About:**
  - ❍ IITFC Programme is **a digital initiative of the Ministry of Tourism (MoT)**, for the citizens of India to become a part of the booming Tourism Industry.
  - ❍ It is **an online programme** where one can learn about tourism at their own time, space, path and pace.
  - ❍ The successful completion of this programme would enable the learner to become a **Certified Tourist Facilitator** of the Ministry of Tourism.
- ➢ **Tourism & Hospitality Sector in India:**

- ❍ In FY20, the tourism sector in India accounted for 39 million jobs, which wa**s 8% of the total employment** in the country. By 2029, it is **expected to account for about 53 million jobs.**
- ❍ According to WTTC (World Travel and Tourism Council), India **ranked 10th among 185 countries in terms of travel & tourism's total contribution to GDP** in 2019. During 2019, the contribution of travel & tourism to GDP was 6.8% of the total economy.
- ❍ **By 2028, international tourist arrivals are expected to reach 30.5 billion** and generate **revenue over USD 59 billion.**
- ➢ **Other Initiatives of the Ministry of Tourism:**
  - ❍ **DekhoApnaDesh Campaign:**
    - ● It is an initiative to encourage the citizens to travel widely within the country and explore the wonders of India thus enabling the development of Domestic Tourism tourist facilities and infrastructure in tourism spots in the country.
  - ❍ **Prashad Scheme:**
    - ● The Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive (PRASHAD) was launched in the year 2014-15 with the objective of holistic development of identified pilgrimage destinations.
  - ❍ **Swadesh Darshan Scheme:**
    - ● Swadesh Darshan, a **Central Sector Scheme**, was launched in 2014-15 for integrated development of **theme based tourist circuits** in the country.
    - ● Currently, there are 15 theme based circuits - Buddhist, Coastal, Desert, Eco, Heritage, Himalayan, Krishna, North-east, Ramayana, Rural, Spiritual, Sufi, Tirthankara, Tribal and Wildlife.
- ➢ **Recent Initiatives:**
  - ❍ In **January 2021**, the Union Tourism Minister announced plans to develop **an international-level infrastructure in Kargil (Ladakh)** to promote **adventure tourism and winter sports.**
  - ❍ As of March 2021, the **e-Tourist Visa facility** was extended to citizens of 171 countries.
  - ❍ The **Indian Railway Catering and Tourism Corporation (IRCTC) runs a series of Bharat Darshan tourist trains** aimed at taking people to various pilgrimages across the country.
  - ❍ **All India Tourist Vehicles Authorisation and Permit Rules, 2021:** It was **introduced by the Ministry of**

Note:

Road Transport and Highways, in which a tourist vehicle operator can register online for All India Tourist Authorisation/Permit.

Chemical Weapons Convention

Why in News

Recently, the **Organisation for the Prohibition of Chemical Weapons (OPCW)** informed the **United Nations (UN)** that in **17 cases chemical weapons were likely or definitely used by Syria.**

➢ **OPCW** was formed under the **Chemical Weapons Convention (CWC)** 1997**.**

Key Points

➢ **Chemical Weapons:**
  ○ A Chemical Weapon is **a chemical used to cause intentional death** or harm through its toxic properties.
  ○ **Munitions, devices and other equipment** specifically designed to weaponize toxic chemicals also fall under the definition of chemical weapons.

➢ **Chemical Weapons Convention:**
  ○ **About**:
    ● It is a **multilateral treaty banning chemical weapons** and requiring their destruction within the stipulated time.
    ● Negotiations for the CWC began in 1980 at the **United Nations Conference on Disarmament.**
    ● The convention was **drafted in September 1992** and o**pened for signature in January 1993**. It became **effective from April 1997.**
    ● It makes it **mandatory to destroy old and abandoned chemical weapons.**
    ● Members should also declare the **riot-control agents** (sometimes referred to as 'tear gas') **in possession** of them.
  ○ **Members:**
    ● It has **192 state parties and 165 signatories.**
    ● **India** signed the treaty in **January 1993**.
  ○ **Convention Prohibits:**
    ● The development, production, acquisition, stockpiling, or retention of chemical weapons.
    ● Transferring of chemical weapons.
    ● Using chemical weapons.

● Assisting other States to indulge in activities that are prohibited by the CWC.
● Using riot-control devices as 'warfare methods'.

➢ **Organisation for the Prohibition of Chemical Weapons**:
  ○ **About**:
    ● It is an **international organization** established by the CWC in 1997 to implement and enforce the terms of the CWC.
    ● By the **2001 Relationship Agreement** between the **OPCW and the UN**, the OPCW reports on its inspections and other activities to the UN through the office of the Secretary General.
    ● The OPCW was awarded the **Nobel Peace Prize** in 2013.
  ○ **Headquarters:**
    ● **Hague, Netherlands.**
  ○ **Functions**:
    ● It is **authorized to perform inspections** to verify that signatory states are complying with the convention.
      ■ This **includes a commitment to grant inspectors** full access to chemical weapons sites.
    ● It also **performs testing of sites and victims** of suspected chemical weapons attacks.
    ● It also **provides for assistance to and protection of States attacked or threatened with chemical weapons**, cooperation in the peaceful use of chemicals.

➢ **Indian Initiative:**
  ○ The **Chemical Weapons Convention Act, 2000** was passed to implement the CWC.
  ○ It provided for the establishment of a **National Authority for Chemical Weapons Convention or NACWC.** This institution, formed in 2005, is the **chief liaison between the government of India and the OPCW**. It is an office in the Cabinet Secretariat of the GoI.

Basel, Rotterdam and Stockholm Conventions (Hazardous Chemicals and Wastes)

➢ The Basel, Rotterdam and Stockholm conventions are **multilateral environmental agreements**, which share the common objective of **protecting human health and the environment from hazardous chemicals and wastes.**

➢ **The Basel Convention:**
  ○ It came into force in **1992, intended to reduce transboundary movements of hazardous waste** from developed to less developed countries (LDCs), and ensure their safe disposal as closely as possible to the source of generation.
    ● **India is a member.**
➢ **Rotterdam Convention:**
  ○ It was adopted in **September 1998** by a Conference of Plenipotentiaries in Rotterdam, Netherlands and entered into force **in February 2004.**
    ● **India is a member.**
  ○ It **covers pesticides and industrial chemicals that have been banned or severely restricted** for health or environmental reasons by Parties and which have been notified by Parties for inclusion in the Prior Informed Consent (PIC) procedure.
  ○ The Convention **creates legally binding obligations** for the implementation of the Prior Informed Consent (PIC) procedure.
➢ **The Stockholm Convention:**
  ○ It is a global treaty **to protect human health and the environment from Persistent Organic Pollutants (POPs). India is a member.** The Convention entered into force in **May, 2004.**
    ● **POPs** are chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of living organisms and are toxic to humans and wildlife.

Performance Grading Index (PGI)

Why in News

The Union Education Minister has approved the release of **Performance Grading Index (PGI) 2019-20** for States and Union Territories.

➢ The PGI is a **tool to provide insights on the status of school education in States and UTs** including key levers that drive their performance and critical areas for improvement.

Key Points

➢ **About the Performance Grading Index (PGI):**

Improved performance

Andaman & Nicobar Islands, Arunachal Pradesh, Manipur, Puducherry, Punjab and Tamil Nadu have improved overall score in the performance grading index by 10%.

Score of states in school performance index

Top 5 states/UTs	Score in a scale of 1,000
Punjab	929
Chandigarh	912
Tamil Nadu	906
Kerala	901
Andaman and Nicobar Islands	901

Bottom 5 states/UTs	Score in a scale of 1,000
Ladakh	545
Meghalaya	649
Nagaland	667
Arunachal Pradesh	698
Chhattisgarh	700
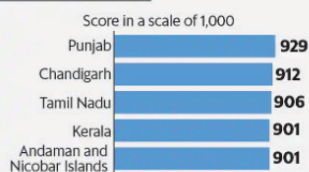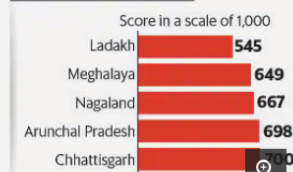
Source: Union education ministry

○ **Background**: The PGI for States and Union Territories was **first published in 2019** with reference year 2017-18.
  ● The **PGI : States/UTs for 2019-20 is the third publication** in this series.
○ **Objectives**:
  ● The PGI exercise envisages that the index would propel States and UTs towards **undertaking multi-pronged interventions** that will bring about the much-desired optimal education outcomes.
  ● The PGI helps the States/UTs to **pinpoint the gaps** and accordingly prioritise areas for intervention to ensure that the school education system is robust at every level.
○ **Implementing Agency**:
  ● It is initiated by the **Department of School Education and Literacy (DoSEL).**
○ **Source of Information:**
  ● The information on the indicators are drawn from data available with the DoSEL from the **Unified District Information System for Education (UDISE), National Achievement Survey (NAS) of NCERT, Mid Day Meal website, Public Financial Management System (PFMS)** and the information uploaded by the States and UTs on the **Shagun portal** of DoSEL.
○ **Methodology:**
  ● The PGI is structured **in two categories,** namely, **Outcomes** and **Governance & Management** and comprises **70 indicators** in aggregate with a total weightage of 1000.
  ● **Domains** under categories include: **Access, Infrastructure & Facilities, Equity, Governance process.**

Note:

- ➢ **Important Findings of the PGI 2019-20**:
  - ○ **State-wise Performance:**
    - ● Shows that **33 States and UTs have improved their PGI scores** in 2019-20 compared to the previous year.
    - ● **Andaman and Nicobar Islands, Arunachal Pradesh, Manipur, Puducherry, Punjab and Tamil Nadu have improved** their overall PGI scores by 10%.
  - ○ **Inter-state Differential**:
    - ● With a maximum possible score of 1000 points, the range between the States and UTs with the highest and the lowest score is **more than 380 points** in the year 2019-20.
- ➢ **Domain-wise Performance**:
  - ○ **Access**: **Andaman and Nicobar Islands, Lakshadweep and Punjab** have shown improvement of 10% or more in the 'Access' domain.
  - ○ **Infrastructure and Facilities**: Thirteen states and UTs have shown improvement by 10% or more in 'Infrastructure and Facilities' while **Andaman and Nicobar Islands and Odisha** have improved their scores in the domain by 20% or more.
  - ○ **Equity**: In 'Equity', **Arunachal Pradesh, Manipur and Odisha** have shown an improvement of more than 10%.
  - ○ **Governance Process**: 19 states have shown improvement by 10% or more.
    - ● **Andaman and Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Manipur, Punjab, Rajasthan and West Bengal** have shown improvement by at least 20%.

Model Panchayat Citizens Charter

Why in News

Recently, the Union Minister of Panchayati Raj released a **Model Panchayat Citizens Charter.**

Key Points

- ➢ **About:**
  - ○ It is prepared by the **Ministry of Panchayati Raj (MoPR)** in collaboration with **National Institute of Rural Development & Panchayati Raj (NIRDPR).**

- ● NIRDPR is an **autonomous organisation** under the **Union Ministry of Rural Development.**
- ○ It has been developed for the **delivery of the services across the 29 sectors,** aligning actions with localised **Sustainable Development Goals (SDGs).**
- ○ It is expected that the **Panchayats utilising this framework,** and with the due approval of **Gram Sabha,** would draw up a Citizens Charter, detailing the different **categories of services rendered to the citizen by the Panchayat**, the **conditions for such service** and also the time limit for such service.
- ○ It will help in **making the citizens aware of their rights** on the one hand, and to make the **Panchayats and their elected representatives directly accountable** to the people, on the other hand.
- ➢ **Significance:**
  - ○ **Panchayati Raj Institutions (PRIs)** constitute the **third tier of government** in the rural areas and represent the **first level of Government interaction for over 60%** of the Indian population.
  - ○ PRIs are **responsible for delivery of basic services** as enshrined under **Article 243G of the Constitution of India**, specifically in the areas of Health & Sanitation, Education, Nutrition, Drinking Water.
- ➢ **Other Initiatives for PRIs:**
  - ○ **eGramSwaraj:**
    - ● It is a user-friendly web-based portal which unifies the planning, accounting and monitoring functions of Gram Panchayats.
  - ○ **Rashtriya Gram Swaraj Abhiyan (RGSA):**
    - ● Launched in 2018, this **centrally sponsored scheme** is an effort in the direction of achieving "**Sabka Sath, Sabka Gaon, Sabka Vikas".**
  - ○ **People's Plan Campaign (PPC)- Sabki Yojana Sabka Vikas:**
    - ● It aims to draw up **Gram Panchayat Development Plans (GPDPs)** in the country and place them on a website where anyone can see the status of the various government's flagship schemes.

Citizen's Charter

- ➢ **About:**
  - ○ It is a **voluntary and written document** that spells out the service provider's efforts taken to focus on their commitment towards fulfilling the needs of the citizens/customers.

- It preserves the trust between the service provider and the citizens/users.
- It includes what the citizens can expect out of the service provider.
- It also includes how citizens can redress any grievances.
  - The concept was **first articulated and implemented in the United Kingdom** by the Conservative Government of John Major in 1991 as a national Programme.
  - Citizen's charters are **not legally enforceable documents**. They are **just guidelines to enhance service delivery to citizens.**
- ➤ **Originally Framed Principles:**
  - Quality – Improving service quality.
  - Choice – Wherever possible.
  - Standards – Specifically mention what to expect and how to go about if standards are not met.
  - Value – For taxpayers' money.
  - Accountability – At the level of the individual and the organization.
  - Transparency – Transparency in rules/schemes/procedures/grievances.
- ➤ **Indian Initiative:**
  - In India, the concept of citizen's charter was first adopted at a **'Conference of Chief Ministers of various States and Union Territories' held in May 1997.**
    - A major outcome of the conference was a decision to formulate Citizen's Charters by the central and state governments, beginning with sectors with a large public interface such as the railways, telecom, posts, Public Distribution System, etc
    - The task of coordination, formulation, and operationalization of citizen's charters was done by the **Department of Administrative Reforms and Public Grievances (DARPG).**
  - The **Right of Citizens for Time Bound Delivery of Goods and Services and Redressal of their Grievances Bill, 2011** (Citizens Charter) was introduced in the Lok Sabha in December 2011.
    - It lapsed due to the dissolution of the Lok Sabha in 2014.
- ➤ **Need:**

- To make administration accountable and citizen friendly.
- To ensure transparency.
- To take measures to improve customer service.
- To adopt a stakeholder approach.
- To save time for both Administration and the citizens.
- ➤ **Challenges in India:**
  - In a majority of cases, **not formulated through a consultative process** with cutting edge staff who will finally implement it.
  - Lack of meaningful and succinct Citizen's Charter, **absence of critical information that end-users need** to hold agencies accountable.
  - Only a **small percentage of end-users are aware of the commitments** made in the Citizen's Charter.
  - Measurable **standards of delivery are rarely defined** making it difficult to assess whether the desired level of service has been achieved or not.
  - Little interest shown by the organizations in adhering to their Citizen's Charter since there is **no citizen friendly mechanism** to compensate the citizen if the organization defaults.
  - Citizen's Charter has still **not been adopted by all Ministries/Departments**. This **overlooks local issues**.

World Food Safety Day

Why in News

The **Union Minister for Health and Family Welfare** virtually attended the **World Food Safety Day (7th June)** celebrations organized by **Food Safety and Standards Authority of India (FSSAI).**

Key Points

- ➤ **About**:
  - The **World Health Organization (WHO)** and the **Food and Agriculture Organization of the United Nations (FAO)** jointly facilitate the observance of World Food Safety Day, in collaboration with Member States and other relevant organizations.
  - It was **first celebrated in 2019**, to strengthen the commitment to scale up food safety made by the **Addis Ababa Conference** and the **Geneva Forum in 2019** under the umbrella of **"The Future of Food Safety".**

➢ **Aim:**
  ○ To **draw attention and inspire action to help prevent, detect and manage foodborne risks**, contributing to food security, human health, economic prosperity, agriculture, market access, tourism and **sustainable development**.

➢ **2021 Theme:**
  ○ Safe Food for a Healthy Tomorrow.

➢ **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.
    ● **Global food waste accounts for 6.7% of global greenhouse gas emissions**, directly leading to climate change.

➢ **Related Global Initiative:**
  ○ 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** and **World Health Organization**.
    ● Currently, it has 189 members and **India is a member.**

➢ **Indian Initiatives for Food Safety:**
  ○ **State Food Safety Index :**
    ● **FSSAI** has developed the **State Food Safety Index (SFSI) to measure the performance of States** on **five parameters** of food safety.

● The **parameters** include Human Resources and Institutional Arrangements, Compliance, Food Testing- Infrastructure and Surveillance, Training and Capacity Building and Consumer Empowerment.

○ **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.
  ● Eat Right India 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 Mukt Bharat** and **Swachh Bharat Mission.**

○ **Eat Right Awards:**
  ● FSSAI has instituted the '**Eat Right Awards**' to recognize the contribution of food companies and individuals to empower citizens to choose safe and healthy food options, which would help improve their health and well-being.

○ **Eat Right Mela:**

Food Safety and Standards Authority of India (FSSAI)

➢ **About**:
  ○ FSSAI is an **autonomous statutory body** established under the **Food Safety and Standards Act, 2006 (FSS Act).**
  ○ It has its headquarter in **Delhi** and its administrative Ministry is **Ministry of Health & Family Welfare.**

➢ **Functions**:
  ○ **Framing of regulations** to lay down the standards and guidelines of food safety.
  ○ **Granting FSSAI food safety license** and certification for food businesses.
  ○ **Laying down procedure and guidelines** for laboratories in food businesses.
  ○ To **provide suggestions** to the government in framing the policies.
  ○ To **collect data regarding contaminants** in foods products, identification of emerging risks and introduction of a rapid alert system.
  ○ **Creating an information network** across the country about food safety.

Note:

- Organised by FSSAI, it is an outreach activity **for citizens to nudge them towards eating right**. It is organised to make citizens aware of the health and nutrition benefits of different types of food.

Draft Rules for Live-Streaming Court Proceedings

Why in News

Recently, the **Supreme Court** has released the **Draft Model Rules for Live-Streaming and Recording of Court Proceedings.**

➢ The Rules are **part of the National Policy and Action Plan for implementation of Information and Communication Technology (ICT)** in the judiciary.

➢ The Rules would cover live-streaming and recording of proceedings in **High Courts, lower courts and tribunals.**

➢ 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

➢ **Background:**
  ○ The Supreme Court in *Swapnil Tripathi v Supreme Court of India* (2018) had **ruled in favour of opening up the apex court through live-streaming.**
  ○ It held that the **live streaming proceedings are part of the right to access justice under Article 21** (Protection of Life and Personal Liberty) of the Constitution.
  ○ **Gujarat High Court was the first high court to livestream court proceedings** followed by Karnataka high court.

➢ **Draft Rules:**
  ○ **Telecast of Proceedings: All proceedings** in high courts can be telecast **except** for cases relating to **matrimonial disputes, gender-based violence**, those **involving minors** and **"cases, which** in the opinion of the Bench, may provoke **enmity amongst communities** likely to result in a breach of law and order".
  ○ **Deciding Authority:** The **final decision** as to **whether or not to allow the Live-streaming** of

the Proceedings or any portion thereof **will be of the Bench,** however, the decision of the Bench will be guided by the principle of an open and transparent judicial process.
  - The **decision of the Bench shall not be justiciable**.

○ **Allow Objections:** The **rules allow for objections to be filed against live streaming** in specific cases at the stage of filing of the case or at a later stage.

○ **Record of Proceedings:** The draft rules allow for **archiving of court proceedings for six months.**
  - The **use of authorised recordings** in their original form **may be permitted by the court**, inter-alia **to disseminate news and for training, academic and educational purposes.**

○ **Restrictions:**
  - **Discussion amongst judges**, notes made by judges during hearings or **communication between the advocate and her client** will neither be telecast live nor archived.
  - The rules also **prohibit recording or sharing the telecast on media platforms**, including social media and messaging platforms, unless authorised by the court.
  - Recordings will **not be used for commercial, promotional purposes or advertising** in any form.

➢ **Possible Benefits:**
  ○ It can make the **justice delivery system affordable, transparent, speedy and accountable** by limiting the paper filings.
  ○ It can be **time saving** and hence can **reduce the backlog of pending cases** and reduce the number of unscrupulous activities.

➢ **Concerns:**
  ○ **Lack of technical manpower in courts** and awareness amongst litigants, advocates and their acceptance to the system change.
  ○ A huge concern will be the **cyber security threat.**
  ○ The live streaming of the Courts are **susceptible to abuses.** Thus, **issues of privacy** may arise.
  ○ **Infrastructure**, especially the **internet connectivity is also a big challenge** in implementing the live proceedings of Courts.

e-Courts Project

➢ The e-Courts project was conceptualized on the basis of the "**National Policy and Action Plan for Implementation of Information and Communication Technology (ICT) in the Indian Judiciary – 2005**" submitted by **e-Committee**, **Supreme Court** of India with a vision to transform the Indian Judiciary by ICT enablement of Courts.

➢ The e-Courts Mission Mode Project, **is a Pan-India Project**, monitored and funded by the Ministry of Law and Justice for the District Courts across the country.

➢ **The project envisages:**

○ To provide efficient & time-bound citizen-centric services delivery as detailed in e-Court Project Litigant's Charter.

○ To develop, install & implement decision support systems in courts.

○ To automate the processes to provide transparency in the accessibility of information to its stakeholders.

○ To enhance judicial productivity, both qualitatively & quantitatively, to make the justice delivery system affordable, accessible, cost-effective, predictable, reliable and transparent.

YUVA Scheme for Young Writers

Why in News

Recently, the Indian Prime Minister announced the '**Young, Upcoming and Versatile Authors' (YUVA) scheme** - a mentorship programme to train young authors.

Key Points

➢ **About:**

○ The scheme is **aimed at training 75 aspiring writers below 30 years,** who are ready to express themselves and project India and its culture and literature globally.

● A total of 75 authors **will be selected through an All India Contest at MyGov** (Government of India's Citizen Engagement Platform).

○ A **consolidated scholarship of Rs. 50,000 per month for a period of six months per author** will be paid under the mentorship scheme.

➢ **Aim:**

○ To **bring reading and authorship as a preferred profession at par** with other job options.

○ To **impart a positive psychological push** to the young minds amidst the impact of the **Covid-19 pandemic** on the mental health of children.

➢ **Implementation & Execution:**

○ **Implementing Agency:** The **National Book Trust** (under Ministry of Education) will ensure phase-wise execution of the Scheme.

○ **Phase-I (Training):**

● NBT will organise **training for three months** for the selected candidates.

○ **Phase-II (Promotion):**

● The selected candidates will **get to expand their understanding and hone their skills** through interaction at various international events such as literary festivals, book fairs, virtual book fairs, cultural exchange programmes, etc.

● A **book or a series of books written by these young authors** will be **published by NBT** and **a royalty of 10% will be paid** to the authors.

● Their published books will **also be translated into other Indian languages** to ensure the exchange of culture and literature between different states, thereby promoting **Ek Bharat Shreshtha Bharat.**

Surakshit Hum Surakshit Tum Abhiyan: Aspirational Districts

Why in News

Recently, **NITI Aayog** and **Piramal Foundation** launched '**Surakshit Hum Surakshit Tum Abhiyan**' in **112 aspirational districts.**

➢ This drive was launched **to assist the administration in providing home care support to Covid-19 patients**, who are either asymptomatic or have mild symptoms.

➢ **Most of these districts** are in **Jharkhand, Chhattisgarh, Odisha and Maharashtra.**

Key Points

➢ **About:**

○ The campaign is under a special initiative – **Aspirational Districts Collaborative** – in which

local leaders, civil societies and volunteers will work with the district administrations to address emerging issues across key focus areas of the Aspirational Districts Programme.

- ○ It will be led by district magistrates in partnership with over 1000 local NGOs, which will enlist and train over 1 lakh volunteers to connect with patients through inbound/outbound calls.
- ○ Volunteers will be trained to support 20 affected families each by educating caretakers to follow protocols, provide psycho-social support and timely updates about patients to the administration.

➢ Objective:
- ○ It is aimed to reach every affected person in these 112 districts.
- ○ The campaign is expected to play a key role in district preparedness for managing nearly 70% of Covid-19 cases at home, reducing pressure on the health system, and stemming the spread of fear amongst the people.
- ○ It will provide long-term support to India's poorest communities in the Aspirational Districts by addressing the lasting impact of Covid-19.

Aspirational Districts Programme

➢ About:
- ○ It was launched in January 2018, the 'Transformation of Aspirational Districts' Programme (TADP).
- ○ Aspirational Districts are those districts in India that are affected by poor socio-economic indicators.
- ○ These are aspirational in the context, that improvement in these districts can lead to the overall improvement in human development in India.

➢ Ministry:
- ○ At the Government of India level, the programme is anchored by NITI Aayog. In addition, individual Ministries have assumed responsibility to drive the progress of districts.

➢ Objective:
- ○ To monitor the real-time progress of aspirational districts.

➢ Focus Areas:
- ○ ADP is based on 49 indicators from the 5 identified thematic areas, which focuses closely on improving people's Health & Nutrition, Education, Agriculture & Water Resources, Financial Inclusion & Skill Development, and Basic Infrastructure.
- ○ With States as the main drivers, ADP seeks to focus on the strength of each district, identify low-hanging fruits for immediate improvement, measure progress, and rank districts.

➢ Broad Contours of the Programme (Triple-C):
- ○ Convergence (of Central & State Schemes) which brings together the horizontal and vertical tiers of the government.
- ○ Collaboration (of Central, State level 'Prabhari' Officers & District Collectors) which enables impactful partnerships between government, market and civil society.
- ○ Competition among districts driven by a spirit of the mass movement fosters accountability on district governments.

Railways Gets 5 MHz Spectrum

Why in News

Recently, the Union Cabinet approved the allotment of 5 MHz spectrum in the 700 MHz frequency band to the Indian Railways for improving its communication and signalling systems.

➢ Railways has also approved a indigenously developed Train Collision Avoidance System (TCAS).

Key Points

➢ About:
- ○ The project, targeted to be completed in five years, is estimated to cost over Rs. 25,000 crore.
- ○ The spectrum charges will be levied based on formula as prescribed by Department of Telecommunications for Royalty Charges and License Fee for captive use as recommended by the Telecom Regulatory Authority of India (TRAI).
- ○ With this spectrum, the railways will introduce Long-Term Evolution (LTE)-based Mobile Train Radio Communication (MTRC) on its routes.
  - The Railways currently relies on optical fibre for its communication network but with the allocation of fresh spectrum, it will be able to use high-speed radio on a real-time basis.
  - LTE is a fourth-generation (4G) wireless standard that provides increased network capacity and

speed for cellphones and other cellular devices compared with third-generation (3G) technology.

➢ **Benefits:**
   ○ **Seamless Connection:**
      ● It will be used for modern signalling and train protection systems and ensure seamless communication between loco pilots and guards.
      ● The purpose of the LTE for Indian Railways is to **provide secure and reliable voice**, video and data communication services for operational, safety and security applications.
   ○ **Reduced Accidents & Delays:**
      ● It will help **prevent train accidents and reduce delays** by enabling real-time interaction between the Loco Pilot, Station Master and the Control Centre.
   ○ **Internet of Things:**
      ● This will also enable the railways to undertake **Internet of Things (IoT)** based remote asset monitoring, particularly of coaches, wagons and locos, and monitor live video feed of **CCTV** cameras in the coaches to ensure efficient, safer and faster train operations.
         ■ **IoT** is a **computing concept that describes the idea of everyday physical objects being connected to the internet** and being able to identify themselves to other devices.

➢ **Train Collision Avoidance System (TCAS).**
   ○ It is a microprocessor based control system, which **continuously monitors the speed, direction of travel, distance travelled,** aspect of the signal passed and alertness of the motorman and thus increases the safety of the railway system.
   ○ It will help in **improving the safety and increasing the line capacity to accommodate more trains using the existing infrastructure**. The modern rail network will result in **reduced transportation cost and higher efficiency.**

Radio Spectrum
➢ The radio spectrum (also known as Radio Frequency or RF) is a part of the **electromagnetic spectrum**, electromagnetic waves in this frequency range are called radio frequency bands or simply '**radio waves**'.
   ○ **Radio waves** have the longest wavelengths in the electromagnetic spectrum. These were discovered by Heinrich Hertz in the late 1880s.

➢ RF bands spread in the range between **30 kHz and 300 GHz** (alternative point of view offers coverage 3 KHz – 300 GHz).
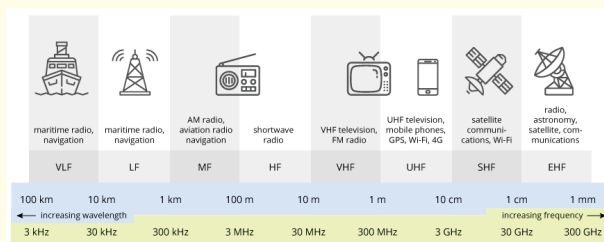
➢ To prevent interference between different users, the **generation and transmission of radio frequency bands is strictly regulated by national laws**, coordinated by an international body, the **International Telecommunication Union (ITU).**

Fast Tracking Freight in India: NITI Aayog

Why in News

NITI Aayog, **Rocky Mountain Institute (RMI)** and **RMI India's new report**, Fast Tracking Freight in India: A Roadmap for Clean and Cost-Effective Goods Transport, **present key opportunities for India to reduce its logistics costs.**

➢ **RMI** is **an independent nonprofit organization** founded in 1982.

NITI Aayog
➢ It is a **public policy think tank of the Government of India,** established with the aim **to achieve sustainable development goals with cooperative federalism** by fostering the involvement of State Governments of India in the economic policy-making process using a bottom-up approach.
➢ It was established **to replace the Planning Commission**. The **Prime Minister** is its **ex-officio chairman.**

Key Points

➢ **Growing Freight Transport Demand:**
   ○ Due to the rising demand for goods and services, **freight transport demand is expected to grow rapidly in the future.**
   ○ While freight transport is essential to economic development, it is **plagued by high logistics costs**

Note:

and contributes to rising carbon dioxide emissions and air pollution in cities.

➤ **India's Potential:** It has the potential to:
  ○ Reduce its logistics cost by 4% of **Gross Domestic Product (GDP)**.
  ○ Achieve **10 gigatonnes of cumulative carbon dioxide emissions savings** between 2020 and 2050.
  ○ Reduce Nitrogen Oxide (NOx) and **Particulate Matter (PM)** emissions by 35% and 28%, respectively, until 2050.

➤ **Accommodating More Urban Citizens:**
  ○ As India's freight activity grows five-fold **by 2050 and about 400 million citizens move to cities,** a whole system transformation can help uplift the freight sector.
  ○ This transformation will be defined by **tapping into opportunities** such as:
    ● Efficient rail-based transport.
    ● Optimisation of logistics and supply chains.
    ● Shift to electric and other clean-fuel vehicles.
  ○ These solutions **can help India save Rs. 311 lakh crore** cumulatively over the next three decades.

➤ **Need to Make Freight Transportation Cost Effective:**
  ○ Freight transportation is a **critical backbone of India's growing economy**, and now more than ever, **it's important to make this transport system more cost-effective, efficient, and cleaner.**
  ○ Efficient freight transport will also **play an essential role in realising the benefits of existing government initiatives** such as **Make in India, Atma Nirbhar Bharat**, and **Digital India.**

➤ **Recommendations:**
  ○ Increasing the rail network's capacity, promoting intermodal transport, improving warehousing and trucking practices, policy measures and pilot projects for clean technology adoption, and stricter fuel economy standards.
  ○ When successfully deployed at scale, **the proposed solutions can help India establish itself as a leader** in logistics innovation and efficiency **in the Asia–Pacific region and beyond.**

➤ **Recent Initiatives:**
  ○ **Dedicated Freight Corridor (DFC):**
    ● It is a **high speed and high capacity railway corridor** that is exclusively meant for the transportation of freight, or in other words, goods and commodities.

  ○ **E-Way Bill Integration with FASTag, RFID:**
    ● It will **enable tax officers to undertake live vigilance** in respect of **E-Way Bill** compliances by businesses, stop revenue leakage and will facilitate movement of large goods vehicles.
  ○ **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 electric vehicles (EV), with a goal of reaching 30% EV penetration by 2030.**
  ○ **Bharat Stage VI norms:**
    ● It includes a **wide list of technology modifications**, the most significant being making OBD (On-board diagnostics) mandatory for all vehicles.
  ○ **Corporate Average Fuel Efficiency (CAFE) Regulations:**
    ● The CAFÉ standards were first **notified in 2017** by the Union Ministry of Power (MoP) **under Energy Conservation Act, 2001.**
    ● The regulation is in accordance with the fuel consumption standards of 2015 that aim **to increase fuel efficiency of vehicles on the road by 35% by 2030.**

Rengma Nagas Demand Autonomous District Council

Why in News

The Rengma Naga Peoples' Council (RNPC) or **Rengma Nagas** have **demanded an Autonomous District Council (ADC)** in **Assam.**

➤ The Central and the State governments recently upgraded the **Karbi Anglong Autonomous Council (KAAC)** and the **North Cachar Hills Autonomous Council (NCHAC)** to territorial councils like the **Bodoland Territorial Council**.
  ○ The **'status of territorial council'** will provide **more autonomy and financial grant** to them.

➤ It is alleged that the creation of these tribal councils deprived the Rengma Nagas, the "legitimate owners", of the land. Both the **KAAC** and the **NCHAC share boundaries with Nagaland.**

Note:

Key Points

➢ **About the Rengma Naga Tribe:**

○ **Found in:**

● Rengma is **a Naga tribe** found in **Nagaland**, **Assam** and **Arunachal Pradesh**.

○ **History**:

● The **first official recording of the Rengma Nagas staying in Assam's Karbi Hills (then known as Mikir Hills)** was made **in 1855** by Major John Butler, a British officer posted in the Northeastern region.

● Butler recorded that the **Rengmas in Karbi Anglong had migrated there from the Naga Hills in the early part of the 18th century,** abandoned many of their tribal customs and married within the local communities.

○ **Festival**: The harvest festival of the Rengmas is called **Ngada.**

➢ **Autonomous District Council (ADC):**

○ **About:**

● The **Sixth Schedule** of the Constitution deals with the administration of the **tribal areas** in the four northeastern states of **Assam, Meghalaya, Tripura and Mizoram.**

■ The special provision is **provided under Article 244 (2) and Article 275** of the Constitution.

● The tribals have been given freedom to exercise legislative and executive powers through an **autonomous regional council** and **ADCs.**

○ **Composition of Autonomous Councils**:

● Each autonomous district and regional council **consists of not more than 30 members,** of which

four are nominated by the governor and the rest via elections. All of them **remain in power for a term of five years.**

● However, the **Bodoland Territorial Council is an exception** as it can **constitute up to 46 members.**

○ **Governor's Control**:

● Despite various degrees of autonomy, the 6th Schedule area **does not fall outside the executive authority of the state concerned.**

● The **governor is empowered to organise and re-organise** the autonomous districts.

○ **Applicability of Central and State Laws:**

● The **Acts passed by Parliament** and **state legislatures** may or may not be levied in these regions unless the **President and the governor gives her or his approval**, with or without modifications in the laws for the autonomous regions.

○ **Civil and Criminal Judicial Powers**: The Councils have also been endowed with wide civil and criminal judicial powers, for example **establishing village courts** etc.

● However, the jurisdiction of these councils is subject to the jurisdiction of the concerned High Court.

○ **Existing Autonomous Councils:** The sixth schedule to the Constitution includes **10 autonomous district councils in 4 states**. These are:

● **Assam**: Bodoland Territorial Council, Karbi Anglong Autonomous Council and North Cachar Hills/Dima Hasao Autonomous Council.

● **Meghalaya**: Garo Hills Autonomous District Council, Jaintia Hills Autonomous District Council and Khasi Hills Autonomous District Council.

● **Tripura**: Tripura Tribal Areas Autonomous District Council.

● **Mizoram**: Chakma Autonomous District Council, Lai Autonomous District Council, Mara Autonomous District Council.

➢ **Arguments of Rengma Naga Peoples' Council (RNPC):**

○ **Rengmas** were the **first tribal people in Assam to have encountered the British in 1839.**

● But the existing **Rengma Hills was eliminated from the political map of the State and replaced with that of Mikir Hills (now Karbi Anglong) in 1951.**

Note:

○ The Rengmas gave shelter to the **Ahom** refugees during the Burmese invasions of Assam in 1816 and 1819.

- The **Ahom are an ethnic group from the Indian states of Assam and Arunachal Pradesh.**

○ The **Rengma Hills and Mikir Hills** were **two separate entities until 1951. The Rengma Hills was partitioned in 1963 between Assam and Nagaland.**

- Karbis have no history in the Rengma Hills.
- At the time of creation of Nagaland State, the **Karbis were known as Mikirs till 1976.**
  - They were the **indigeneous tribal people of Mikir Hills.**

○ The **Karbi Anglong Autonomous Council (KAAC)** population is around 12 lakh and the Karbis constitute only 3 lakh, the remaining are non-Karbis, including the Rengma Nagas, whose population is around 22,000.

➢ **NSCN (I-M) Stand**:

○ The **National Socialist Council of Nagaland or NSCN (Isak-Muivah)** has said that the Rengma issue was one of the important agendas of the "**Indo-Naga political talks**" and no authority should go far enough to override their interests.

○ NSCN (IM) had signed a Naga Peace Accord with the Government of India in August 2015, but the final accord is yet to be finalised.

- One of the most contentious demands of the NSCN (IM) was the **creation of a unified Naga homeland, called 'Greater Nagalim'** by integrating the Naga-inhabited areas of Assam, Manipur and Arunachal with Nagaland.

AISHE-2020

Why in News

Recently, the Union Education Minister announced the release of the report of **All India Survey on Higher Education (AISHE)** 2019-20.

➢ This Report **provides key performance indicators** on the current status of **Higher education in the country.**

➢ It is the **10ᵗʰ** in the series of AISHE **annually released** by the Department of Higher Education.

Key Points

➢ **Total Student Enrolment:**

○ In the **last five years from 2015-16 to 2019-20**, there has been a **growth of 11.4%** in student enrolment.

○ Total Enrolment in Higher Education stands at **3.85 crore in 2019-20** as compared to **3.74 crore in 2018-19**, registering a **growth of 11.36 lakh (3.04 %)**.

- **Uttar Pradesh has highest student enrolment** in India, it has **49.1% male and 50.9% female** students followed by **Tamil Nadu and Maharashtra.**

➢ **Gross Enrolment Ratio:**

○ The Gross Enrollment Ratio (GER) **increased by a minuscule 0.8%** in 2019-20.

- **GER** is the **number of students enrolled in a given level of education**, regardless of age, **expressed as a percentage** of the official school-age population corresponding to the same level of education.

○ The percentage of students belonging to the eligible age group enrolled in higher education in **2019-20 is 27.1%** against **26.3% in 2018-19** and **24.3% in 2014-2015.**

➢ **Female Enrolment:**

○ There has been an overall **increase of over 18%** in female enrolment in higher education from **2015-16 to 2019-20.**

○ However, the **share of girl students is lowest in institutes of national importance** while female participation **in professional courses is lower in comparison to academic courses.**

➢ **Gender Parity Index:**

○ **Gender Parity Index (GPI)** in Higher Education **in 2019-20 is 1.01 against 1.00 in 2018-19** indicating an **improvement in the relative access to higher education for females** of eligible age group compared to males.

- A GPI of 1 indicates parity between the sexes; a GPI that varies between 0 and 1 typically means a disparity in favour of males; whereas a **GPI greater than 1 indicates a disparity in favour of females.**

➢ **Teacher's:**

○ Total Number of Teachers stands at 15,03,156 comprising **57.5% male and 42.5% female.**

- ❍ **Pupil Teacher Ratio** in Higher Education in 2019-20 is **26**.
- ➢ **Attractive Disciplines:**
  - ❍ Nearly 85% of the students (2.85 crore) were enrolled in the six major disciplines such as **Humanities, Science, Commerce, Engineering & Technology, Medical Science and IT & Computer.**
- ➢ **Recent Initiatives:**
  - ❍ **National Education Policy (NEP), 2020:**
    - ● It aims at increasing the GER in higher education to **50% by 2035.**
  - ❍ **Scheme for Promotion of Academic and Research Collaboration (SPARC):**
    - ● It aims at improving the **research ecosystem of India's higher educational institutions** by facilitating academic and research collaborations between Indian institutions and the best institutions in the world.
  - ❍ **Rashtriya Ucchatar Shiksha Abhiyan (RUSA)**:
    - ● It aims at providing **strategic funding to higher educational institutions** throughout the country.
  - ❍ **Prime Minister's Research Fellowship (PMRF):**
    - ● It will attract the talent pool of the country to **doctoral (Ph.D) programmes for carrying out research** in cutting edge science and technology domains, with focus on national priorities.

Online Module for Compiling Out-of-School Children's Data

Why in News

The **Ministry of Education** has developed an **online module for compiling out-of-school (due to Covid-19 pandemic) children's data** identified by each State/UT.

- ➢ The collected data will be mapped with special training centres on the **PRABANDH portal of Samagra Shiksha.**

Key Points

- ➢ **About the Module:**
  - ❍ Through the module, the government will **facilitate age-appropriate admissions of children in the age group of 6-14 years** and those **belonging to socially and economically disadvantaged groups.**
  - ❍ Also, **for out of school children in the 16-18 years age group**, **financial assistance will be provided** for

the first time in the session 2021-22, to continue their education through open/distance learning mode.

- ➢ **About PRABANDH Portal:**
  - ❍ PRABANDH (**PR**oject **A**ppraisal, **B**udgeting, **A**chievements and **D**ata **H**andling System) is **a step towards leveraging technology** to increase efficiency and manage the **implementation of a centrally sponsored integrated scheme for schooling- Samagra Shiksha.**
  - ❍ It is to have **transparency and accuracy** in the System w.r.t Approvals, Releases, Financial Status.
  - ❍ Also **streamline the Financial Management System**, to enable more accurate assessment of actual requirement of funds for implementation.

Samagra Shiksha

- ➢ **Key Provisions:**
  - ❍ Samagra Shiksha is an **integrated scheme for school education extending from pre-school to class XII** to ensure inclusive and equitable quality education at all levels of school education.
  - ❍ It subsumes the three Schemes of **Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE).**
  - ❍ The main emphasis of the Scheme is on improving the quality of school education by focussing on the **two T's – Teacher and Technology.**
- ➢ **Vision:**
  - ❍ It complements the **Sustainable Development Goal (SDG)** for Education , i.e. SDG 4 (Ensure inclusive and equitable quality education and promote lifelong opportunities for all).
  - ❍ It aims to support States in the implementation of the **Right of Children to Free and Compulsory Education (RTE) Act, 2009.**
    - ● Right to Education Act (RTE) is a fundamental right under Article 21-A of the Constitution of India.
    - ● The Act makes education a f**undamental right of every child between the ages of 6 and 14** and specifies minimum norms in elementary schools.
- ➢ **Funding Pattern:**
  - ❍ The Scheme is being implemented as a **Centrally Sponsored Scheme**.

Note:

- The fund sharing pattern for the scheme between Centre and States is at present in the ratio of **90:10 for the North-Eastern States and the Himalayan States** and **60:40 for all other States and Union Territories with Legislature**.
- It is **100% centrally sponsored** for **Union Territories without Legislature.**

➢ **Focus on Digital Education:**
  ○ Support **'Operation Digital Board'** in all secondary schools over a period of 5 years, which will revolutionize education- easy to understand, technology based learning classrooms will become flipped classrooms.
  ○ Digital initiatives like **UDISE+, Shagun,** to be strengthened.
  ○ Strengthening of ICT infrastructure in schools from upper primary to higher secondary level.

Other Important Schemes to Improve Online Education System

➢ **PM eVidya Programme:**
  ○ A programme for multimode access to digital/online education.

➢ **Study Webs of Active Learning for Young Aspiring Minds (SWAYAM):**
  ○ The objective is to ensure that every student in the country has access to the best quality higher education at the affordable cost.

➢ **Integrated Online junction for School Education 'Shagun'**
  ○ It is an overarching initiative to improve the school education system by creating a junction for all online portals and websites relating to various activities of the Department of School Education and Literacy in the Government of India and all States and Union Territories.

➢ **Unified District Information System for Education (UDISE) and UDISE+**
  ○ UDISE, initiated in 2012-13 for elementary and secondary education, is one of the largest **Management Information Systems on School Education** covering more than 1.5 million schools, 9.4 million teachers and almost 250 million children.
  ○ UDISE+ is an updated and improved version of UDISE.

➢ **NISHTHA: Teachers' Training Programme**
  ○ To improve learning outcomes at the elementary level through an Integrated Teacher Training Programme.

➢ **Education Quality Upgradation and Inclusion Programme (EQUIP)**
  ○ A five-year vision plan aiming at ushering transformation in India's higher education system by implementing strategic interventions in the sector over five years (2019-2024).
  ○ Sets out to deliver further on principles of Access, Inclusion, Quality, Excellence and enhancing employability in Higher Education.

Sub-Mission on Agricultural Mechanization Scheme

Why in News

Recently, the Government of India has released funds for various activities of **Farm Mechanization** under the **Sub-Mission on Agricultural Mechanization (SMAM) scheme.**

Key Points

➢ **About:**
  ○ The **Ministry of Agriculture and Farmers Welfare** launched SMAM **in 2014-15.**
  ○ Under it, **subsidy** is provided for purchase of various types of **agricultural equipment and machinery** to the extent of **40-50% for States** other than NER (North Eastern Region) States and **for NER States it is 100% limited to Rs.1.25 lakhs per beneficiary.**
  ○ The agriculture ministry has also developed a Multilingual Mobile App, **'CHC (Custom Hiring Centres)- Farm Machinery'** which connects farmers with Custom Hiring Service Centres situated in their locality.

➢ **Aim:**
  ○ Increasing **the reach of farm mechanization** to **small and marginal farmers** and to the regions and difficult areas where farm power availability is low.

➢ **Objectives:**
  ○ Promoting **'Custom Hiring Centres'** and **'Hi-tech**

Note:

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Hubs of High-Value Machines' to offset the adverse economies of scale arising due to small and fragmented landholding and high cost of individual ownership.

- ❍ **Creating awareness** among stakeholders through demonstration and capacity building activities.
- ❍ Ensuring **performance testing and certification of agricultural machines** at designated testing centres located all over the country.

➢ **Other Related Initiatives:**
- ❍ **Sub-Mission on Agroforestry Scheme.**
- ❍ **National Mission for Sustainable Agriculture.**
- ❍ **National Food Security Mission.**
- ❍ **Rashtriya Krishi Vikas Yojana (RKVY).**
- ❍ **Mission for Integrated Development of Horticulture.**
- ❍ **Pradhan Mantri Krishi Sichayee Yojana (PMKSY).**
- ❍ **Pradhan Mantri Fasal Bima Yojana.**
- ❍ **Paramparagat Krishi Vikas Yojana.**

Agriculture/Farm Mechanization
➢ **About**:
- ❍ Mechanised agriculture is the **process of using agricultural machinery** to mechanise the work of agriculture.

- ❍ To boost up mechanization in the agriculture sector, **improved agricultural implements and machinery are essential inputs**.
➢ **Level of farm Mechanization:**
- ❍ **India stands at about 40-45%** with states such as **UP, Haryana and Punjab having very high** mechanization levels, but **north-eastern states having negligible** mechanization.
- ❍ This level of farm mechanization is still low as compared to countries such as the **US (95%), Brazil (75%)** and **China (57%).**
➢ **Significance**:
- ❍ It plays a **vital role in optimizing the use of land**, water energy resources, manpower and other inputs like seeds, fertilizers, pesticides etc to **maximize the productivity** of the available cultivable area and **make agriculture a more profitable and attractive profession for rural youth.**
- ❍ It is one of the **key drivers for the sustainable development of the agriculture sector.**
➢ **Negative Impact:**
- ❍ Reduce workforce hence **decreases farm employment**.
- ❍ Use of machinery **increases pollution.**

■■■

Economic Scenario

Highlights

- Minimum Support Price
- El Salvador Adopts Bitcoin as Legal Tender
- Global Economic Prospects: World Bank
- World Milk Day

- World Energy Investment Report, 2021: IEA
- US Suspends Retaliatory Tariffs on India
- EU's Generalised Scheme of Preferences

Minimum Support Price

Why in News

In a bid **to encourage crop diversification**, the Central Government has hiked the **Minimum Support Price (MSP)** for **Paddy, Pulses** and **Oilseeds** (for all mandated **Kharif Crops**).

Key Points

➢ **About:**
   ○ The MSP is the **rate at which the government purchases crops from farmers,** and is **based on a calculation of at least one-and-a-half times the cost of production incurred by the farmers.**
   ○ MSP is a "minimum price" for any crop that the government considers as remunerative for farmers and hence deserving of "support".

➢ **Crops under MSP:**
   ○ The **Commission for Agricultural Costs & Prices (CACP) recommends MSPs for 22 mandated crops** and **fair and remunerative price (FRP) for sugarcane.**
      ● **CACP** is an **attached office** of the **Ministry of Agriculture and Farmers Welfare.**
   ○ The mandated crops include **14 crops** of the **kharif season**, **6 rabi crops** and **2 other commercial crops.**
   ○ In addition, the MSPs of **toria and de-husked coconut** are fixed on the basis of the MSPs of rapeseed/mustard and copra, respectively.

➢ **Factors for Recommending the MSP:**
   ○ The CACP considers various factors while recommending the MSP for a commodity, including **cost of cultivation.**

○ It takes into account the **supply and demand situation** for the commodity, **market price trends** (domestic and global) and **parity vis-à-vis other crops**, and **implications for consumers** (inflation), **environment** (soil and water use) and **terms of trade between agriculture and non-agriculture sectors.**

➢ **Three Kinds of Production Cost:**
   ○ The CACP projects three kinds of production cost **for every crop**, **both at state and all-India** average levels.
      ● **'A2':**
         ■ Covers all paid-out costs directly incurred by the farmer in cash and kind on seeds, fertilisers, pesticides, hired labour, leased-in land, fuel, irrigation, etc.
      ● **'A2+FL'**
         ■ Includes A2 plus an imputed value of unpaid family labour.
      ● **'C2'** It is a more comprehensive cost that factors in rentals and interest forgone on owned land and fixed capital assets, on top of A2+FL.
   ○ CACP **considers both A2+FL and C2 costs while recommending MSP.**
      ● CACP reckons only A2+FL cost for return.
      ● However, C2 costs are used by CACP primarily as benchmark reference costs (opportunity costs) to see if the MSPs recommended by them at least cover these costs in some of the major producing States.
   ○ The **Cabinet Committee on Economic Affairs** (CCEA) of the Union government **takes a final decision on the level of MSPs** and other recommendations made by CACP.

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- ➢ **Significance of MSP Hike:**
  - ❍ The added focus on **nutri-rich nutri-cereals** is to incentivise its production in the areas where **rice-wheat cannot be grown** without long term adverse implications for groundwater table.
  - ❍ Concerted efforts have been made over the last few years **to realign the MSPs in favour of oilseeds, pulses and coarse cereals** to encourage farmers shift to larger areas under these crops and adopt best technologies and farm practices, to correct demand - supply imbalance.
- ➢ **Issues with Hike:**
  - ❍ This increase **seems modest keeping in mind the cultivation costs** - particularly on account of diesel used for powering tractors, irrigation pumps and harvester combines - **have gone up.**
  - ❍ Some increases, especially for maize, **did not even keep pace with inflation.**
  - ❍ Further, **absence of assured procurement** means farmers have no incentive to cultivate them.
  - ❍ The announcement comes at a time **when farm unions have been demanding legislation to guarantee MSP for all farmers for all crops**, and a **repeal of three contentious farm reform laws.**
- ➢ **Issues with MSP:**
  - ❍ The major problem with the MSP is **lack of government machinery for procurement for all crops** except wheat and rice, which the Food Corporation of India actively procures under the PDS.
  - ❍ As state governments procure the last mile grain, the farmers of states where the grain is procured completely by the government benefit more while **those in states that procure less are often affected.**
  - ❍ The MSP-based procurement system is also **dependent on middlemen,** commission agents and **APMC** officials, which smaller farmers find difficult to get access to.
- ➢ **Solution:**
  - ❍ The CACP, in its price policy report for the **2018-19 kharif marketing season**, had suggested enactment of a legislation conferring on farmers '**The Right to Sell at MSP**'. This, it felt, was necessary "**to instil confidence among farmers for procurement of their produce".**
  - ❍ The government **should be promoting crop and animal agriculture** that also leads to consumption

of foods rich in proteins, vitamins, minerals and dietary fibre — as opposed to just calories and sugar — by the people.

- ● The right way to do it is **by freezing the MSPs of paddy and wheat,** besides capping their procurement at, say, 10-15 quintal per acre per farmer.

El Salvador Adopts Bitcoin as Legal Tender

Why in News

El Salvador, **a small coastal country in Central America** has become the **first in the world** to adopt **Bitcoin**, as **legal tender.**

- ➢ **Legal tender** is the **legally recognized money** within a given political jurisdiction.

Key Points

- ➢ **Bitcoin:**
  - ❍ **Introduction:**
    - ● Introduced in 2009, it is a type of **cryptocurrency** that enables instant payments to anyone.
      - ■ **Cryptocurrency** is a specific type of **virtual currency**, which is decentralised and protected by cryptographic encryption techniques.
      - ■ **Bitcoin, Ethereum, Ripple** are a few notable examples of cryptocurrencies.
    - ● Bitcoin is based on an **open-source protocol** and is not issued by any **central authority.**
  - ❍ **Use:**
    - ● Originally, Bitcoin was intended to provide an alternative to **fiat money** and become a universally accepted medium of exchange directly between two involved parties.
      - ■ Fiat money is a government-issued currency that is not backed by a commodity such as gold.
- ➢ **Reason behind this Decision:**
  - ❍ Loss on Remittances:
    - ● **El Salvador** relies heavily on **money sent back from workers abroad.**
    - ● Bitcoin adoption may make these **remittances quicker and cheaper.**

Note:

The northern triangle

- ❍ **Boost Financial Inclusion**:
  - It is also expected to **boost financial inclusion** in their country as the majority of the population does not have access to formal banking channels.
- ➤ **Concerns:**
  - ❍ In the absence of a **central regulating authority**, legalizing bitcoin will have potential for **fraud and money laundering, high energy costs and extreme volatility.**
- ➤ **Implications for the Crypto World:**
  - ❍ This could **potentially encourage** other **smaller countries with weaker economies** to open up to **crypto** as an alternative to **fiat currencies**, paving the way for mainstream future adoption worldwide.
  - ❍ Already, **Venezuela and many African countries** have started using cryptocurrencies as a long term store of value, as their currencies are deflating quickly.
- ➤ **Some Lessons for India:**
  - ❍ **Not a Instance for Monetary Policy:**
    - El Salvador does not have its **own monetary policy**, hence, no local currency to protect. It runs on the monetary policy of the US Federal Reserve.
      - ■ Therefore, any changes in Federal Reserve policies will definitely affect the Country. Hence, it is looking at such alternatives.
    - Since, **India has its own currency and a central bank**, therefore coexistence of bitcoin and rupee side by side becomes difficult.
  - ❍ **Impact on Remittances:**
    - The impact **Bitcoin has on remittance inflows** would be worth monitoring for India, which is home to the **largest remittance market in the world.**
      - ■ According to a **World Bank report, India** received over **USD 83 billion** in remittances in **2020.**
  - ❍ **Impact on Money Laundering:**
    - The implication of this move for money laundering is unclear at the moment.
    - Currently, El Salvador is not considered deficient under the **Financial Action Task Force (FATF)** money laundering requirements.
    - However, with large scale cryptocurrency inflows and outflows, it would be expected that El Salvador would comply with the 2019 FATF guidance on Virtual Currencies.
- ➤ **India's Current Stand on Cryptocurrency:**
  - ❍ In 2018, **The Reserve Bank of India (RBI)** issued a circular preventing all banks from dealing in cryptocurrencies. This circular was declared unconstitutional by the **Supreme Court** in May 2020.
  - ❍ Recently, the government has announced to introduce a bill; **Cryptocurrency and Regulation of Official Digital Currency Bill, 2021**, to create a sovereign digital currency and simultaneously ban all private cryptocurrencies.
  - ❍ In India, the funds that have gone into the Indian blockchain start-ups account for less than 0.2% of the amount raised by the sector globally.
  - ❍ The current approach towards cryptocurrencies makes it near-impossible for blockchain entrepreneurs and investors to acquire much economic benefit.

Global Economic Prospects: World Bank

Why in News

Recently, the **World Bank** has released its **June 2021 Global Economic Prospects** where it has **forecast India's GDP growth to be 8.3% for the year 2021-22.**

Key Points

- ➤ **GDP Estimate:**
  - ❍ **For India:**
    - India's economy is expected to grow **at 8.3%** for Fiscal Year **2021-22**, **7.5%** for **2022-23** and **6.5%** for **2023-24.**

○ **For World:**
- The world economy is expected to expand **5.6%**, the **fastest post-recession growth rate in eighty years.**
- However, **global output will still be 2% below pre-pandemic projections** by year-end.

OTHER HIGHLIGHTS

▶ The World Bank predicts global growth of 5.6% this year, up from 4.1% forecast in January. That will be fueled largely by a 6.8% expansion in the U.S. and 8.5% in China

▶ Growth in low-income countries is expected to be the second-

slowest of the past 20 years at 2.9% — down from the 3.4% forecast in January, held back by lack of access to vaccines

▶ Global recovery could falter once policy support is withdrawn

▶ Developing nation per-capita income will be slower to recover

➢ **Cause:**
  ○ **For FY 2020-21:**
  - The projected growth **compares to the worst ever contraction of 7.3% in FY 2020-21** and **4% expansion in 2019-20.**
  - India's recovery is **being hampered by the largest outbreak of any country** since the beginning of the pandemic.
  ○ **For FY 2021-22:**
  - The forecast for FY22 (8.3%) factors in **expected economic damage from an enormous second Covid-19 wave** and localised mobility restrictions since March 2021.
  ○ **For FY 2022-23:**
  - **Growth is expected to slow to 7.5%** as a **result of the pandemic's lingering effects** on the financial position of households, companies and banks and possibly low levels of consumer confidence and heightened uncertainty around job and incomes.

➢ **Steps Taken by India:**
  ○ The **Reserve Bank of India (RBI)** announced **measures** to provide liquidity to Micro, Small and Medium firms (MSMEs), and loosened regulatory requirements on the provisioning for non-performing assets.
  ○ **Fiscal policy** shifted in the **FY 2021/22 budget** toward higher expenditure targeted at healthcare and infrastructure to boost the post-pandemic recovery.

➢ **Suggestions:**
  ○ Globally **coordinated efforts are essential** to

accelerate **vaccine distribution and debt relief,** particularly for low-income countries.
  ○ As the health crisis eases, policymakers will **need to address the pandemic's lasting effects** and take steps to **spur green, resilient, and inclusive growth** while safeguarding **macroeconomic stability.**
  ○ For low-income countries, **policies focusing on scaling up social safety net programs, improving logistics and climate resilience of local food supply** would be more helpful.

Key Terms
➢ **Gross Domestic Product**
  ○ GDP is a **measure of economic activity** in a country. It is the total value of a country's annual output of goods and services. It gives the economic output from the **consumers' side.**
  ○ GDP = Private consumption + Gross investment + Government investment + Government spending + (exports-imports).
➢ **Recession and Depression**
  ○ **Recession:** It is a macroeconomic term that refers to a **slowdown or a massive contraction** in economic activities for a long enough period, or it can be said that when a recession sustains for long enough, it is called a recession.
  ○ **Depression:** It is a deep and long-lasting period of **negative economic growth**, with output falling for at **least 12 months** and GDP falling by **over 10%** or it can be referred to as a **severe and prolonged recession.**
➢ **Fiscal Policy**
  ○ Fiscal policy refers to the **use of government spending and tax policies to influence economic conditions.**
  ○ During a recession, the government may employ **expansionary fiscal policy** by lowering **tax rates** to increase aggregate demand and **fuel economic growth.**
  ○ In the face of mounting **inflation** and other **expansionary symptoms**, a government may pursue **contractionary fiscal policy.**

World Bank

➢ **About:**
  ○ The **Bretton Woods Conference held in 1944**, created 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 institution**s working for sustainable solutions that reduce poverty and build shared prosperity in developing countries.

➢ **Members:**

○ It has **189 member countrie**s. **India is also a member** country.

➢ **Major Reports:**

○ **Ease of Doing Business.**

○ **Human Capital Index.**

○ **World Development Report.**

○ **Migration and Development Brief.**

○ Global Economic Prospects.

➢ **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 ICSID.**

World Milk Day

Why in News

Every year, the **first day of June is observed as World Milk Day.**

➢ On the occasion, the **Ministry of Fisheries, Animal Husbandry & Dairying** announced the launch of the **Gopal Ratna Awards** and integration of **e-Gopala App with UMANG platform.**

Key Points

➢ **About**:

UMANG Platform

➢ **Unified Mobile Application for New-age Governance (UMANG) Mobile App** is a **unified, secure, multi-channel, multi-platform, multi-lingual, multi-service mobile app** launched under the **Digital India initiative** of the Ministry of Electronics and Information Technology (MeitY) in 2017.

➢ It is a unified application that can be **used to avail a number of pan India e-government services** such as: Filing income tax, **Employees Provident Fund Organization (EPFO)** services, **Aadhar**, **Pension**, **ePathshala**, e- Land Records, **Crop Insurance** etc.

○ World Milk Day was **established by the Food and Agriculture Organisation (FAO) in 2001**. The day is intended to provide an opportunity **to bring attention to activities that are connected with the dairy sector**.

- FAO is **one of the specialised agencies of the United Nations** that leads international efforts to defeat hunger.

➢ **2021 Theme:**

○ Theme will **focus on Sustainability in the dairy sector** with messages around the environment, nutrition and socio-economics.

- In doing so it will reintroduce dairy farming to the world.

➢ **Gopal Ratna Awards:**

○ They are **National Awards for the Cattle and Dairy sector,** the awards have been launched to **promote the best herd of Indigenous Breed** and **practicing best management practices** and it will be given in three categories:

- Best Dairy farmer.

- Best Artificial Insemination Technician (AIT).

- Best Dairy Cooperative/ Milk producer Company/ **Farmers Producer Organisation.**

➢ **e-Gopala (Generation of wealth through Productive Livestock) App:**

○ It is a **comprehensive breed improvement marketplace and information portal** for direct use of farmers.

○ It provides solutions on the aspects of:

- **Managing livestock** including buying and selling of disease-free germplasm in all forms (semen, embryos, etc.).

Note:

- **Availability of quality breeding services** (Artificial Insemination, veterinary first aid, vaccination, treatment, etc.).
- ➤ **Other Initiatives Related to the Dairy sector:**
  - ○ **National Action Plan on Dairy Development 2022:** It seeks to increase milk production and double the income of dairy farmers.
  - ○ **National Animal Disease Control Programme & National Artificial Insemination Programme:** It was launched to control and eradicate the Foot & Mouth Disease (FMD) and Brucellosis amongst the livestock in the country,
  - ○ **Pashu-Aadhar:** It is a unique ID on a digital platform for traceability for the animals.
  - ○ **Rashtriya Gokul Mission:** It was launched in 2019 for setting up of 21 Gokul Grams as Integrated Cattle Development Centres.

Operation Flood (White Revolution)

- ➤ **About**:
  - ○ The White Revolution in India was the brainchild of **Dr Verghese Kurein.** Under him many important institutions were established like the **Gujarat Cooperative Milk Marketing Federation Ltd** and the **National Dairy Development Board (NDDB).**
  - ○ The White Revolution was started by the NDDB in the 1970s and the bedrock of the revolution has been the **village milk producers' cooperatives**.
- ➤ **Phases of the Revolution:**
  - ○ **Phase I:**
    - It started **from 1970 and lasted for 10 years i.e. till 1980.** This phase was **financed by the sale of butter oil and skimmed milk powder** donated by the **European Union** through the World Food Program.
  - ○ **Phase II:**
    - It lasted for **five years from 1981 to 1985**. During this phase, the number of **milk sheds increased** from 18 to 136, **milk outlets were expanded** to about 290 urban markets, **a self-sustaining system was set up** that included 4,250,000 milk producers spread across 43,000 village cooperatives.
  - ○ **Phase III:**
    - It also **lasted for almost 10 years i.e. 1985-1996.** This phase **enabled the dairy cooperatives to**

expand and gave a finishing touch to the programme. It also strengthened the infrastructure required to procure and market increasing volumes of milk.

- ➤ **Objectives:**
  - ○ Increase milk production ("a flood of milk").
  - ○ Increase rural incomes.
  - ○ Reasonable prices for consumers.
- ➤ **Significance**:
  - ○ It helped dairy farmers direct their own development, placing control of the resources they create in their own hands.
  - ○ It has helped India become the largest producer of milk in the world in 2016-17.
    - Currently, **India is the world's largest milk producer, with 22% of global production.**

World Energy Investment Report, 2021: IEA

Why in News

Recently, the **International Energy Agency (IEA)** published the **World Energy Investment Report, 2021. Global energy investment, 2017-21.**
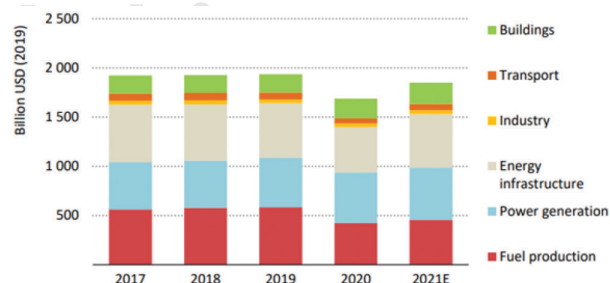
Key Points

- ➤ **Increased Investment in Energy Sector:**
  - ○ Global energy **investment is expected to rebound in 2021 and increase 10%** year-on-year to around **USD 1.9 trillion.**
  - ○ Most of this investment **will flow towards power and end-use sectors,** shifting out of traditional fossil fuel production.
  - ○ The scenario is perfectly **aligned with the projection that global energy demand will rise 4.6% year-on-year in 2021**, offsetting its contraction in 2020.

Note:

- ➤ **Renewable Energy:**
  - ○ Renewable power **will have the largest share** - around 70% of the total will be spent on new power generation capacity.
  - ○ There will be **substantial gain of renewable energy** as the future energy outlook has been dependent on technological development, well-established supply chain and demand from consumers for carbon-neutral electricity.
- ➤ **Fossil Fuels:**
  - ○ Upstream (production and exploration) **investment in oil is expected to grow 10%.** This expansion in fossil fuels was planned with novel technologies like **Carbon Capture and Storage (CCS)** and **bioenergy** CCS, which are yet to attain commercial success.
  - ○ The increment of **coal-fired power in 2020, mostly driven by China, is indicating that coal is down but not yet out.**
- ➤ **Increased Emissions:**
  - ○ The above **positive scenarios will still not deter the increase in carbon dioxide emission,** after contraction in 2020 mainly due to economic slowdown induced by the novel coronavirus pandemic.
    - Global emission is **set to grow by 1.5 billion tonnes in 2021.**
  - ○ Many developing nations' **supporting policy and regulatory frameworks are not yet aligned with long-term net-zero goals.**
    - **Net zero emissions** refers to achieving an overall balance between **greenhouse gas** emissions produced and greenhouse gas emissions taken out of the atmosphere.
  - ○ In many **Emerging Market and Developing Economies (EMDEs),** investment in renewables was hit harder by **Covid-19** than in developed nations – and now many EMDEs have prioritised coal and oil in recovery plans.
- ➤ **Reasons of Increased Emissions:**
  - ○ The **emerging market is almost 70% responsible** for demand growth and **India plays an important part in this block.**
  - ○ **China is showing a tremendous expansion in coal-based power production** — their coal

consumption in December 2020 was a historic high — though the country has a commendable renewable growth.

- ○ The **responsibility-share of developed nations should not be undermined**. Their in-country **growth of emission is moderate but their exported emission is of concern.**
  - **Australia's** exported emission through coal is double its domestic emission.
- ○ Although the US has shown renewed commitment to the multilateral **United Nations** system for tackling **climate change** by re-joining the **Paris agreement**. Its fascination with cheap shale gas is creating an investment distortion and **adversely affecting the sustainability of developmental pathways of countries like India.**

International Energy Agency
- ➤ **About**:
  - ○ It is an **autonomous Intergovernmental Organisation established in 1974** in Paris, France.
  - ○ IEA mainly **focuses on its energy policies** which include e**conomic development, energy security and environmental protection**. These policies are also known as the **3 E's of IEA.**
- ➤ **India and IEA:**
  - ○ **India became an Associate member of IEA in March 2017** but it was in engagement with IEA long before its association with the organization.
  - ○ Recently, India has inked a **Strategic Partnership Agreement with the IEA** to strengthen cooperation in global energy security, stability and sustainability.
- ➤ **IEA Clean Coal Centre**:
  - ○ It is dedicated to providing independent information and analysis on how coal can become a cleaner source of energy, compatible with the UN Sustainable Development Goals.
- ➤ **Reports:**
  - ○ **World Energy Investment Report, World Energy Outlook Report** , **Global Energy Review.**
  - ○ Recently, it has released the **India Energy Outlook 2021 Report and Net Zero by 2050, World's first comprehensive energy roadmap.**

US Suspends Retaliatory Tariffs on India

Why in News

Recently, the US **suspended imposition of retaliatory tariffs** against six countries, including India, that had begun imposing **digital services tax** on companies such as Google and Facebook.

➢ Other than India, the countries slapped with this tariff proposal are **Austria, Italy, Spain, Turkey, and the United Kingdom.**

Digital Services Taxes

➢ **DSTs** are the **adopted taxes on revenues that certain companies generate from providing certain digital services**. E.g. digital multinationals like Google, Amazon and Apple etc.

➢ The **Organisation for Economic Cooperation and Development (OECD)** is currently hosting **negotiations with over 130 countries that aim to adapt the international tax system.** One goal is to address the tax challenges of the digitalization of the economy.

   ○ Some experts argue that a **tax policy designed to target a single sector or activity is likely to be unfai**r and have complex consequences.

   ○ Further, the **digital economy cannot be easily separated out from the rest of the global economy.**

Key Points

➢ **Background:**

   ○ Tariffs were imposed after the office of the **United States Trade Representative (USTR)** noted that the **Digital services taxes adopted by India, Italy and Turkey discriminate against US companies** and are inconsistent with international tax principles.

      ● **Under Section 301** of the **Trade Act of 1974,** the **USTR enjoys a range of responsibilities and authority to investigate and take action** to enforce US national interests under trade agreements and respond to certain foreign trade practices.

➢ **Reason for Suspension:**

   ○ **Multilateral Solution:**

      ● To **allow time for ongoing international tax negotiations** to continue. The US is **seeking a multilateral solution** while maintaining the option of imposing tariffs under **Section 301** if warranted in the future.

   ○ **Damage to Global Economy:**

      ● The six countries potentially impacted are passing through a weak post **Covid-19** recovery and **opening a new trade war front could be damaging** not only to them, but also to the broader global economy.

      ● The **combination of depressed economic activity** owing to the effects of the **pandemic** and tectonic **shifts in global supply chains** engendered by the **US' trade war with China** has **already left many economies in a weakened condition.**

   ○ **Change in Administration:**

      ● Under the previous US government (Trump) USTR **was used to promote what his administration considered to be free, fair and reciprocal trade**, specifically to close the gap or **balance of trade** between the US and foreign governments.

      ● However, the new administration (Biden) appears to be **seeking a middle path of waving the stick of the USTR** while **allowing some space for continued tax negotiations with the nations concerned.**

➢ **Impact on India:**

   ○ **Loss of Revenue:**

      ● The **tax levied by the Finance Bill, 2021, could yield approximately USD 55 million annually.**

      ● Negotiations with the US that may result in the scaling back of this tax would **imply that a part of this revenue would be lost to the exchequer**, depending on the final rate agreed.

   ○ **Impact on Exports:**

      ● Close to **USD 118 million of India's exports** to the US would be subject to the **tariff proposed by the USTR, impacting 26 categories of goods such as:**

         ■ Basmati rice, cigarette paper, cultured pearls, semi-precious stones, certain gold and silver jewellery items and specific types of furniture products.

   ○ **Growth Prospects:**

Note:

- Any escalation matrix of retaliatory taxation with the US **would damage its growth prospects at a crucial point in its laborious recovery.**
- However, India will also not be able to **simply abandon its articulated intent to tax global tech firms,** which have generally enjoyed low-tax operations across numerous jurisdictions.

India's Tax on Digital Companies

➤ The government had moved an **amendment in the Finance Bill 2020-21 imposing a 2% digital service tax (DST)** on trade and services by non-resident e-commerce **operators with a turnover of over Rs. 2 crore.**
- ❍ This effectively expanded the scope of equalisation levy that, till last year, only applied to digital advertising services.
- ❍ Earlier, the **equalisation levy (at 6%) was intro-duced in 2016 and imposed on the revenues generated on business-to-business** digital advertisements and allied services of the resident service provider.

➤ The new levy **came into effect from 1st April 2020.** E-commerce operators are obligated to pay the tax at the end of each quarter.

➤ The idea is to **tax payments made to offshore entities which do not have a physical presence** here and therefore the income tax department cannot subject such income earned from India to tax.

EU's Generalised Scheme of Preferences

Why in News

Recently, a resolution was adopted by the European Parliament, urging the **European Union** (EU) Commission to **consider the temporary withdrawal of the Generalised Scheme of Preferences Plus (GSP+) status given to Sri Lanka.**

➤ Sri Lanka regained the GSP +, or the EU's Generalised Scheme of Preferences in 2017.

➤ The EU is **Sri Lanka's second-largest trading partner after China and its second main export destination**.

Key Points

➤ **About:**

- ❍ The Generalised Scheme of Preferences (GSP) is **a set of EU rules allowing exporters from developing countries to pay less or no duties on their exports** to the European Union.
  - It **helps developing countries to alleviate poverty and create jobs** based on international values and principles, including labour and human rights.
- ❍ The EU's GSP is **widely recognised as the most progressive in terms of coverage and benefits.**

➤ **Types**:
- ❍ **Standard GSP:**
  - For **low and lower-middle income countries.** This means a **partial or full removal of customs duties on two thirds of tariff lines.**
  - **Developing countries** are automatically granted GSP if they are **classified as having an income level below "upper middle income" by the World Bank** and do not benefit from another arrangement (like a **Free Trade Agreement**) granting them preferential access to the EU market.
  - **Beneficiaries**: Bangladesh, Cambodia and Myanmar.
- ❍ **GSP+:**
  - The **special incentive arrangement for sustainable development and good governance**.
  - It **slashes these same tariffs (that under standard GSP) to 0% for vulnerable low and lower-middle income countries** that implement international conventions related to **human rights**, **labour rights**, protection of the environment and good governance.
  - **Beneficiaries:** Armenia, Bolivia, Cabo Verde, Kyrgyzstan, Mongolia, Pakistan, The Philippines and Sri Lanka.
- ❍ **EBA (Everything But Arms):**
  - The special arrangement **for least developed countries**, **providing them with duty-free, quota-free access for all products except arms and ammunition.**
➤ **Monitoring Beneficiaries:**
- ❍ The EU **continuously monitors and reviews GSP+ beneficiary countries'** effective implementation of the **international conventions on human rights, labour rights, environmental protection, and good governance.**

Note:

○ This monitoring includes exchanges of information, dialogue and visits and involves various stakeholders, including civil society.

Generalised System of Preferences

➢ **About:**

○ **Generalized System of Preferences** is an umbrella that comprises the bulk of **preferential schemes granted by industrialized nations to developing countries.**

○ It involves reduced **Most Favored Nations (MFN)** Tariffs or duty-free entry of eligible products exported by beneficiary countries to the markets of donor countries.

○ The idea of granting developing countries preferential tariff rates in the markets of industrialized countries was originally presented at the first **United Nations Conference on Trade and Development (UNCTAD)** conference in **1964.**

○ The GSP was adopted at **UNCTAD** in New Delhi in 1968 and was instituted in 1971.

● There are currently **13 national GSP schemes notified to the UNCTAD secretariat.**

➢ **Countries which Grant Generalized System of Preferences:**

○ Australia, Belarus, Canada, EU, Iceland, Japan, Kazakhstan, New Zealand, Norway, Russian Federation, Switzerland, Turkey and the United States of America.

● In **2019**, **US terminated India's designation as a beneficiary developing nation under its GSP trade programme.** This was done after determining that India has not assured the US that it will provide "equitable and reasonable access" to its markets.

➢ **Benefits**:

○ **Improves Growth:**

● **Improves Economic growth and development** in the developing world by helping beneficiary countries to increase and diversify their trade with the developed nations.

○ **Provides Employment:**

● Moving GSP imports from the docks to consumers, farmers, and manufacturers supports tens of thousands of jobs in the developed nation.

○ **Boosts Company Competitiveness:**

● It is boosted by the GSP as it reduces costs of imported inputs used by companies to manufacture goods.

○ **Promotes Global Values:**

● It **promotes Global values by supporting beneficiary countries** in affording worker rights to their people, enforcing intellectual property rights, and supporting the rule of law.

UNCTAD

➢ It is a **permanent intergovernmental body** established by the United Nations General Assembly in 1964. It is headquartered at **Geneva in Switzerland.**

➢ It **supports developing countries to access the benefits of a globalized economy** more fairly and effectively.

➢ It has 194 member nations. **India is a member.**

➢ Some of the reports published by it are:

○ **Trade and Development Report**

○ **Investment Trends Monitor Report**

○ **World Investment Report**

○ The Least Developed Countries Report

○ Information and Economy Report

○ **Technology and Innovation Report**

○ Commodities and Development Report

Most Favored Nations (MFN)

➢ As per the **World Trade Organisation's (WTO)** General Agreement on Tariffs and Trade MFN principle, each of the WTO member countries should "treat all the other members equally as 'most-favoured' trading partners."

➢ According to the WTO, though the term 'MFN' "suggests special treatment, it actually means nondiscrimination."

■■■

International Relations

Highlights

- Joint Statement on Multilateralism: BRICS
- SCO Agreement on Mass Media Cooperation
- India-Australia Meeting
- India Abstains from Latest Resolution Against Israel
- Maldives' UNGA Presidency
- Atlantic Charter
- 47th G7 Summit

Joint Statement on Multilateralism: BRICS

Why in News

The **BRICS** Foreign Ministers, in a recent meet, put out a joint statement on **multilateralism.**

➢ **BRICS** is an acronym for the **grouping of** the world's leading emerging economies, namely **Brazil, Russia, India, China and South Africa.**

Key Points

➢ **Multilateralism:**
- ○ **Meaning:**
  - It is the **process of organizing relations** between **groups of three or more states.**
  - It **generally comprises certain qualitative elements or principles that shape the character of the arrangement** or institution. These principles are:
    - ■ **Indivisibility of interests** among participants.
    - ■ Commitment to **diffuse reciprocity**, i.e. mutual exchange.
    - ■ System of **dispute settlement** intended to enforce a particular mode of behaviour.
- ○ **Significance:**
  - Multilateral institutions have played a significant role in **post-war global governance** and are arguably **more stable** than other forms of organization because the **principles** underlying them appear to be more **durable and more able to adapt** to external changes.
- ○ **Need:**
  - **Increasing Incidences of Lawfare:**
    - ■ It means the misuse of **existing International and national laws** by several countries (via forced technology requirements, intellectual property rights violations, and subsidies), to gain an unfair advantage over other countries.
    1. The imposition of **extraterritorial sanction (under CAATSA) by the US** has affected development in developing economies like India and China.
    2. Paralysis of the **World Trade Organization (WTO)**, due to the tussle between the developed and developing world.
  - Dual Use of Global Supply Chain:
    - ■ Some of the developed countries have **jurisdiction and control over global supply chains**. Due to growing convergence between commercial interests and strategic goals, these supply chains enable them to have **vast extraterritorial influence** and have created **new power asymmetries.**
    1. **China through BRI** (Belt and Road Initiative) is enhancing its role in global economic governance.
    2. There are fears pertaining to dual-use (commercial viability and military application) of **Industrial Revolution 4.0.**
  - **Lack of Global Framework:**
    - ■ The global community has not been able to come on a single platform or frame a **Global Agenda** on issues related to **terrorism, Climate Change, cybersecurity etc.**

Note:

- Also, due to the lack of any global public health framework, **Covid-19** has spread into a pandemic.
➢ **Six Principles laid out by BRICS for the task of Strengthening and and Reforming the Multilateral System:**
  ○ First, it should make **global governance** more inclusive, representative and participatory to facilitate greater and more meaningful participation of developing and least developed countries.
  ○ Second, it should be **based on inclusive consultation** and **collaboration** for the benefit of all.
  ○ Third, it should make **multilateral organisations more responsive**, **action-oriented** and **solution-oriented** based on the norms and principles of international law and the spirit of mutual respect, justice, equality, and mutually beneficial cooperation.
  ○ Fourth, it should use **innovative and inclusive solutions**, including digital and technological tools.
  ○ Fifth, it should **strengthen the capacities of individual States** and **international organizations**.
  ○ Sixth, it should promote **people-centered international cooperation** at the core.

BRICS
➢ BRICS is an acronym for the grouping of the world's leading emerging economies, namely **Brazil, Russia, India, China and South Africa.**
➢ In **2001**, the **British Economist Jim O'Neill** coined the term BRIC to describe the four emerging economies of Brazil, Russia, India, and China.
➢ The grouping was **formalised** during the first meeting of BRIC Foreign Ministers' in **2006.**
➢ **South Africa** was invited to **join BRIC in December 2010**, after which the group adopted the acronym **BRICS.**
➢ **India** has assumed the **BRICS Presidency** from **January 2021.**

Structure
➢ BRICS **does not exist in the form of organization**, but it is an **annual summit** between the **supreme leaders of five nations.**
➢ The **Chairmanship** of the forum is **rotated annually** among the members, in accordance with the acronym B-R-I-C-S.

SCO Agreement on Mass Media Cooperation

Why in News

The Union Government approved the signing and ratification of an Agreement on '**Cooperation in the field of Mass Media**' between all the Member States of **Shanghai Cooperation Organization (SCO)**.

➢ The Agreement was **signed in June 2019.** It will provide an opportunity for the Member States **to share new innovations and best practices** in the field of Mass Media.

Key Points

➢ **Main Areas of Cooperation:**
  ○ Creation of **a favorable system for mutual and wide distribution of information via Mass Media** in a bid **to deepen the knowledge about the lives of the people of their States.**
  ○ **Cooperation** among the **Editorial Offices of the Mass Media** of their States as well as between the **relevant Ministries, Agencies,** and Organizations in the field of Mass Media.
  ○ Promoting equal and mutually beneficial **cooperation between professional associations of journalists** of the States.
  ○ **Aiding broadcast of television and radio programs** and those distributed legally within the territory of the State.
  ○ Encouraging the exchange of specialists and experience in the field of Mass Media, offer **mutual assistance in training media professionals**, and promote cooperation between **scientific research** and educational institutions in the field of Mass Media.
➢ **Shanghai Cooperation Organisation (SCO):**
  ○ **About:**
    • **SCO** is a **permanent intergovernmental international organisation.**
    • It's a **Eurasian** political, economic and military organisation aiming to maintain peace, security and stability in the region.
  ○ **Formation:**
    • It was **created in 2001.**

- The **SCO Charter** was signed **in 2002**, and entered **into force in 2003.**
  - ○ **Official Language:**
    - The SCO's official languages are **Russian and Chinese.**
  - ○ **Members:**
    - **Eight countries** are part of SCO, **which are:** Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, Uzbekistan, India and Pakistan.
  - ○ SCO has **two Permanent Bodies:**
    - SCO **Secretariat in Beijing (China)**, and
    - Executive Committee of the **Regional Anti-Terrorist Structure (RATS)** in **Tashkent (Uzbekistan).**
  - ○ The **Chairmanship of SCO** is **by rotation for a year by Member States.**
    - The **Republic of Tajikistan** has assumed **chairmanship of SCO for 2021-22.**
  - ○ The **20th Summit of the SCO** took place **in 2020.**
  - ○ Recently, the Vice President of India has launched the **first ever SCO Online Exhibition on Shared Buddhist Heritage.**

India-Australia Meeting

Recently, India and Australia reviewed **cooperation in the sectors of agriculture and defence.**

Key Points

➢ **In the field of Agriculture:**
  - ○ The **India-Australia Grains Partnership** aims to use Australia's expertise in post harvest management to strengthen rural grain storage and supply chains so as to reduce losses and wastage.
    - **National Institute of Agricultural Marketing** will be the **nodal organisation from India.**
  - ○ The flagship program of **National Innovation for Climate Resilient Agriculture (NICRA)** was mentioned and collaboration could be set up with the research organisations of Australia.
    - **NICRA** is **a network project of the Indian Council of Agricultural Research (ICAR)** launched in February 2011.
    - The project aims to enhance the resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration.

- The research on adaptation and mitigation covers crops, livestock, fisheries, and natural resource management.

➢ **On Defence Cooperation:**
  - ○ Participation of Australia in **Exercise Malabar.**
    - After the **Ladakh confrontation**, **India extended the invitation to Australia** and an Australian contingent participated in the **2020 Malabar exercises.**
  - ○ Various bilateral defence cooperation initiatives like **AUSINDEX, Mutual Logistic Support Arrangement (MLSA)** and **Defence Science & Technology Implementing Arrangement (DSTIA)** were reviewed.
  - ○ Expressed an intent to convene the **2+2 Ministerial Dialogue** at the earliest.
    - **2+2 Ministerial Dialogue** is a format of dialogue where the **defense and foreign ministers meet with their counterparts** from another country. It is the **highest-level institutional mechanism** between the two countries.

➢ **India-Australia Ties:**
  - ○ **On the Covid-19 front**, Australia has sent oxygen, ventilators and Personal Protective Equipment (PPE) kits to India as part of an immediate support package.
  - ○ The trade Ministers of **India, Japan and Australia** have formally launched the **Supply Chain Resilience Initiative (SCRI).**
  - ○ Recently, **India-Australia Circular Economy Hackathon (I-ACE)** was organised.
  - ○ Both countries upgraded their relationship to a **Comprehensive Strategic Partnership** and signed **multiple defence agreements in 2020.**
  - ○ India and Australia co-operate in various **multilateral fora.**
    - Australia supports India's candidature in an expanded **UN Security Council.**
    - Both India and Australia are members of the **Quad**, **Commonwealth, Indian Ocean Rim Association (IORA), ASEAN Regional Forum, Asia Pacific Partnership on Climate and Clean Development,** and have participated in the **East Asia Summits.**
    - Both countries have also been cooperating as members of the **Five Interested Parties (FIP)** in the **World Trade Organization** context.

Note:

- Australia is an important player in **Asia Pacific Economic Cooperation (APEC)** and supports India's membership of the organisation.
  ○ A **Civil Nuclear Cooperation Agreement** between the two countries was signed in September 2014.
  ○ The **Mutual Legal Assistance Treaty (MLAT) and the Extradition Treaty** between India and Australia, which were signed in June 2008, have been ratified by both the Governments.
  ○ Both sides are also likely to **explore other options** such as a **closer intelligence relationship**, and in other areas such as **high technology and outer space**.

India Abstains from Latest Resolution Against Israel

Why in News

Recently, **Palestine blamed India for suppressing its human rights of all people** as India abstained from the latest resolution on the Palestinian issue.

➤ **India abstained from voting on a resolution** at the **United Nations Human Rights Council** (UNHRC) that came up in the backdrop of the latest round of **conflict between Israel and Gaza strip,** the coastal part of the Palestinian territories.

➤ UNHRC is a**n inter-governmental body** within the **United Nations** (UN) system responsible for **strengthening the promotion and protection of human rights around the world.**

Key Points

➤ **The Resolution:**
  ○ It called on the UNHRC **to set up a permanent commission to probe human rights violations in Gaza**, West Bank and Palestine.
  ○ It was **adopted with the vote of 24 members**. Nine voted against, and 14, including India, abstained.
    ● Among the **countries that abstained** on the vote, along with India, were France, Italy, Japan, Nepal, the Netherlands, Poland, and South Korea.
    ● China, Pakistan, Bangladesh, and Russia were **among those who voted in favour**; Germany, the UK, and Austria **voted against the resolution.**

○ As it was passed, an **independent commission of inquiry** was formed to investigate **violations of international law by Israel.**

➤ **Palestine's Stand:**
  ○ The **resolution** is not an aberration to the Human Rights Council. It is the **by-product of extensive multilateral consultations.**
  ○ It is the **consolidation of years and thorough investigations into and reporting on Israel's grave violations** by States, UN's experts, Human Rights Treaty bodies, and international organisations.
    ● The Palestinian people were **deprived of applicability of international human rights law.**
    ● The **root causes of the injustice** against the Palestinian people was **dispossession, displacement, colonisation by Israel.**
  ○ Therefore, **India's abstention stifles the important work of Human Rights Council** at advancing human rights for all peoples, including those of the Palestinian people.
    ● India **missed an opportunity to join the international community** at this turning point, both crucial and long overdue, on the path to accountability, justice and peace.

Note:

➤ **Till Date India's Position on Israel-Palestine Issue:**
  ○ India **recognised Israel in 1950** but it is also the **first non-Arab country to recognise Palestine Liberation Organisation (PLO)** as the sole representative of the Palestinian.
    ● India is also **one of the first countries to recognise the statehood of Palestine in 1988.**
  ○ In **2014**, India **favored UNHRC's resolution to probe Israel's human rights violations in Gaza.** Despite supporting the probe, **India abstained from voting against Israel in UNHRC in 2015.**
  ○ As a part of Link West Policy, **India has de-hyphenated its relationship with Israel and Palestine in 2018** to treat both the countries mutually independent and exclusive.
  ○ In June 2019, India **voted in favor of a decision introduced by Israel** in the **UN Economic and Social Council (ECOSOC)** that objected to granting consultative status to a Palestinian non-governmental organization.
  ○ In March 2021, **International Criminal Court (ICC)** launched investigations into the war crimes in **Palestinian territories occupied by Israel (West Bank and the Gaza Strip).**
    ● **Israel wanted India to take a stand against it**, however it did not happen.
  ○ So far, India has **tried to maintain the image of its historical moral supporter for Palestinian self-determination**, and at the same time to **engage in the military, economic, and other strategic relations with Israel.**

Maldives' UNGA Presidency

Why in News

Recently, the Maldives' Foreign Minister **Abdulla Shahid** was elected the **President of the 76th session of the United Nations (UN) General Assembly(GA)** for 2021-22.

➤ The win was **welcomed by India** as Indian diplomats had been helping the Maldives and **India expects close cooperation with Maldives at the UN**.

➤ However, **the Maldives has made no decision** on opening an **Indian consulate in its southern Addu Atoll** even as the Indian Cabinet cleared a proposal for it.

Maldives

Indian Ocean

Key Points

➤ **President of UNGA:**
  ○ This is a **post held on an annual basis,** rotated amongst various regional groupings. The **76th session (2021-22) is the turn of the Asia-Pacific group**. This is the first time Maldives will be occupying the office of the President of UNGA.
  ○ Maldives also sees it as a win for the 52-member **Small Island Developing States (SIDS)**, which are battling climate change vulnerability and other developmental challenges.

➤ **Addu Atoll:**
  ○ Addu Atoll, also **known as Seenu Atol**l, is the **southernmost atoll of the Maldives.**
    ● Apart from its **strategic location in the Indian Ocean**, Addu is the second largest city in the archipelago, home to over 30,000 people.

➤ **India's Stand:**
  ○ India approved the opening of a new consulate in the Maldivian city of Addu, in reflection of the **importance India attaches to its ties with the strategically located island nation.**
  ○ India's decision to expand its diplomatic presence in the Maldives comes amid **China's consistent efforts to increase its influence in the island nation.**
  ○ Also Indian rationale for the consulate was **to help Addu residents with speedy visa services.**

➤ **Opposition of the Initiative:**
  ○ Some Maldivians **see a new consulate with suspicion**, especially on the heels of a USD 33-million **Maldivian police training facility that India is helping build in Addu.**
    ● There is already an Indian Embassy in **Male.**

Note:

- ➢ **Geo-Strategic Importance of Maldives to India:**
  - ❍ **Maldives, a Toll Gate in Indian Ocean:**
    - Located at the southern and northern parts of this island chain lies the two important **sea lanes of communication (SLOCs)**.
    - These SLOCs are **critical for maritime trade** flow between the Gulf of Aden and **Gulf of Hormuz** in West Asia and the Strait of Malacca in Southeast Asia.
    - Nearly **50% of India's external trade and 80% of its energy imports transit these SLOCs in the Arabian Sea.**
  - ❍ **Part of Important Groupings:**
    - Besides, Maldives is a member of the **South Asian Association for Regional Cooperation (SAARC)** and the **South Asia Subregional Economic Cooperation (SASEC).**

India - Maldives Relations

- ➢ **Cooperation Between India & Maldives:**
  - ❍ **Security Cooperation:**
    - Through the decades, **India has rushed emergency assistance to the Maldives, whenever sought.**
    - In 1988, when armed mercenaries attempted a coup against President Maumoon Abdul Gayoom, **India sent paratroopers and Navy vessels** and restored the legitimate leadership under **Operation Cactus.**
    - India and Maldive conduct the joint military exercise **'Ekuverin'.**
  - ❍ **Disaster Management:**
    - The 2004 **tsunami** and the drinking water crisis in Male a decade later were other occasions when **India rushed assistance.**
    - The Maldives has been one of the biggest beneficiaries of the **Covid-19** assistance and **vaccines delivered** by India among India's all neighbouring countries.
    - When the world supply chains were blocked because of the pandemic, India continued to provide crucial commodities to the Maldives under **Mission SAGAR.**
  - ❍ **People To People Contact:**
    - **Maldivian students attend educational institutions in India** and patients fly here for superspeciality healthcare, aided by a liberal visa-free regime extended by India.
  - ❍ **Economic Cooperation:**
    - Tourism is the mainstay of Maldivian economy. Given the geographical limitations imposed on the Maldives, **India has exempted the nation from export curbs on essential commodities.**
- ➢ **Irritants in Relations:**
  - ❍ **Political Instability:**
    - India's major concern has been the **impact of political instability in the neighbourhood on its security and development.**
    - The February **2015 arrest of Maldives' opposition leader Mohamed Nasheed on terrorism charges** and the consequent political crisis have posed a real diplomatic test for India's neighbourhood policy.
  - ❍ **Radicalisation:**
    - In the past decade or so, the number of **Maldivians drawn towards terrorist groups like the Islamic State (IS)** and Pakistan-based madrassas and jihadist groups has been **increasing.**
    - Political instability and **socio-economic uncertainty** are the main drivers fuelling the rise of Islamist radicalism in the island nation.
  - ❍ **China Angle:**
    - China's strategic footprint in India's neighbourhood has increased. The Maldives has emerged as an important 'pearl' in China's **"String of Pearls"** construct in South Asia.
    - Also, the **Maldives have started using the China card to bargain with India.**

Atlantic Charter

Why in News

Recently, the **US' President and UK's Prime Minister** signed **a new version of the 80-year old Atlantic Charter.**

Key Points

- ➢ **Atlantic Charter (1941)**:
  - ❍ The Atlantic Charter was a **joint declaration released by US President Franklin D. Roosevelt and British Prime Minister Winston Churchill** on 14th August,

1941 (during **World War II**) following a meeting of the two heads of government in Newfoundland.

- The Atlantic Charter was **subsequently incorporated** by reference in the Declaration of the **United Nations** in 1942.
- **World War II** was a conflict that **involved virtually every part of the world during the years 1939–45.**
- The principal belligerents were:
  - **Axis powers:** Germany, Italy, and Japan.
  - **Allies:** France, Great Britain, the United States, the Soviet Union, and, to a lesser extent, China.
- The Atlantic Charter **provided a broad statement of US and British war aims such as:**
  - They desired **no territorial changes without the free assent of the peoples** concerned.
  - They **respected every people's right** to choose its own form of government and wanted sovereign rights and self-government restored to those forcibly deprived of them.
  - They would **try to promote equal access** for all states to trade and to raw materials.
  - They hoped to **promote worldwide collaboration** so as to improve labour standards, economic progress, and social security.
  - The destruction of **"Nazi tyranny," (Germany)** they would look for a peace under which all nations could live safely within their boundaries, without fear or want.
  - Under such a peace the **seas should be free.**
  - Pending a general security through renunciation of **force, potential aggressors must be disarmed.**

➤ **New Atlantic Charter (2021):**
- The new charter, a 604-word declaration, is an effort t**o stake out a grand vision for global relationships in the 21ˢᵗ century,** just as the original was a declaration of a Western commitment to democracy and territorial integrity just months before the US entered World War II.
- It is a statement of principles, a promise that the UK and the US would meet the challenges of their age together. It calls for both countries to **adhere to the rules-based international order.**
- The new charter focuses on **climate change** and the **need to protect biodiversity**. With references to

emerging technologies, **cyberspace** and **sustainable global development.**
- It calls on Western allies to **oppose interference through disinformation** or other **malign influences, including in elections.**
  - It **ranks the threats to democratic nations** in a technological era.
- It vows that as long as there are nuclear weapons, **North Atlantic Treaty Organisation (NATO)** will remain a nuclear alliance.

➤ **Opportunity for India:**
- The **old Atlantic Charter alienated Indian nationalism** from the West but **the new Charter and the rebooting of western institutions should facilitate a productive phase of India's cooperation with the US** and its allies.
  - In 1941, the UK insisted that **the principle of self-determination highlighted in the charter did not apply to India.**
  - However, the presence of **India and South Africa along with Australia and South Korea (as guests) at the G-7 summit 2021** is a recognition of the **urgent imperative to widen the basis of the West** in dealing with global challenges.
- The current **Anglo-American effort to institutionalise western consultations with India is a long overdue correction.**
  - Indian Prime Minister, who is remotely joining the discussions at the **G-7 summit (2021)**, has an opportunity to signal a commitment to both address perceptions about shrinking democratic freedoms within India and **offer substantive collaboration with the western democracies on global issues.**

47ᵗʰ G7 Summit

Why in News

Recently, the Indian Prime Minister addressed the **47ᵗʰ G7 Summit 2021** through video conferencing.

➤ Earlier, the Finance Ministers from the G7 nations reached a landmark accord setting a **Global Minimum Corporate Tax Rate (GMCTR).**

➤ Apart from **India, Australia and South Korea** were also invited to participate in the proceedings of the summit as **"guest countries".**

Note:

➢ This year's summit was **hosted by the UK**. The **last G-7 summit was in France in 2019,** with last year's event in the US canceled due to the **pandemic**.

Key Points

➢ **Build Back Better for the World Project:**
  ○ It is aimed squarely at **competing with China's** trillion-dollar **Belt and Road infrastructure initiative,** which has been widely **criticised for saddling small countries with unmanageable debt** but has **included even G7 member Italy** since launching in 2013.
  ○ It will collectively catalyse hundreds of billions of infrastructure investment for low- and middle-income countries (in Asia and Africa) and offer a **values-driven, high-standard and transparent partnership with G7.**

➢ **Democracies 11:**
  ○ Signed off on a joint statement (Democracies 11) by G-7 and guest countries on "open societies" that **reaffirm and encourage the values of freedom of expression**, both online and offline, as a freedom that safeguards democracy and helps people live free from fear and oppression.
    ● The statement also refers to **politically motivated internet shutdowns** as one of the threats to freedom and democracy.
    ● While the statement is **directed at China and Russia**, **India has been under scrutiny** over **Internet curbs in Jammu and Kashmir** even as the Government is locked in a face-off over its **New IT rules 2021** with tech giants.
  ○ Democracies 11 is facing **threats to freedom and democracy** from rising authoritarianism, electoral interference, corruption, economic coercion, manipulation of information, including disinformation, online harms and cyber attacks, politically motivated internet shutdowns, human rights violations and abuses, terrorism and violent extremism.

➢ **Carbis Bay Declaration:**
  ○ The G7 signed the **Carbis Bay Declaration**. It is aimed at **preventing future pandemics.**
  ○ The G7 also **pledged over 1 billion coronavirus vaccine doses for poorer nations** with half of that coming from the United States and 100 million from Britain.

    ● 11 billion doses are needed to vaccinate at least 70% of the world's population by mid-2022.
  ○ The doses would come both directly and through the international **COVAX program.**

➢ **Climate Change:**
  ○ Renewed a pledge to **raise their contributions to meet an overdue spending pledge of USD 100 billion a year** to help poorer countries cut carbon emissions.
  ○ Promised **to halt and reverse biodiversity loss by 2030**.
  ○ Pledged to reach **net zero carbon emissions by 2050.**

➢ **Against China:**
  ○ The G-7 statement which was **not signed by India** and other outreach countries **hit out at China on "human rights and fundamental freedoms"** in **Xinjiang (Uyghur Muslims) and Hong Kong**, and the unilateral attempts to change the status quo in the **South China Sea**.
  ○ It also called for a transparent and timely **World Health Organization's Covid origins study in China.**
    ● India had also called for the same in a **statement during the World Health Assembly.**

➢ **India's Stand:**
  ○ India is a **natural ally for the G7** countries in **defending the shared values** from a host of threats stemming from authoritarianism, terrorism and violent extremism, disinformation and economic coercion.
  ○ Expressed concerns that **open societies are particularly vulnerable to disinformation and cyber-attacks.**
  ○ It sought the support of the grouping to **lift patent protections for Covid-19 vaccines.**
  ○ Planet's atmosphere, biodiversity and oceans cannot be protected by countries acting in silos, and **called for collective action on climate change.**
    ● India is the only **G-20** country on track to meet its Paris commitments.
  ○ Developing countries need better access to climate finance, and **called for a holistic approach towards climate change** that covers mitigation, adaptation, technology transfer, climate financing, equity, climate justice and lifestyle change.
  ○ Highlighted the **revolutionary impact of digital technologies** on social inclusion and empowerment

Note:

in India through applications such as **Aadhaar**, **Direct Benefit Transfer (DBT)** and **JAM (Jan Dhan-Aadhaar- Mobile) trinity.**

Global Minimum Corporate Tax Rate

➢ **About**:
○ G7 would back **a minimum global corporation tax rate of at least 15%,** and **put in place measures to ensure taxes were paid in the countries where businesses operate.**
  ● **Corporation tax** is a direct tax imposed on the net income or profit that enterprises make from their businesses.
○ **Applicability:**
  ● It would apply to companies' overseas profits. Therefore, **if countries agree on a global minimum, governments could still set whatever local corporate tax rate they want.**
  ● But **if companies pay lower rates in a particular country**, their home governments could **"top-up"** their taxes to the agreed minimum rate, **eliminating the advantage of shifting profits to a tax haven**.
    ■ A **tax haven** is generally an offshore country that offers foreign individuals and businesses little or no tax liability in a politically and economically static environment.
➢ **Need of GMCTR:**
○ **Reduce Tax Loss:**
  ● Increasingly, **income from intangible sources** such as drug patents, software and royalties on **intellectual property has migrated to low tax jurisdictions**, allowing **companies to avoid paying higher taxes** in their traditional home countries (**tax base erosion** of the higher-tax jurisdictions).
  ● These **companies typically rely on complex webs of subsidiaries to hoover profits out of major markets into low-tax countries** such as Ireland or Caribbean nations such as the **British Virgin Islands or the Bahamas,** or to central American nations such as Panama.
  ● **India's annual tax loss** due to corporate tax abuse is estimated at over **USD 10 billion.**

○ **To Bring Uniformity:**
  ● GMCTR will **end a decades-long race to the bottom** in which countries have competed to attract corporate giants with ultra-low tax rates and exemptions. And it will bring uniformity in corporate taxation worldwide.
➢ **Challenges:**
○ **Uniting Nations:**
  ● Getting all major nations on the same page is a problem, since the GMCTR **impinges on the right of the sovereign to decide a nation's tax policy.**
○ **Policy Issues:**
  ● A global minimum rate would **essentially take away a tool that countries use to push policies that suit them.**
  ● A **lower tax rate is a tool they can use to alternatively push economic activity**. Also, a global minimum tax rate **will do little to tackle tax evasion.**
➢ **Other International Effort:**
○ The **Organization for Economic Cooperation and Development** (OECD) has been **coordinating tax negotiations among 140 countries for years** on rules for taxing **cross-border digital services and curbing tax base erosion**, including a global corporate minimum tax.
➢ **India's Stand:**
○ While taxation is ultimately a sovereign function, and depends upon the needs and circumstances of the nation**, the government is open to participate and engage in the emerging discussions globally** around the corporate tax structure.
○ India is **likely to benefit from the global minimum 15% corporate tax rate** pact as the **effective domestic tax rate is above the threshold, and the country would continue to attract investment.**
  ● In September 2019, the government **had reduced the corporate tax rate to 22%** for companies that gave up all exemptions and incentives. Further, a **15% rate** was offered to **new manufacturing firms.**
  ● The effective tax rate, inclusive of surcharge and cess, for Indian domestic companies is around **25.17%.**

■■■

Note:

Science and Technology

Highlights

- PASIPHAE: A Sky Surveying Project
- EnVision Mission to Venus: European Space Agency
- CIBER-2: Counting of Stars
- Corbevax Covid-19 Vaccine
- Crops Lost to Pests
- China's 'Artificial Sun' EAST
- Disinfection System Vajra Kavach
- AmbiTAG
- First Human Case of H10N3 Bird Flu
- Supersonic Commercial Plane
- Fast Radio Bursts
- New Shephard: Taking Tourists to Space

PASIPHAE: A Sky Surveying Project

Why in news

The **Wide Area Linear Optical Polarimeter (WALOP)**, a **vital instrument for the PASIPHAE Project**, is being d**eveloped at Inter-University Centre for Astronomy and Astrophysics (IUCAA), India.**

➢ **Polar-Areas Stellar-Imaging in Polarisation High-Accuracy Experiment (PASIPHAE)** is **an international collaborative sky surveying project.**

Astronomical Polarimetry

➢ Polarimetry, **a technique to measure the polarisation of light**, is a powerful tool that allows astronomers to infer information about celestial objects, from passing comets to distant galaxies, that can not be obtained using other techniques.

➢ **Polarization** is **a property of light that represents the direction that the light wave oscillates.**

➢ Two decades ago, an Indian astrophysicist Sujan Sengupta, put forth an idea, that the light emitted by a **cloudy brown dwarf,** or reflected off an **extrasolar planet**, will be polarised.

Key Points

➢ **About the PASIPHAE Survey:**

○ It is an **opto polarimetric survey** aiming to **measure the linear polarization from millions of stars.**

○ The survey **will use two high-tech optical polarim-** eters to observe the northern and southern skies, simultaneously.

○ The survey **will be conducted** concurrently from the **South African Astronomical Observatory in Sutherland**, South Africa in the **southern hemisphere**, and the **Skinakas Observatory in Crete, Greece**, in the **north.**

○ It will focus on **capturing starlight polarisation** of very faint stars that are so far away that polarisation signals from there have not been systematically studied.

○ The distances to these stars will be obtained from measurements of the **GAIA satellite**.

● GAIA is on a **mission to chart a three-dimensional map of our Galaxy**, the Milky Way, in the process revealing the composition, formation and evolution of the Galaxy. It is **a European Space Agency astronomical observatory mission.**

○ Scientists from the University of Crete, Greece, Caltech, USA, **IUCAA, India**, the South African Astronomical Observatory and the University of Oslo, Norway, are involved in this project, steered by the Institute of Astrophysics, Greece.

➢ **Importance of the Project**:

○ Since its birth about 14 billion years ago, the **universe has been constantly expanding,** as evidenced by the presence of **Cosmic Microwave Background (CMB) radiation** which fills the universe.

● The **Milky Way Galaxy contains a lot of dust clouds** that are present in the form of clusters. When **starlight passes through these dust clouds**, they **get scattered and polarised.**

Note:

○ The PASIPHAE polarimetric map **will be used to perform magnetic tomography of the Milky Way Galaxy.**

- That is, it will **deduce the 3-dimensional structure of the magnetic field and the dust that resides in our own Galaxy.**

- This map will **provide invaluable information for future CMB B-mode experiments** searching for inflationary **gravitational waves**.

- The **B-mode experiment** was used **to test the theory of cosmic inflation** and distinguish between inflationary models of the very early universe by making precise measurements of the polarization of the Cosmic Microwave Background (CMB).

- According to the **theory of inflation,** the **early Universe expanded exponentially fast for a fraction of a second** after the **Big Bang.**

○ Beyond studies of the early Universe, the survey will l**ead to leaps forward in some of the most actively pursued areas in Astrophysics**, including high-energy astrophysics, stellar astrophysics, and interstellar medium dynamics.

➢ **Wide Area Linear Optical Polarimeter (WALOP)**:

○ It was **planned in 2013** after the success of the **RoboPol experiment survey during 2012-2017.**

- WALOP and its predecessor RoboPol **share the photometry (measurement of the brightness of celestial objects) principle.**

- But the **WALOP will be capable of observing hundreds of stars concurrently** present both in the northern and the southern skies as opposed to RoboPol, which has a much smaller field of view in the sky.

○ **Working Principle**:

- WALOP will operate on the principle that at any given time, the data from a portion of the sky under observation will be split into four different channels.

- Depending on the manner in which light passes through the four channels, the polarisation value from the star is obtained.

  ■ That is, each star will have four corresponding images which when stitched together will help calculate the desired polarisation value of a star.

○ **Installation:**

- A WALOP each will be mounted on the 1.3-metre Skinakas Observatory, Crete, and on the 1-metre telescope of the South African Astronomical Observatory located in Sutherland.

EnVision Mission to Venus: European Space Agency

Why in News

Recently, **European Space Agency (ESA)** has announced a new mission- **EnVision mission** to **Venus.**

Key Points

➢ **About:**

○ It is an European Space Agency (ESA) led mission with contributions from the **National Aeronautics and Space Administration (NASA)** .

○ It is likely **to be launched sometime in the 2030s.** Once launched on an Ariane 6 rocket, the spacecraft will take about 15 months to reach Venus and will take 16 more months to achieve orbit circularisation.

➢ **Aim:**

○ The mission will carry a range of instruments to study the **planet's atmosphere and surface**, **monitor trace gases in the atmosphere** and **analyse its surface composition.**

➢ **Significance:**

○ EnVision will follow another ESA-led mission to Venus called **'Venus Express' (2005-2014)** that **focussed on atmospheric research and pointed to volcanic hotspots** on the planet's surface.

➢ **Other Missions:**

○ **US:**

- NASA has announced two new robotic missions to Venus - **DAVINCI+ and VERITAS.** It will be launched between 2028-2030.

- Mariner series 1962-1974, Pioneer Venus 1 and Pioneer Venus 2 in 1978, Magellan in 1989.

○ **Russia:**

- **Venera** series of space crafts 1967-1983, **Vegas** 1 and 2 in 1985.

○ **Japan:**

- **Akatsuki spacecraft** has been studying the planet's atmosphere since 2015.

➢ **Indian Initiative:**

○ India plans to launch a new orbiter named **Shukrayaan to Venus in 2024.**

DAVINCI+

➢ DAVINCI+ is short for **'Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging'** and is the first US-led mission to the planet's atmosphere since 1978.

➢ It will try to **understand Venus' composition** to see how the planet formed and evolved.

➢ This mission also consists of a descent sphere that will **pass through the planet's thick atmosphere** and make observations and take measurements of noble gases and other elements.

➢ It will also try to return the first high resolution photographs of a geological feature-**tesserae**.

○ **Tesserae** may be comparable to Earth's continents. The presence of tesseraes may suggest that Venus has tectonic plates like Earth.

VERITAS

➢ VERITAS is short for **'Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy'** and will map the planet's surface to determine its geologic history and understand the reasons why it developed so differently from Earth.

➢ It will orbit Venus with a radar that will help to create a three dimensional reconstruction of its topography which might be able to confirm if processes such as plate tectonics and volcanism are still active there.

➢ This mission will also map the emissions from Venus's surface that may help in determining the type of rocks that exist on Venus.

➢ It will also determine if active volcanoes are releasing water vapour into the atmosphere.

Venus

➢ **About**:

○ It is named after the **Roman goddess of love and beauty.** It is the **second planet from the Sun** and **sixth in the solar system in size and mass.**

○ It is the **second brightest** natural object in the night sky **after the Moon**, probably that is the reason why it was the **first planet to have its motions plotted across the sky**, as early as the second millennium BC.
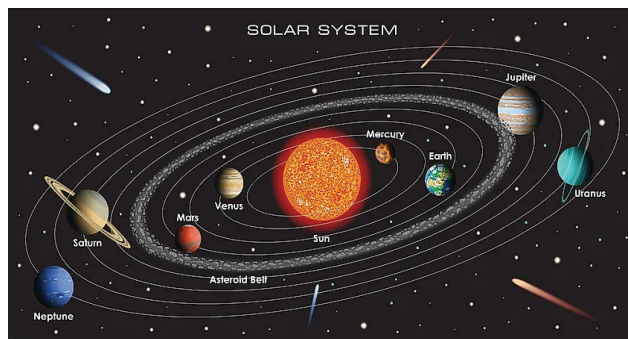
○ Unlike the other planets in our solar system, **Venus and Uranus spin clockwise** on their axis.

○ It is the **hottest planet** in the solar system because of the **high concentration of carbon dioxide** which works to produce an intense **greenhouse effect**.

○ A **day on Venus is longer than a year**. It takes Venus **longer to rotate once on its axis than to complete one orbit of the Sun.**

● That's **243 Earth days to rotate once** - the longest rotation of any planet in the Solar System - and only **224.7 Earth days to complete one orbit of the Sun.**

➢ **Venus & Earth:**

○ Venus has been called **Earth's twin** because of the **similarities in their masses, sizes, and densities and their similar relative locations** in the solar system.

○ No planet approaches closer to Earth than Venus; at its nearest **it is the closest large body to Earth other than the Moon.**

○ Venus has **90 times the atmospheric pressure of Earth.**

➢ **Importance of Studying Venus:**

○ It will help to learn **how Earth-like planets evolve** and what conditions exist on Earth-sized **exoplanets** (planets that orbit a star other than our sun).

○ It will help in **modelling Earth's climate**, and serves as a cautionary tale on how dramatically a planet's climate can change.

○ Scientists speculate about the existence of life on Venus in its distant past and the **possibility that life may exist** in the top layers of its clouds where temperatures are less extreme.

● In 2020, scientists detected the **presence of phosphine** (a chemical produced only through biological processes) in the atmosphere of Venus.

CIBER-2: Counting of Stars

Why in News

A **NASA** (National Aeronautics and Space Administration) **funded CIBER-2 sounding rocket's** launch window will open at the **White Sands Missile Range** in New Mexico, USA.

➢ The **aim** of CIBER-2 mission is **to look for evidence of extra stars** that may have been missed in stellar head counts.

➢ The **ESA (European Space Agency) infrared space observatory Herschel** also counted the number of galaxies in infrared and measured their luminosity previously.

Key Points

➢ **Sounding Rocket:**
  ○ Sounding rockets take their name from the nautical term "**to sound**," which means to **take measurements.**
  ○ Since 1959, NASA-sponsored space and earth science research has used sounding rockets to test instruments used on satellites and spacecraft and to provide information about the **Sun, stars, galaxies** and **Earth's atmosphere and radiation.**

➢ **About CIBER-2 (Cosmic Infrared Background Experiment-2):**
  ○ The mission is the **latest in a series of sounding rocket launches** that began in 2009. The count from the first CIBER mission paved the way to reorganize the research and give the counting of stars another run.
  ○ The CIBER-2 instrument will l**aunch aboard a sounding rocket**, a small suborbital rocket that will carry scientific instruments on brief trips into space before it falls back to Earth for recovery.
  ○ Once above Earth's atmosphere, CIBER-2 will **survey a patch of sky about 4 square degrees** - for reference, the full Moon takes up about half a degree – that includes dozens of galaxy clusters.
  ○ It **will not actually count individual stars** but it will instead detect the **extragalactic background light,** which is all of the light that has been emitted throughout the history of the Universe.
  ○ From all of this extragalactic background light, the CIBER-2 **will focus on a portion of this called**

cosmic infrared background, which is emitted by some of the most common stars.
  ● Essentially, this approach is aiming to look at how bright this light is to give scientists an estimate of how many of these stars are out there.

➢ **Rough Estimate of Stars:**
  ○ To get a rough estimate of the total number of stars in the universe, scientists have calculated the **average number of stars in a galaxy** – some estimates put it at about **100 million**, though it could be 10 or more times higher.
  ○ M**ultiplying it by the number of galaxies**, taken to be about **2 trillion** (also very tentative), there are **one hundred quintillion stars (or 1 with 21 zeros after it).**
  ○ But this calculation **assumes that all stars are inside galaxies**, which might not be true and this is what the **CIBER-2 instrument will try to find out.**
  ○ The European Space Agency (ESA) says **there could be 100 thousand million stars in the Milky Way alone.**

Corbevax Covid-19 Vaccine

Why in News

India has placed an advance order to block 300 million doses of a new **Covid-19** vaccine, **Corbevax.**

Key Points

➢ **Corbevax:**
  ○ **About:** It is India's indigenous **Covid-19 vaccine** which is currently **undergoing Phase 3 clinical trials.**
  ○ **Working:**
    ● It is a **"recombinant protein sub-unit"** vaccine.
      ■ It means it is made up of a **specific part of SARS-CoV-2** - the **spike protein** on the virus's surface.
    ● The **spike protein allows the virus** to enter the cells in the body so that it can replicate and cause disease.
    ● However, when this **protein alone is given to the body**, it is not expected to be harmful as the rest of the virus is absent.
    ● The body is expected to **develop an immune response** against the injected spike protein.

Note:

- Therefore, when the real virus attempts to infect the body, it will already have an immune response ready that will make it unlikely for the person to fall severely ill.
- ➤ **Difference between Corbevax and Other Covid-19 Vaccines:**
  - ❍ They are either **mRNA vaccines** (Pfizer and Moderna), **viral vector vaccines** (**Covishield** and **Sputnik V**) or **inactivated vaccines** (**Covaxin**, Sinovac-CoronaVac and Sinopharm's Vero Cell).
  - ❍ **Viral vector and mRNA** vaccines **use a code to induce our cells** to make the spike proteins against which the body has to build immunity.
    - In the case of Corbevax, protein itself is given.
    - **mRNA vaccines** work by using messenger RNA (mRNA), which is the molecule that essentially puts DNA instructions into action. Inside a cell, mRNA is used as a template to build a protein.
    - **Viral vector vaccines** use a modified version of a different virus (the vector) to deliver important instructions to our cells.
  - ❍ **Inactivated vaccines include killed particles of the whole SARS-CoV-2 virus,** attempting to target the entire structure of the virus.
    - Corbevax, like the mRNA and viral vector Covid-19 vaccines, targets only the spike protein, but in a different way.

Other Types of Vaccine

- ➤ **Live-attenuated Vaccines:**
  - ❍ Live vaccines use a **weakened (or attenuated) form of the germ** that causes a disease.
  - ❍ Because these vaccines are so **similar to the natural infection** that they help prevent, they create a strong and long-lasting immune response.
  - ❍ The limitation of this approach is that these vaccines usually **cannot be given to people with weakened immune systems.**
  - ❍ Live vaccines are used against: **Measles**, **mumps, rubella (MMR combined vaccine), Rotavirus, Smallpox** among others.
- ➤ **Subunit, recombinant, polysaccharide, and conjugate Vaccines:**
  - ❍ They **use specific pieces of the germ** - like its protein, sugar, or capsid (a casing around the germ). They give a very strong immune response.

- ❍ They can also be used on people with weakened immune systems and long-term health problems.
- ❍ These vaccines are used to protect against: **Hib** (Haemophilus influenzae type b) disease, **Hepatitis B, HPV (Human papillomavirus), Pneumococcal disease** among others.
- ➤ **Toxoid Vaccines:**
  - ❍ Toxoid vaccines **use a toxin made by the germ that causes a disease.** Toxoid vaccines are used to protect against: **Diphtheria, Tetanus.**

Crops Lost to Pests

Why in News

According to a recent report, as much as **40% of the world's agricultural crops** are lost to pests each year.

- ➤ The **United Nations** declared 2020 as the **International Year of Plant Health**, which has been extended until 1st July, 2021.

Key Points

- ➤ **Reasons for the Spread:**
  - ❍ Half of all **emerging plant diseases** are spread by **global travel and trade,** which have tripled in volume over the last decade.
  - ❍ **Weather** is the second-most important factor.
- ➤ **Impact of Climate Change:**
  - ❍ It will **increase the risk of pests spreading** in agricultural and forestry ecosystems, especially in **cooler Arctic, boreal, temperate and subtropical regions.**
- ➤ **Controlling Invasive Pests:**
  - ❍ A single, **unusually warm winter** can be enough to assist the establishment of **invasive pests**.
  - ❍ **Fall armyworm pests**, which feed on crops like maize, sorghum and millet and **Tephritid fruit flies** (that damage fruit and other crops) have already spread due to a warmer climate.
  - ❍ **Desert locusts (the world's most destructive migratory pests)**, are expected to change their migratory routes and geographical distribution because of climate change.
- ➤ **Impact of the Plant Pests:**
  - ❍ It leaves **millions of people without enough food to eat**.

Note:

○ It **adversely impacts agricultural activities** and thereby, the primary source of income for rural poor communities.

○ **Invasive pests** cost countries **at least USD 70 billion annually** and are one of the **main drivers of biodiversity loss.**

➢ **Key Recommendations:**

○ Farmers should adopt and policymakers should encourage the use of **environment-friendly methods** such as integrated pest management.

○ To make trade safe, it is important to implement **international plant health standards and norms**, such as those developed by **the International Plant Protection Convention (IPCC)** and **Food and Agriculture Organization (FAO).**

● The IPPC is a **plant health treat**y signed by over 180 countries including India.

● It aims to **protect the world's plant resources** from the spread and introduction of pests, and promote safe trade.

○ There is a need for **more research as well as investment** in strengthening national plant health systems and structures.

○ Policymakers and governments should ensure their decisions are based on **sound preparation and data.**

○ **Regularly monitoring plants and receiving early warning information** about emerging threats, helps governments, agricultural officers and farmers take preventive and adaptive measures to keep plants healthy.

Pest Controlling Methods

➢ The most popular methods of **containing the pest include** the use of **Genetically Modified (GM) crops and pesticides,** however, some **armyworms** have developed resistance to these tactics and are continuing to destroy crops.

➢ Natural approaches, including **breeding predators such as wasps**, to be released into fields when necessary, as well as developing a **"germ warfare"** that isolates diseases to which the caterpillar (armyworm) is prone, are being explored by the scientists.

➢ **A quarantine system**, under which imports of grains and plants that can host such insects are inspected at shipping ports, airports and land border crossings

is the first line of defence taken by the countries across the world.

➢ **The quarantine system in India** is governed by the **Plant Quarantine (Regulation of Import into India) Order of 2003**, which is notified under the Destructive Insects and Pests Act of 1914.

○ **In India**, quarantine responsibility lies with **the Directorate of Plant Protection**, Quarantine & Storage (headquartered in Faridabad, Haryana). The short staffed directorate and the lack of a strong legislation have made the task of policing borders difficult in India.

China's 'Artificial Sun' EAST

Why in News

Recently, China's **Experimental Advanced Super-conducting Tokamak (EAST)** achieved a peak temperature of **288 million** degrees Fahrenheit, which is over **ten times hotter** than the sun.

➢ **China is not the only country** that has achieved high plasma temperatures. In 2020, **South Korea's KSTAR (Korea Superconducting Tokamak Advanced Research) reactor** set a new record by maintaining a plasma temperature of over 100 million degrees Celsius for 20 seconds.

Tokamak

➢ The tokamak is an **experimental machine** designed to harness the **energy of fusion.**

➢ Inside a **tokamak**, the energy produced through the fusion of atoms is absorbed as heat in the walls of the vessel.

➢ Like a conventional power plant, a **fusion power plant uses** this heat to produce steam and then electricity by way of **turbines and generators.**

Key Points

➢ **About:**

○ The EAST reactor is **an advanced nuclear fusion experimental research device** located at the Institute of Plasma Physics of the Chinese Academy of Sciences (ASIPP) in Hefei, China.

➢ **Establishment:**

○ EAST first became operational in 2006.

➢ **Purpose:**

Note:

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○ The purpose of the artificial sun is **to replicate the process of nuclear fusion, which is the same reaction that powers the sun.**

○ This is part of the **International Thermonuclear Experimental Reactor (ITER)** facility, which will become the world's **largest** nuclear fusion reactor when it becomes **operational in 2035.**

● The **ITER Members** include China, the European Union, **India**, Japan, Korea, Russia and the United States.

➢ **Working:**

○ It is **based on the Nuclear Fusion Process** that is carried out by the Sun and the Stars.

○ For nuclear fusion to occur, **tremendous heat and pressure are applied on hydrogen atoms** so that they fuse together. The **nuclei of deuterium and tritium -** both found in hydrogen - are **made to fuse together** to **create a helium nucleus,** a neutron along with a whole lot of energy.

○ The gaseous hydrogen fuel **is heated to temperatures of over 150 million degrees Celsius** so that it **forms a hot plasma (**electrically charged gas**) of subatomic particles.**

○ With the help of a strong magnetic field, the plasma is kept away from the walls of the reactor to ensure it does not cool down and lose its potential to generate large amounts of energy. The **plasma is confined for long durations for fusion to take place.**

➢ **Other Tokamaks in China:**

○ Apart from the EAST, China is currently operating the **HL-2A reactor** as well as **J-TEXT.**

○ In **December 2020**, **HL-2M Tokamak**, China's largest and most advanced nuclear fusion experimental research device, was successfully **powered up for the first time** — a key milestone in the **growth of China's nuclear power research capabilities.**

➢ **Significance:**

○ It is significant as far as **China's Green Development** is concerned.

○ **Nuclear fusion** is a process through which **high levels of energy are produced without generating large quantities of waste**. Unlike fission, fusion **also does not emit greenhouse gases** and is considered a safer process with lower risk of accidents.

Nuclear Reactions

➢ **Description:**

○ A nuclear reaction is the process in which **two nuclei, or a nucleus** and an **external subatomic particle**, collide to produce **one or more** new nuclides.

○ Thus, a nuclear reaction must cause **a transformation** of at least one nuclide to another.

➢ **Types:**

○ **Nuclear Fission:**

● The nucleus of an **atom splits** into **two daughter nuclei.**

● This decay can be **natural spontaneous splitting** by radioactive decay, or can actually be simulated in a lab by achieving necessary conditions (bombarding with neutrons, alpha particles, etc.).

● The resulting fragments tend to have a combined mass which is less than the original. The **missing mass** is usually converted into **nuclear energy.**

● Currently **all commercial** nuclear reactors are based on **nuclear fission.**

○ **Nuclear Fusion:**

● Nuclear Fusion is defined as the **combining of two lighter nuclei** into a **heavier one.**

● Such nuclear fusion reactions are the source of energy in the Sun and other stars.

● It takes considerable energy to force the **nuclei to fuse.** The conditions needed for this process are extreme – **millions of degrees** of temperature and millions of pascals of pressure.

■ The **hydrogen bomb** is based on a thermonuclear fusion reaction. However, a nuclear bomb based on the fission of uranium or plutonium is placed at the core of the hydrogen bomb to provide initial energy.

Disinfection System Vajra Kavach

Why in News

Vajra Kavach is a simple disinfection process that enables Corona Warriors to **reuse their masks and PPEs.**

Note:

➤ The technology has been developed under the **NIDHI-PRAYAS** program initiated by the **Department of Science and Technology (DST).**

Key Points

➤ **About Vajra Kavach:**
  ○ Vajra Kavach's **UV (Ultra Violet)** disinfection system **removes any possible traces of the disease-causing SARS-Cov-2 (Covid-19) virus** from **Personal Protective Equipment (PPE)**, **N95 masks**, **coats, gloves and gowns.**
  ○ It **enables reuse** of PPEs and other materials used by healthcare workers.
    ● It thus protects not only them, but our environment too, by **helping reduce biomedical waste generation**. It is also making personal protective equipment more available, affordable, and accessible.

➤ **NIDHI-PRAYAS:**
  ○ NIDHI-PRAYAS is **National Initiative for Developing and Harnessing Innovation Promoting and Accelerating Young and aspiring Innovators & startups.**
  ○ The **Department of Science & Technology** has launched a **NIDHI** program under which programmes for setting up of **incubators, seed fund, accelerators** and '**Proof of concept' grants** for innovators and entrepreneurs have been launched.
    ● Under **NIDHI**, **PRAYAS** programme has been initiated in which established **Technology**

Business Incubators (TBI) are supported with **PRAYAS grant** to support innovators and entrepreneurs with grants for '**Proof of Concept (PoC)**' and developing prototypes.
    ● **PoC** is evidence that a business idea works.
  ○ A maximum grant of **Rs. 220 lakh** is given to a **TBI** for establishing a **PRAYAS Centre** which includes **Rs.100 lakh for PRAYAS SHALA**, **Rs. 20 lakh** for operational cost of **PRAYAS Centre** and maximum of **Rs. 10 lakh** to one innovator for developing prototype. Funding for ten innovators is given to the TBI in a year.
  ○ **Objectives:**
    ● To enable translation of an innovative idea to a prototype.
    ● To provide a platform for faster experimentation and modify approaches in the idea to market journey.
    ● To generate innovative solutions relevant to local and global problems.
    ● To attract a large number of youth who demonstrate problem solving zeal and abilities.
    ● To work on their new technology/knowledge/innovation based startups.
    ● To enhance the pipeline in terms of quality and quantity of innovative startups to the incubators.

AmbiTAG

Why in News

Recently, Indian Institute of Technology (IIT) Ropar, Punjab has developed a **first-of-its-kind IoT (Internet of Things) device** – **AmbiTag** that records **real-time ambient temperature** during the **transportation of perishable products, vaccines** and even **body organs and blood.**

➤ The device has been developed under **Technology Innovation Hub – AWaDH (Agriculture and Water Technology Development Hub)** and it's Startup **ScratchNest.**

Agriculture and Water Technology Development Hub
➤ **AWaDH** is a research center at **IIT Ropar** established with support from the **Department of Science and Technology (DST)** and **Science and Engineering Research Board (SERB)** to carry out extensive research in the **field of agriculture and water.**

Note:

Key Points

➢ **About AmbiTAG:**

  ○ This is **shaped as a USB (Universal Serial Bus) device.**

  ○ It is **India's first indigenous** temperature data logger for **cold chain management.**

  ○ It continuously records the temperature of its immediate surroundings **from -40 to +80 degrees** in **any time zone for a full 90 days** on **a single charge.**

   ● Most of the similar devices available in the international market record data only for a duration of 30- 60 days.

  ○ It **generates an alert** when the temperature goes **beyond a pre-set limit.**

  ○ The recorded data can be retrieved by **connecting the USB** with any computer.

➢ **Significance:**

  ○ Besides **perishable items** including **vegetables, meat and dairy products,** it can also monitor the temperature of **animal semen** during transit.

  ○ The device will be made available to all companies involved in **Covid-19** vaccine transportation from production facilities to the last mile vaccination centers in the country.

  ○ It is a push towards **Atmanirbhar Bharat** as such devices are being imported by India in a massive quantity from other countries such as **Singapore, Hong Kong, Ireland, and China.**

First Human Case of H10N3 Bird Flu

Why in News

Recently, **China** has reported the **first case of human infection with the H10N3 strain of bird flu** in Jiangsu province.

Key Points

➢ H10N3 is **a subtype of the Influenza A virus** which is **commonly known as the bird flu virus.**

➢ It is **a low pathogenic, or relatively less severe, strain of the virus in poultry** and the **risk of it spreading on a large scale is very low.**

  ○ Among animals, it can **spread through respiratory droplets**, similar to **flu** and **Covid-19.**

➢ The strain is **not a very common** virus, **only about 160 isolates of the virus have been reported in the past 40 years** (till 2018), that too, mostly in wild birds or waterfowl in Asia and some parts of North America.

  ○ **None** had been detected **in chickens as of now.**

➢ There are **many different strains of avian influenza in China** and **some sporadically infect people**, generally those working with poultry.

  ○ However, there have been **no significant numbers of human infections with bird flu since the H7N9 strain** killed around 300 people **during 2016-2017.**

Bird Flu

➢ About:

  ○ **Bird flu**, also known as **Avian influenza (AI)**, is a highly contagious viral disease affecting several species of **food-producing birds** (chickens, turkeys, quails, guinea fowl, etc.) as well as **pet birds and wild birds.**

  ○ Occasionally **mammals, including humans,** may contract avian influenza.

➢ **Types of Influenza Viruses:**

  ○ Influenza viruses are grouped into three types; **A, B, and C.**

  ○ **Only type A** is known to **infect animals** and is **zoonotic**, meaning it can also infect humans.

   ● **Avian influenza virus subtypes** include A(H5N1), A(H7N9), A(H9N2) and A(H10N3).

  ○ Type **B and C mostly infect humans** and typically cause mild disease.

➢ **Classification:**

  ○ **Influenza viruses** are classified into subtypes based on **two surface proteins, Hemagglutinin (HA)** and **Neuraminidase (NA)**.

   ● For example, a virus that has an HA 7 protein and NA 9 protein is designated as subtype H7N9.

  ○ **Highly Pathogenic Avian Influenza (HPAI) A(H5N1)** virus occurs mainly in birds and is highly contagious among them.

  ○ **HPAI Asian H5N1** is especially deadly for poultry.

➢ **Impact:**

  ○ Avian Influenza outbreaks can lead to devastating consequences for the country, particularly the poultry industry.

  ○ Farmers might experience a high level of mortality in their flocks, with rates often around 50%.

Note:

➤ **Prevention:**
  ○ Strict **biosecurity measures** and **good hygiene** are essential in protecting against disease outbreaks.
➤ **Eradication:**
  ○ If the infection is detected in animals, **a policy of culling infected and contact animals** is normally used in an effort to rapidly contain, control and eradicate the disease.
➤ **India's Status:**
  ○ **Fresh cases of bird flu** were reported in different states of India **between December 2020-January 2021** causing alarm across the country.
  ○ **Previously in 2019**, India was **declared free from Avian Influenza (H5N1)**, which had also been **notified to the World Organization for Animal Health (OIE).**
    ● The **OIE** is an intergovernmental organisation responsible for improving animal health worldwide. It is headquartered in Paris, France.

Supersonic Commercial Plane

Why in News

The **US airline United has announced plans to buy 15 new supersonic airliners** and "return supersonic speeds to aviation" in the year 2029.

➤ The Airline has agreed to **purchase the Overture aircraft from Boom Supersonic** (a Denver-based start-up), with the **planes able to fly at Mach 1.7 faster than the speed of sound.**
➤ The new supersonic "Overture" aircraft will **become the world's fastest commercial airliner**, reducing travel time by about half of today's planes.

Key Points

➤ **Background:**
  ○ **Concorde**, the British-French turbojet-powered commercial airliner, **was the first aircraft to carry passengers at supersonic speed.** Supersonic planes flew passengers **from 1976 until 2003.**
  ○ But eventually **had to discontinue**, due to cost and other concerns.
➤ **Supersonic Plane**:
  ○ Supersonic aircraft are planes that **can fly faster than the speed of sound.**

○ Usually, supersonic planes can travel at the **speed of around 900 kmph, twice the speed of normal aircraft.**
○ The **technology for supersonic flights is actually over 70 years old,** but only recently has been used for commercial flying.
  ● Before 1976, when the first commercial supersonic flight took off, the planes were **used entirely for military purposes.**
➤ **Boom's Overture Supersonic Aircraft:**
  ○ The Overture aircraft would **travel at the speed of Mach 1.7 or 1,805 kmph** with a **range of 4,250 nautical miles.**
  ○ In a single flight, it could **carry 65 to 88 passengers** and reach **an altitude of 60,000 ft.**
  ○ Trial flights are scheduled to begin in 2026, with commercial use coming three year later.
  ○ It will **build upon Concorde's legacy** through faster, more efficient and sustainable technology.
  ○ The company has claimed to produce an eco-friendly aircraft with "**net-zero carbon emissions**", set to fly with 100% **sustainable aviation fuel (SAF).**
    ● **Sustainable aviation fuels** include **biofuels** and synthetic kerosine that are manufactured using renewable and sustainable materials.
  ○ It aims for "**zero overland noise.**"
    ● This essentially means that it will cruise at supersonic speeds only over water, ensuring that no **sonic boom** or excessive noise reaches the surfaces where people live.
    ● It will be equipped with **advanced aerodynamics** and **carbon composite materials**.
    ● This will be able to **cut significant development and maintenance costs** in ways which the Concorde planes could not.
➤ **Challenges with Supersonic Planes:**
  ○ **High Manufacturing Cost**: The costs of making "sustainable" supersonic planes are extremely high.
  ○ **Environmental Cost:** The very nature of its flying using excessive amounts of fuel and energy is likely to have high environmental costs.
    ● Despite the use of sustainable fuels, the **greenhouse gas emissions** are not nullified.
    ● The plane consumes high amounts of fuel in order to take off, that too in a market where sustainable fuels aren't readily available.

Note:

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❍ **Excessive Noise Pollution**: The speed of the planes result in producing excessive amounts of noise pollution in the environment.

- The "Sonic Boom" created by these planes feels like an explosion to the human ear.
- This, thus, limits where and when the supersonic planes can fly. They can only reach their actual speed until they are far enough from people and completely over the ocean.

❍ **Regulatory Approvals:** To fly such planes can be unsuccessful, especially for transatlantic flights. Getting clearance from regulators around the world would be a challenging task, since the supersonic planes in the past have already been flagged for these hurdles.

❍ **Too Costly**: It would not be economically feasible for everyone. Only the very rich can afford supersonic planes, as a ticket is likely to be way more costlier than a first class ticket of a regular plane.

Fast Radio Bursts

Why in News

Recently, researchers from the **Pune-based Tata Institute for Fundamental Research (TIFR)** and the **National Centre for Radio Astrophysics (NCRA)**, have assembled the largest collection of **Fast Radio Bursts (FRBs)** catalogue.

➢ The data is from **Canadian Hydrogen Intensity Mapping Experiment (CHIME).**

➢ In 2020, the **National Aeronautics and Space Administration (NASA)** spotted **FRB for the first time in the Milky Way.**

Key Points

➢ **Fast Radio Bursts:**

❍ FRB are **bright bursts of radio waves** (radio waves can be produced by astronomical objects with changing magnetic fields) whose **durations lie in the millisecond-scale**, because of which it is difficult to detect them and determine their position in the sky.

- It was first **discovered in 2007.**

❍ A defining property of these bursts is their **dispersion** (scattering or separation)**,** the bursts **produce a spectrum of radio waves,** and as the

waves travel through matter, they spread out or disperse with bursts at higher radio frequencies arriving at telescopes earlier than those at lower frequencies.

- **Dispersion** can result in **signal degradation in many applications, especially over large distances.**

❍ This dispersion allows researchers to learn about two important things:

- They can measure this dispersion to **learn about the stuff that radio bursts pass through as they travel toward Earth**
- They can indirectly **determine how far apart things are**.

➢ **FRBs Catalogue & Findings:**

❍ The new catalogue significantly **expands the current library of known FRBs**, and is already **yielding clues as to their properties.**

❍ For instance, the newly discovered bursts appear to fall in **two distinct classes: those that repeat, and those that don't.**

- The **repeaters looked different**, with **each burst lasting slightly longer** and emitting more focused radio frequencies than bursts from single, non-repeating FRBs.
- These differences strongly suggest that emission from repeaters and non-repeaters is generated either by different physical mechanisms or in different astrophysical environments

❍ The bursts were **evenly distributed in space, seeming to arise from any and all parts of the sky**.

❍ Bright FRBs occur at a rate of about **800 per day** across the entire sky - the most precise estimate of FRBs overall rate to date.

➢ **Origin of FRBs:**

Note:

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- FRBs have been spotted in various and distant parts of the universe, as well as in our own galaxy. Their **origins are unknown and their appearance is highly unpredictable.**
- The **CHIME** project has nearly quadrupled the number of fast radio bursts discovered to date.
  - The telescope has detected **535 new FRBs** in its first year of operation itself, **between 2018 and 2019.**
  - With more observations, astronomers hope soon to **find the origins of the FRBs.**

➢ **Chime:**
- It is a **novel radio telescope that has no moving parts.** Originally **conceived to map the most abundant element in the universe - hydrogen** - over a good fraction of the observable universe, this unusual telescope is **optimized to have a high mapping speed.**
- It is located at the **Dominion Radio Astrophysical Observatory**, operated by the **National Research Council of Canada in British Columbia, Canada.**
- The telescope **receives radio signals each day from half of the sky as the Earth rotates.**

➢ **Significance of Studying FRBs:**
- The unique properties of fast radio bursts and their host galaxies combined with recent technological advancements have given researchers **hope that these phenomena can be used to answer some long-standing questions** about the **universe.**
- It can be **used to understand the three–dimensional structure of matter** in the universe and to learn about **poorly understood early moments in the evolution of the universe.**

New Shephard: Taking Tourists to Space

Why in News

Recently, a company called **Blue Origin** concluded the online auction for the **first seat on New Shephard**, a rocket system meant to take tourists to space.

➢ It takes its first human flight on 20th July, 2021, which marks the **52nd anniversary of Neil Armstrong and Buzz Aldrin's moon landing.**

Key Points

➢ **New Shephard:**
- New Shephard has been named after **astronaut Alan Shephard – the first American to go to space** – and **offers flights to space over 100 km above the Earth** and accommodation for payloads.
- It is a **rocket system that has been designed to take astronauts and research payloads past the Karman line**.
- The idea is to provide **easier and more cost-effective access to space** meant for purposes such as academic research, corporate technology development and entrepreneurial ventures among others.
- It will **also allow space tourists to experience microgravity** by taking them 100 km above the Earth.
  - **Microgravity** is the condition in which people or objects appear to be weightless. The effects of microgravity can be seen when astronauts and objects float in space.

Karman Line

➢ The Karman line is the **internationally recognized boundary of space**.

➢ The line is named after **Theodore von Kármán (1881–1963),** a Hungarian American engineer and physicist, who was active primarily in aeronautics and astronautics.
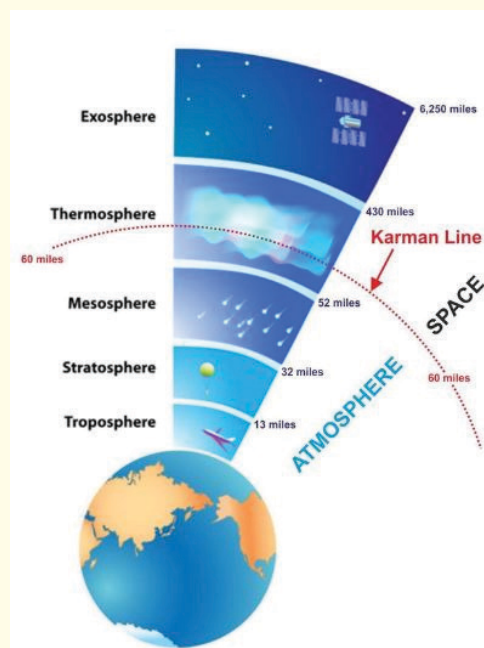
Note:

❍ He was the first person to calculate the altitude at which the atmosphere becomes too thin to support aeronautical flight and arrived at 83.6 km himself.

➢ The **Fédération Aéronautique Internationale (FAI) defines Karman Line as the altitude of 100 kilometres** above Earth's mean sea level.

  ❍ FAI is the world **governing body for air sports, and also stewards definitions regarding human spaceflight.**

➢ However, other organizations do not use this definition. **There is no international law defining the edge of space, and therefore the limit of national airspace.**

➢ **Space Tourism:**

  ❍ **About**:

   ● Space tourism is about **humans travelling into space for recreational purposes**. It seeks to **give laypeople the ability to go to space for recreational, leisure or business purposes.**

   ● It will **make space more accessible to those individuals who are not astronauts** and want to go to space for non-scientific purposes.

   ● Three private companies – Blue Origin, Virgin Galactic and SpaceX are now spearheading the human endeavour to explore space.

   ● Their progress will decide whether space travel will one day become as accessible as air travel.

  ❍ **Previous Space Tourists:**

   ● The first space tourist was **US millionaire Dennis Tito**, who in 2001 paid USD 20 million to hitch a ride on a **Russian Soyuz spacecraft** to visit the international space station and spent eight days there.

■ After Tito, there were **only seven other private citizens who travelled to space until 2009** when the Russian space agency wound up the business of selling tickets to private citizens.

● **Space Adventures** is the **only private company** to send paying customers to orbital space so far. In 2004, test pilot **Mike Melville became the first private astronaut to fly beyond the Karman Line**.

❍ **Significance**:

  ● **Huge Market:**

   ■ There is an estimated market of 2.4 million people for such flights.

  ● **Base for Testing:**

   ■ It **can provide a base for testing supersonic travel** between different destinations on earth, significantly compressing travel time. Besides, **it heralds the entry of the private sector into this arena.**

❍ **Concerns:**

  ● **Climate Change:** Soot or black carbon that results from rocket emissions accumulated in the stratosphere (approximately 5 to 31 miles above the Earth) cannot be washed away by rain or winds, as it is in the lower atmosphere. As a result, black carbon may linger in the stratosphere for years, c**ausing exponentially more climate change.**

  ● **Health**: It can cause health concerns as passengers could also face motion sickness and disorientation, which can **affect vision, cognition, balance and motor control.**

■■■

Note:

Environment and Ecology

Highlights

- Rescuing Gharials: Mahanadi River
- Dehing Patkai and Raimona National Parks: Assam
- CEO Water Mandate
- Srivilliputhur-Megamalai Tiger Reserve and Vaigai River: Tamil Nadu
- State of Finance for Nature Report
- Blue-finned Mahseer
- CEM-Industrial Deep Decarbonization Initiative
- 'Sea Snot' Outbreak in Turkey
- Hindu Kush Himalayan Mountains
- India's Ethanol Roadmap
- Operation Oliva for Olive Ridley Turtles
- Dialogue on Desertification, Land Degradation and Drought

Rescuing Gharials: Mahanadi River

Why in News

Recently, **Odisha announced a cash award of Rs.1,000 to conserve gharials in Mahanadi River Basin.**

Key Points

- **About Gharials:**
  - ○ Gharials, sometimes **called gavials**, are **a type of Asian crocodilian distinguished by their long, thin snouts. Crocodilians are a group of reptiles** that includes crocodiles, alligators, caimans, and more.
  - ○ **India has three species of Crocodilians namely:**
    - **Gharial** (Gavialis gangeticus): **IUCN Red List- Critically Endangered**
    - **Mugger crocodile** (Crocodylus palustris): **IUCN- Vulnerable.**
    - **Saltwater crocodile** (Crocodylus porosus): **IUCN- Least Concern.**

- All the three are listed on **Appendix I** of **CITES** and **Schedule I** of the **Wild Life (Protection) Act, 1972.**
- **Exception: Saltwater Crocodile populations of Australia, Indonesia and Papua New Guinea** are **included in Appendix II of CITES.**
- ○ **Habitat of Gharials:**
  - **Natural Habitat:** Fresh waters of the northern part of India.
  - **Primary Habitat: Chambal river** (a tributary of Yamuna).
  - **Secondary Habitat: Ghagra**, Gandak river, Girwa river (Uttar Pradesh), the Ramganga river (Uttarakhand) and the Sone river (Bihar).
- ○ **Significance**: Population of Gharials are **a good indicator of clean river water.**
- ○ **Conservation Efforts:**
  - Breeding Centres of **Kukrail Gharial Rehabilitation Centre in Lucknow,** Uttar Pradesh, **National Chambal Sanctuary (Gharial Eco Park, Madhya Pradesh).**
- ○ **Threats:**
  - Increased river pollution, dam construction, massive-scale fishing operations and floods.
 - Illegal sand mining and poaching.
- **Mahanadi River:**
  - ○ **About:**
    - The Mahanadi River system is the **third largest of peninsular India after Godavari and Krishna**, and the **largest river of Odisha state.**

Note:

- The **catchment area** of the river extends to **Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and Maharashtra.**
- Its **basin is bounded by** the Central India hills on the north, by the Eastern Ghats on the south and east and by the Maikala range on the west.
  ○ **Source:**
- It **rises from a place near Sihawa in Bastar hills in the state of Chhattisgarh** to the south of Amarkantak.
  ○ **Major Tributaries:** Seonath River, Hasdeo river, Mand river, Ib river, Jonking river, Tel river
  ○ **Mahanadi River Dispute:** The Central Government constituted **Mahanadi Water Disputes Tribunal** in 2018.
  ○ **Major Dams/Projects on Mahanadi:**
- **Hirakud Dam:** This is the longest dam of India.
- Ravishankar Sagar, Dudhawa Reservoir, Sondur Reservoir, Hasdeo Bango and Tandula are other major projects.

Mahanadi River Basin
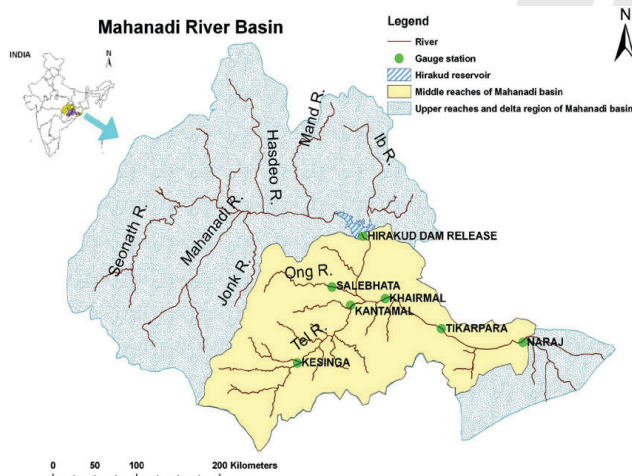
Dehing Patkai and Raimona National Parks: Assam

Why in News

Recently, the Assam government notified **Dehing Patkai** as the **7th National Park** of the state.

➤ It was **created shortly after Raimona reserve forest in western Assam's Kokrajhar district was upgraded to a national park (6th)** on the occasion of **World Environment Day (5th June).**

Key Points

➤ **About Dehing Patkai National Park:**
  ○ **Location:**
- It is located within the larger **Dehing Patkai Elephant Reserve**, which spreads across the **coal- and oil-rich** districts of **Upper Assam** (Dibrugarh and Tinsukia districts).
- The **oldest refinery of Asia in Digboi** and **'open cast' coal mining at Lido** are located near the sanctuary.
- The Dehing Patkai Wildlife Sanctuary is **also known as the Jeypore Rainforest.**
  ○ **Naming:**
- **Dehing** is the name of the **river that flows through this forest** and **Patkai is the hill a**t the foot of which the sanctuary lies.
  ○ **Flora:**
- It is b**elieved to be the last remaining contiguous patch of lowland rainforest area** in Assam.
  ○ **Fauna:**
- Rare fauna found in the region include **Chinese pangolin**, flying fox, wild pig, sambar, barking deer, **gaur**, **serow** and **Malayan giant squirrels**.
- It is the **only sanctuary in India which is home to seven different species of wild cats** - **tiger**, **leopard**, **clouded leopard**, leopard cat, **golden cat**, jungle cat and marbled cat.
- **Assamese macaque,** a primate found in the forest, is in the **red list of Near Threatened species.**

Note:

- It has the **highest concentration of the rare endangered White Winged Wood Duck.**

➤ **Raimona National Park:**
  - ○ **Location:**
    - The Raimona National Park is **within the Bodoland Territorial Region.**
    - The area of the park **includes the northern part of the notified Ripu Reserve Forest**, which forms the **western-most buffer to the Manas National Park** that straddles the India-Bhutan border.
  - ○ **Borders and Boundary:**
    - It is **bounded on the west by the Sonkosh river** and the **Saralbhanga river on the east** .
      - ▪ Both the rivers are **tributaries of Brahmaputra.**
    - The **Pekua river** defines Raimona's **southern boundary.**
  - ○ **Transboundary Conservation Landscape:**
    - It shares contiguous forest patches of **Phipsoo Wildlife Sanctuary and Jigme Singye Wangchuck National Park of Bhutan** creating a transboundary conservation landscape of more than 2,400 sq km.
  - ○ **Flora and Fauna:**
    - It is **famous for Golden Langur,** an endemic species which has been named as the mascot of Bodoland region.
    - It also has Asian elephant, Royal Bengal tiger, Clouded leopard, Indian gaur, Wild water buffalo, Spotted deer, Hornbill, more than 150 species of butterflies, 170 species of birds, 380 varieties of plants and orchids.

➤ **National Parks in Assam:**
  - ○ **Assam** now has the **third most** National Parks after the **12 in Madhya Pradesh** and **nine in the Andaman and Nicobar Islands.**

- ○ The **seven National Parks** in the State are **Dehing Patkai, Raimona, Kaziranga, Manas, Nameri, Orang, and Dibru-Saikhowa.**
- ○ **Kaziranga and Manas** are **UNESCO World Heritage Sites.** They are also tiger reserves along with Nameri and Orang.

CEO Water Mandate

Why in News

NTPC Ltd. has become **a signatory** to the **United Nations' Global Compact's CEO Water Mandate.**

➤ NTPC Ltd is **India's largest power utility under the Ministry of Power.**

Key Points

➤ **About:**
  - ○ It is a **special initiative of** the **UN Secretary-General** and the **UN Global Compact**, implemented in partnership with the **Pacific Institute.** It was **established in 2007.**
  - ○ It **aims to** demonstrate commitment and **efforts of companies to better their water and sanitation agendas** as part of long term **Sustainable Development Goals.**
  - ○ It is a **global commitment platform for corporate water stewardship**. Water stewardship is the **use of water in ways that are socially equitable, environmentally sustainable, and economically beneficial.**
  - ○ It has **six commitment areas:**
    - Direct operations (i.e. Measuring and Reducing water use).
    - Supply chain and watershed management.
    - Collective action.
    - Public policy.
    - Community engagement.
    - Transparency.

➤ **UN Global Compact:**
  - ○ The United Nations Global Compact is a **non-binding United Nations** pact **to encourage businesses worldwide to adopt sustainable and socially responsible policies,** and to report on their implementation.

Note:

- It is a principle-based framework for businesses, **stating ten principles in the areas of human rights, labor, the environment and anti-corruption.**
- Under the Global Compact, companies are brought together with **UN agencies, labor groups and civil society.** Cities can join the Global Compact through the Cities Programme.
- **India** is also **a part of the UN Global Compact.**

➤ **Other Initiatives which make companies a part of Environmental Conservation:**
- **Industrial Deep Decarbonization Initiative (IDDI):**
  - It is a global coalition of public and private organisations who are working to stimulate demand for low carbon industrial materials.
  - **Coordinated by UNIDO (United Nations Development Industrial organisation),** the IDDI is **co-led by the UK and India.**
- **Race to Zero Campaign:**
  - Race to Zero is the **UN-backed global campaign** rallying non-state actors – including companies, cities, regions, financial and educational institutions – to take rigorous and immediate action to halve global emissions by 2030 and deliver a healthier, fairer, zero-carbon world in time.

Srivilliputhur-Megamalai Tiger Reserve and Vaigai River: Tamil Nadu

Why in News

The recently declared **Srivilliputhur-Megamalai Tiger Reserve** in **Tamil Nadu** will provide protection to **Megamalai**, the **Vaigai's primary catchment**, in turn helping water levels to rise in the river.

Key Points

➤ **About Vaigai River:**
- **Origin and Tributaries:**
  - It **originates in the Western Ghats** (Varushanad Hills)**.**
  - It travels through the **Pandya Nadu region** of Tamil Nadu.

Vaigai River
Data (c) OpenStreetMap Contribution and Dis-GIS

- Its **main tributaries** are Suruliyaru, Mullaiyaru, Varaganadhi, Manjalaru, Kottagudi, Kridhumaal and Upparu.
- The Vaigai is **258 kms long** and finally **empties into the Palk Strait** near the **Pamban Bridge** in **Ramanathapuram district.**
- **Heritage River:**
  - The Vaigai was the river that **flowed through the noted city of Madurai**, the **capital** (4th - 11th century CE) **of the ancient and prosperous Pandya kingdom** located in southern Tamil Nadu.
  - The river finds a mention in **Sangam literature** dated to **300 before the Common Era.**
- **Significance:**
  - The river fulfils the **drinking water requirement of five districts of Tamil Nadu** namely Theni, Madurai, Ramanathapuram, Sivagangai and Dindigul.
  - It also provides **irrigation to 2,00,000 hectares** of agricultural land.

➤ **Rejuvenation of Vaigai:**
- Its **deterioration happened at the end of the 18th century** when the British started **deforesting the Megamalai region** which acts as a major catchment

for Vaigai**. Consequently, the **water flow in the river reduced gradually.**

- Some **2,00,000 people died** in this region during the **Great Famine** of **1876-77.**
- Following the famine, the British Crown **proposed diverting water from the Periyar river (Kerala)** and feeding it to the Vaigai through a tunnel.
  - The Vaigai presently **gets about 80% of its water from the Periyar dam.** The **balance 20%** is obtained from the **major watershed of the Megamalai region** during the northeast monsoon season.
- The **Srivilliputhur-Megamalai Tiger Reserve** will **protect wild animals and the natural forests, their habitats** which **act as watersheds.**

- **Srivilliputhur-Megamalai Tiger Reserve:**
  - **Establishment:**
    - It was established **in February 2021.** It was jointly declared by the Centre and Tamil Nadu governments.
    - For this, the **Megamalai WLS** and the adjoining **Srivilliputhur WLS** were clubbed together.
    - Srivilliputhur-Megamalai Tiger Reserve is the **fifth Tiger Reserve of Tamil Nadu**, and **51th tiger reserve of India.**
  - **Ecological Diversity:** Animals seen here are **Bengal tiger**, **elephants**, **gaur**, Indian giant squirrel, **leopard, Nilgiri Tahrs**, etc.
    - It has a mix of tropical evergreen forests and semi-evergreen forests, dry deciduous forests and moist mixed deciduous forests, grassland.

- **Other four Tiger reserves of Tamil Nadu:**
  - **Anamalai tiger reserve**
  - **Kalakkad - Mundanthurai tiger reserve**
  - **Mudumalai tiger reserve**
  - **Sathyamangalam tiger reserve**

State of Finance for Nature Report

Why in News

The UN report, titled **State of Finance for Nature,** analyzes the investment flow in **nature-based solutions (NbS)** and identifies the f**uture investment needed to** meet the climate change, biodiversity and land degradation targets (set in three **Rio Conventions**).

- The report was jointly produced by the **United Nations Environment Programme** (UNEP), the **World Economic Forum** and the **Economics of Land Degradation.**

Key Points

- **About the 'Nature-based solutions (NbS)':**
  - The **NbS** refers to **sustainable management and use of nature** to tackle socio-environmental challenges, which range from disaster risk reduction, climate change and biodiversity loss to food and water security as well as human health.
  - NbS creates **harmony between people and nature, enables ecological development** and represents a holistic, **people-centred response** to climate change.
    - Thus, NbS underpin the **Sustainable Development Goals**, as they support vital ecosystem services, biodiversity, and access to fresh water, improved livelihoods, healthy diets and food security (organic agriculture) from sustainable food systems.
    - Also, NbS are an essential component of the overall global effort to achieve the goals of the **Paris Agreement on Climate Change.**
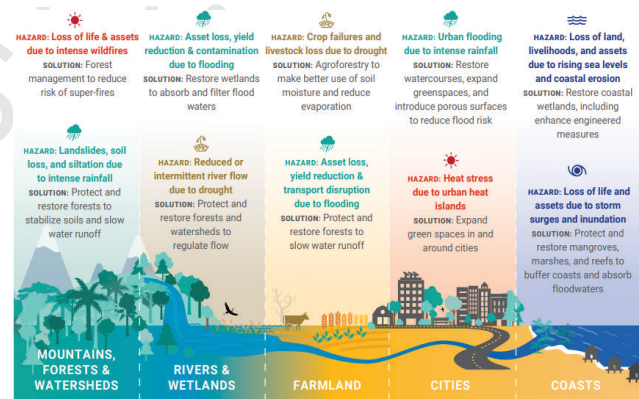
- **Key Findings of Report**:
  - **Current Investments**:
    - Approximately **USD 133 billion** currently flows into nature-based solutions **annually** (using 2020 as base year). It **comprises about 0.10% of global gross domestic product.**
    - The funds flow **to protect biodiversity and landscapes,** mixed with activities such as sustainable forestry.

- NbS finance is **much smaller in scale than climate finance** and relies more heavily on public finance.
  - **Public vs Private Funds:**
    - Public funds make up 86% and private finance 14% of these investments.
    - The **public financial services providers** included the government, development finance institutions (DFIs), environmental / climate funds.
  - **Top Spenders**:
    - Public sector spending for the same is **dominated by the United States and China,** followed by Japan, Germany and Australia.
    - Countries such as **Brazil, India and Saudi Arabia are likely spending large amounts** of money too, but they do not report internationally comparable data.
- Recommendations:
  - **More Investments:**
    - **Public and private actors will need to scale up their annual investments** by at least four times to meet future climate, biodiversity and land degradation targets.
    - **Annual investment should reach USD 536 billion** by 2050.
  - **Enhancing Cash Flows for Investment:**
    - Reforming taxes, repurposing agricultural policies and trade-related tariffs and harnessing the potential of **carbon markets.**
  - **Smart Investments:**
    - Restoration of **natural vegetation and afforestation** are essential to meet international targets.
      - The most important component of annual investment needs is the **cost of establishing new forests**, as it accounts for 80% of total costs.
  - **Making Nature-based Solution a part of Government Policies**:
    - Supporting **inclusion of nature-based solutions in current nationally determined contribution revisions**, national adaptation plans and domestic sectoral legislation.
    - **Aligning private finance with public policy** for scaling up capital flows to nature to a level that can meet the targets of the three Rio Conventions.

- **System to Track Finances**:
  - There is a need for a comprehensive system and framework for labelling, tracking, reporting and verifying the state of finance for NbS.
  - This would improve data comparability and quality as an input to future decision-making.
  - Further, there is a need to increase positive financial flows by de-risking & incentivizing and reducing harmful financial flows.

Blue-finned Mahseer

Why in News

Recently, the **International Union for Conservation of Nature (IUCN)** has moved **Blue-finned Mahseer** from **Endangered to the Least Concern' status** on its **Red List.**

Key Points

- **About**:
  - The Mahseer belongs to the genus *Tor*, of which there are **several subspecies to be found in India** and in other range countries in South Asia.
  - The Blue-finned Mahseer or *Tor Khudree* is one of the subspecies of the Mahseer.
- **Habitat:**
  - Mainly found in the **Mota Mola river east of Pune**. This species is also found in other **rivers of the Deccan Plateau.**
  - The species is migratory; **moving upstream during rains.** It **prefers clean, fast flowing and well oxygenated waters**.
- **Threats:**
  - Threatened by **habitat manipulation**, **over harvesting** and **competition from other fish species.**
- **Significance:**

Note:

- ○ **Freshwater Ecosystem Indicator:**
  - It is very **sensitive to dissolved oxygen levels, water temperature and sudden climatic changes**. It just cannot bear pollution.
- ○ **Cultural:**
  - They have cultural and religious significance as well as they are **protected in 'temple sanctuaries' across India.**

➢ **Conservation Initiatives:**
- ○ Tata Power (private company) is involved in **conservation of the blue-finned for 50 years in Lonavala (near Pune), Maharashtra.**

➢ **Protection status:**
- ○ **IUCN Red List:** Least Concern

International Union for Conservation of Nature

➢ **About:**
- ○ IUCN is a **membership union uniquely** composed of both government and civil society organisations.
- ○ Created in 1948, **it is the global authority on the status of the natural world and the measures needed to safeguard it**. It is headquartered in **Switzerland.**

➢ **The Red List:**
- ○ The IUCN Red List of Threatened Species, is the **world's most comprehensive inventory of the global conservation status** of plant and animal species.
- ○ It divides species into **nine categories:** Not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild and Extinct.
- ○ It is recognized as the **most authoritative guide to the status of biological diversity.**

CEM-Industrial Deep Decarbonization Initiative

Why in News

Recently, India and the UK have launched a new workstream to promote **industrial energy efficiency** under **Clean Energy Ministerial's (CEM) Industrial Deep Decarbonization Initiative (IDDI)** coordinated by UNIDO (United Nations Development Industrial organisation).

➢ It was launched in the **ongoing 12th CEM** (CEM12) **Meeting**, which is **virtually hosted by Chile.**

Key Points

➢ **About 12th CEM Meeting:**
- ○ The objective is **to infuse green technologies** and **stimulate demand for low-carbon industrial material.**
- ○ India is **committed to cut emissions intensity per unit of GDP by 33 to 35% by 2030 (**stated in **Nationally Determined Contributions).**
- ○ The commitment hinges on **effective deployment of low carbon technologies in Energy Intensive Sectors** like Iron & Steel, Cement and Petrochemicals.
- ○ Government policies have resulted in **substantial savings in energy at the demand side** such as **AgDSM (**Agriculture Demand Side Management programme), **MuDSM** (Municipal Demand Side Management) etc.

➢ **About Clean Energy Ministerial (CEM):**
- ○ **Establishment:**
  - It was established **in December 2009 at the UN's Framework Convention on Climate Change conference of parties** in **Copenhagen.**
  - The **Framework for the Clean Energy Ministerial**, adopted at the **seventh Clean Energy Ministerial in 2016**, defines the CEM governance structure and outlines the mission statement, objectives, membership, and guiding principles.
- ○ **Purpose:**
  - CEM is **a high-level global forum to promote policies and programs that advance clean energy technology,** to share lessons learned and best practices, and to encourage the transition to a global clean energy economy.
- ○ **Focus Areas:** The CEM is focused on **three global climate and energy policy goals:**
  - Improve energy efficiency worldwide.
  - Enhance clean energy supply.
  - Expand clean energy access.
- ○ **Members:**
  - 29 countries are part of CEM.
  - **India is also a member** country.
- ○ **11th Clean Energy Ministerial:**
  - The CEM11 was **hosted by the Kingdom of Saudi Arabia in 2020** that was convened at

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Note:

a critical moment to consider the role of clean energy in supporting a rapid, sustainable recovery, and the role of the CEM community in shaping the next clean energy decade.

➢ **Industrial Deep Decarbonization Initiative (IDDI):**
  ❍ **About:**
    ● IDDI is an **initiative of CEM.**
    ● It is a global **coalition of public and private organisations** who are working to stimulate demand for low carbon industrial materials.
    ● In collaboration with **national governments**, IDDI works to standardise carbon assessments, establish ambitious public and private sector procurement targets, incentivise investment into low-carbon product development and design industry guidelines.
  ❍ **Supporting Countries:**
    ● Coordinated by UNIDO, the IDDI is **co-led by the UK and India** and current members include Germany and Canada.
  ❍ **Goals:**
    ● Encouraging governments and the private sector to buy low carbon steel and cement.
    ● Sourcing and sharing data for common standards and targets.

United Nations Development Industrial Organisation
➢ **About:**
  ❍ UNIDO is the **specialized agency of the United Nations** that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability.
➢ **Members:**
  ❍ There are 170 Member countries as of 1st April 2019.
  ❍ **India is also a member** country.
➢ **Discussion:**
  ❍ Members regularly discuss and decide UNIDO's guiding principles and policies in the sessions of the Policy Making Organs.
➢ **Mission:**
  ❍ The mission of UNIDO, as described in the **Lima Declaration adopted** at the fifteenth session of the **UNIDO General Conference in 2013**, is to promote and accelerate **inclusive and sustainable industrial development (ISID)** in Member States.

➢ **Mandate:**
  ❍ UNIDO's mandate is fully recognized in **SDG-9**, which calls to "**Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**".
➢ **Headquarters:** Vienna, Austria.

'Sea Snot' Outbreak in Turkey

Why in News

Recently, **Turkey's Sea of Marmara**, which c**onnects the Black Sea to the Aegean Sea**, has witnessed the **largest outbreak of 'sea snot'.**

➢ A 'sea snot' outbreak was **first recorded in the country in 2007.**

Key Points

➢ **Sea Snot and its Formation:**
  ❍ It is **marine mucilage** that is formed when **algae are overloaded with nutrients** as a result of **water pollution** combined with the effects of **climate change.**
    ● The **nutrient overload** occurs when **algae feast on warm weather** caused by **global warming.**
  ❍ It looks like a **viscous, brown and foamy substance.**
➢ **Concerns:**
  ❍ **Threat to the Marine Ecosystem:**
    ● It has caused **mass deaths among the fish population**, and also killed other aquatic organisms such as **corals** and sponges.
    ● It is now **covering the surface of the sea** and has also **spread to 80-100 feet** below the surface which eventually can collapse to the bottom and cover the sea floor.

Note:

- Livelihoods of Fishermen Affected:
  - As the sludge is getting collected in their nets, making them so heavy that they break or get lost.
  - Moreover, the mucilage coating the strings makes the nets visible to fish and keeps them away.
- Water-borne Diseases:
  - It can cause an outbreak of water-borne diseases such as **cholera** in cities like Istanbul.
- ➤ **Steps that are being Taken:**
  - The entire **Sea of Marmara** will be turned into a **protected area.**
  - Moreover, steps are being taken to **reduce pollution and improve treatment of waste water** from coastal cities and ships.
  - Turkey's biggest **maritime clean-up operation** is being launched and called on local residents, artists and NGOs to join hands to extend assistance.

Nutrient Pollution

- ➤ **About:**
  - It is the process where too **many nutrients, mainly nitrogen and phosphorus**, are added to bodies of water and can act like fertilizer, **causing excessive growth of algae.**
  - This process is also known as **eutrophication.**
- ➤ **Sources of Nutrients:**

World Oceans Day
- ➤ The World Oceans Day is celebrated every year on **8th June** to create awareness about the benefits that mankind gets from the ocean.
  - The Day was designated by the United Nations General Assembly in 2008.
  - Oceans are considered to be the **lungs of the planet**, a critical **part of the biosphere** and are a major **source of food and medicine.**
- ➤ The **theme** of the World Oceans Day 2021 is **'The Ocean: Life and Livelihoods'.**
- ➤ It is especially relevant in the lead-up to the **UN Decade of Ocean Science for Sustainable Development**, which will run from 2021 to 2030.
- ➤ The decade is aimed at strengthening international cooperation to develop scientific research and innovative technologies that are capable of connecting ocean science with the needs of modern society.

- They can **occur naturally** as a result of **weathering of rocks** and soil in the watershed and they can also **come from the ocean due to mixing of water currents.**
- There are more nutrients entering our coastal waters from **wastewater treatment facilities, runoff from land in urban areas** during rains, and **from farming.**
- ➤ **Impact:**
  - **Severe algal growth blocks light that is needed for plants**, such as seagrasses, to grow.
  - When the **algae and seagrass die**, they decay and in this process the oxygen in the water is used up and this leads to **low levels of dissolved oxygen in the water.** This, in turn, **can kill fish, crabs, oysters, and other aquatic animals.**

Hindu Kush Himalayan Mountains

Why in News

According to **UNDP (United Nations Development Programme)**, the **Hindu Kush Himalayan (HKH) mountain ranges could lose up to two-third of its ice by 2100.**

- ➤ About **2 billion people may face food, water shortages by 2100.**

Key Points

- ➤ **About HKH Region:**
  - It is often referred to as the '**Third Pole**', on earth, is spread over **3,500 square kms** across **eight countries** including India, Nepal and China.
  - It contains the world's **third-largest storage** of frozen water after Antarctica and the Arctic.
  - Over **240 million people live in the region's mountains**. **1.7 billion live in the river basins downstream,** while food grown in these basins reaches three billion people.
  - The glaciers **feed at least 10 major river systems**, which have bearings on agricultural activities, drinking water and hydroelectricity production in the region.
- ➤ **Challenges:**
  - According to **ICIMOD's (International Centre for Integrated Mountain Development) 2019**

Note:

assessment, the HKH region will **continue to warm through the 21ˢᵗ century** even if the world is able to limit global warming at the agreed 1.5 degrees Celsius.

- The **Paris agreement** aims to substantially reduce global greenhouse gas emissions in an effort to limit the global temperature increase in this century to 2 degrees Celsius above pre industrial levels, while pursuing the means to limit the increase to 1.5 degrees.
- In the future, even if global warming is kept to 1.5 degrees C above the pre-industrialisation levels, **warming in the HKH region is likely to be at least 0.3 degrees C higher**, and **in the northwest Himalaya and Karakoram at least 0.7 degrees C higher.**

➢ **Threat:**
- High Mountain Asia (the Asian mountain ranges surrounding the Tibetan Plateau) **will lose a substantial part of its cryosphere** in the next decades and thus a substantial part of its water storage abilities. This will lead to **increased water stress** in high mountain areas.
  - A **cryosphere** comprises portions of Earth's surface where **water is in solid form**, including sea ice, lake ice, river ice, snow cover, glaciers, ice caps, ice sheets, etc.

➢ **Causes for the Melting of Glaciers:**
- The melting is driven by larger **anthropogenic modifications** (i.e. influenced by humans) of the atmosphere.
- The HKH region lies **downwind** from some of the most **heavily polluted places** on Earth. This threatens agriculture, climate as well as monsoon patterns.

➢ **Recommendations:**
- It is recommended to **shift away from** fossil fuel use in energy, transport, and other sectors, while changing diets and agricultural practices to move to net-zero emissions of greenhouse gases.
- The countries in the region **need to reduce emissions** of **black carbon** and other air pollutants as well.

➢ **Suggested Policies and Actions to Mitigate the Problem:**
- Farmers will need support **to design and invest in locally-appropriate water storage solutions**, or to shift to agricultural practices that consume less water.
- **Designs of new hydropower plants and grids** will need to take into account the changing climate and water availability.
- **Data and information, capacity-building and early warning systems and infrastructure design** will need to be improved. This calls for sufficient funding and large-scale coordination.

➢ **Related Initiative Taken by India:**
- **National Mission on Sustaining Himalayan Ecosystem (NMSHE)** is one of the eight missions under the **National Action Plan on Climate Change (NAPCC).**
- The mandate is to evolve measures to sustain and safeguard the Himalayan glaciers, mountain ecosystems, biodiversity and wildlife conservation & protection.

The International Centre for Integrated Mountain Development

➢ ICIMOD is **an intergovernmental knowledge and learning centre** working for the people of the Hindu Kush Himalaya (HKH).

➢ It is **based in Kathmandu, Nepal** and works in and for **eight regional member countries** – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan.

India's Ethanol Roadmap

Why in News

The central government has released an expert committee report on the **Roadmap for Ethanol Blending in India by 2025.**

➢ The roadmap proposes **a gradual rollout of ethanol-blended fuel** to achieve E10 fuel supply by April 2022 and phased rollout of E20 from April 2023 to April 2025.

Note:

Key Points

➢ **About the Report**:

○ The **Ministry of Petroleum & Natural Gas (MoP&NG)** had instituted an Expert Group to study the issues such as pricing of ethanol, matching pace of the automobile industry to manufacture vehicles with new engines with the supply of ethanol, pricing of such vehicles, fuel efficiency of different engines etc.

➢ **Ethanol Blending**:

○ **About Ethanol:**

● It is one of the principal **biofuels,** which is naturally produced by the fermentation of sugars by yeasts or via petrochemical processes such as ethylene hydration.

○ **Blending Target:**

● The Government of India has **advanced the target for 20% ethanol blending in petrol (also called E20) to 2025** from 2030.

● **Currently, 8.5% of ethanol is blended with petrol** in India.

○ **Objectives of Ethanol Blending**:

● **Energy Security**:

■ Increased use of ethanol can help **reduce the oil import bill**. India's net import cost stands at USD 551 billion in 2020-21.

■ The E20 program **can save the country USD 4 billion (Rs 30,000 crore) per annum.**

● **Incentives for Farmers**:

■ The oil companies procure ethanol from farmers that **benefits the sugarcane farmers.**

■ Further, the government plans to **encourage use of water-saving crops, such as maize**, to produce ethanol, and **production of ethanol from non-food feedstock.**

● **Impact on Emission**:

■ Use of ethanol-blended petrol **decreases emissions such as carbon monoxide (CO), hydrocarbons (HC)** and **nitrogen oxides (NOx).**

■ The **unregulated carbonyl emissions**, such as acetaldehyde emission **were, however, higher with E10 and E20** compared to normal petrol. However, these emissions were relatively lower.

➢ **Recommendations**:

○ **Notifying Ethanol Blending Roadmap**: MoP&NG should immediately notify the plan for pan-India availability of E10 fuel by April, 2022 and its continued availability thereafter until 2025 for older vehicles, and launch of E20 in the country in phases from April, 2023 onwards so as to make E20 available by April, 2025.

○ **Augmenting Infrastructure for Oil Marketing Companies:** OMCs will need to prepare for the projected requirement of ethanol storage, handling, blending and dispensing infrastructure.

○ **Expediting Regulatory Clearances**: Currently, ethanol production plants/distilleries fall under the "Red category" and require environmental clearance under the Air and Water Acts for new and expansion projects.

● This often takes a long time leading to delays.

● While several steps have been taken to expedite Environment Clearances (EC) under **the Environment Protection Act** there are few areas of concern which if addressed, will facilitate early setting up of ethanol distillation capacities in the country.

○ **Incentivising Ethanol Blended Vehicle:** Globally, vehicles compliant with higher ethanol blends are provided with tax benefits.

● A similar approach may be followed so that the cost increase due to E20 compatible design may be absorbed to a certain extent, as is being done in some states for promoting **Electric Vehicles.**

○ **Pricing of Ethanol Blended Gasoline**: For better acceptability of higher ethanol blends in the country, retail price of such fuels **should be lower than normal petrol** to compensate for the reduction in calorific value and incentivize switching to the blended fuel.

● Tax breaks on ethanol as a fuel may be considered by the government.

Initiatives Already Taken

➢ The **National Policy on Biofuels – 2018**, provides an indicative target of 20% ethanol blending under the Ethanol Blended Petrol (EBP) Programme by 2030.

➢ The **Union Ministry of Road Transport and Highways** has **mandated stickers on vehicles mentioning their E20, E85 or E100 compatibility**.

○ This will pave the way for flex fuel vehicles.

Note:

- ❍ Flex fuel engines can run any ratio of blended petrol from E20 to E100.
- ➤ **E100 pilot project**: It has been inaugurated in Pune.
  - ❍ TVS Apache two-wheelers are designed to run on E80 or pure ethanol (E100).
- ➤ **Pradhan Mantri JI-VAN Yojana, 2019**: The scheme aims to create an ecosystem for setting up commercial projects and boost Research and Development in the 2G Ethanol sector.
- ➤ **GOBAR (Galvanizing Organic Bio-Agro Resources) DHAN Scheme, 2018**: The scheme aims to positively impact village cleanliness and **generate wealth and energy** from cattle and organic waste.
  - ❍ It also aims at creating new rural livelihood opportunities and enhancing income for farmers and other rural people.
- ➤ **Repurpose Used Cooking Oil (RUCO)**: The Food Safety and Standards Authority of India (FSSAI) has launched this initiative that will enable collection and conversion of used cooking oil to biodiesel.

Operation Oliva for Olive Ridley Turtles

Why in News

Recently, the **Indian Coast Guard** has pressed into service an aircraft for **'Operation Oliva'** to protect **Olive Ridley turtles.**

> **Indian Coast Guard**
> - ➤ It is an **Armed Force, Search and Rescue and Maritime Law Enforcement agency** under the Ministry of Defence. It was **established in 1978.**
> - ➤ It has a **wide range of task capabilities for both surface and air operations.** It is one of the **largest coast guards in the world.**

Key Points

- ➤ **Operation Oliva:**
  - ❍ Every year, the Indian Coast Guard's "Operation Olivia", **initiated in the early 1980s,** helps **protect Olive Ridley turtles as they congregate along the Odisha coast** for breeding and nesting from November to December.
    - It also **intercepts unlawful trawling activities.**

- ❍ Round-the-clock **surveillance** is conducted from **November till May** utilising Coast Guard assets such as **fast patrol vessels**, air cushion vessels, interceptor craft and Dornier aircraft to enforce laws near the rookeries (colony of breeding animals).
  - From November **2020 to May 2021**, the **Coast Guard devoted 225 ship days and 388 aircraft hours** to **protect 3.49 lakh turtles** that laid eggs along the Odisha coast.
- ➤ **Olive Ridley Turtles:**
  - ❍ **Features**:
    - The Olive ridley turtles are the **smallest and most abundant of all sea turtles found in the world.**
    - These turtles are **carnivores** and get their name from their olive colored carapace.
    - They **migrate thousands of kilometers** between feeding and mating grounds in the course of a year.
    - They are best known for their unique **mass nesting called Arribada,** where thousands of females come together on the same beach to lay eggs.
  - ❍ **Habitat**:
    - They are **found in warm waters** of the Pacific, Atlantic and Indian oceans.
    - The Odisha's **Gahirmatha Marine Sanctuary** is known as the world's largest rookery of sea turtles.
  - ❍ **Protection Status:**
    - **IUCN Red List**: Vulnerable
    - **CITES**: Appendix I
    - **Wildlife (Protection) Act, 1972**: Schedule I
  - ❍ **Threats**:
    - They are **extensively poached for their meat, shell and leather**, and their eggs.

Note:

drishti

- However, the most severe threat they face is the **accidental killing through entanglement in trawl nets** and gill nets due to uncontrolled fishing during their mating season around nesting beaches.
- An ever-increasing **debris of plastics, fishing nets, discarded nets, polythene and other garbage** dumped by tourists and fishing workers.
- ❍ **Other Initiatives:**
  - To reduce accidental killing in India, the Odisha government has made it mandatory for trawls to use **Turtle Excluder Devices (TEDs),** a net specially designed with an exit cover which allows the turtles to escape while retaining the catch.

Dialogue on Desertification, Land Degradation and Drought

Why in News

Recently, the **Prime Minister** delivered a **keynote address** at the **United Nations (UN) "High-Level Dialogue on Desertification, Land Degradation and Drought"** via video conference.

- ➢ He spoke as the President of the **14ᵗʰ Session** of the **Conference of Parties (CoP) of United Nations Convention to Combat Desertification (UNCCD).**
- ➢ The Dialogue will encourage all member states to **adopt and implement Land Degradation Neutrality (LDN) targets** and **National Drought Plans.**

Key Points

- ➢ **Highlighted Steps Taken by India:**
  - ❍ India is on track to achieve its national commitment on **Land Degradation Neutrality (LDN) (Sustainable Development Goal target 15.3).**
    - **LDN** is a **state** whereby the **amount and quality of land resources**, necessary to support ecosystem functions and services and enhance food security, **remains stable or increases** within specified temporal and spatial scales and **ecosystems.**
  - ❍ Working to **restore 26 million hectares** of degraded land by **2030.**
    - This would contribute to India's commitment to achieving **an additional carbon sink of 2.5 to**

3 billion tonnes of carbon dioxide equivalent (a part of the **Nationally Determined Contribution (NDC)** target under the 2015 **Paris Agreement**).
- ❍ **Over the last 10 years**, around **3 million hectares of forest cover** has been **added.**
- ❍ **For Example:** The **Banni region in Rann of Kutch in Gujarat** suffers from highly degraded land and receives very little rainfall.
  - In that region, **land restoration is done by developing grasslands**, which helps in achieving land degradation neutrality.
- ➢ **On Challenges Faced by Developing World:**
  - ❍ Today, **land degradation** affects over **two-thirds of the world**.
  - ❍ India is assisting fellow **developing countries** to develop land restoration strategies.
  - ❍ A **Centre of Excellence** is being set up in India to promote a scientific approach towards land degradation issues. It is at **Indian Council of Forestry Research and Education.**
    - ICFRE, based in **Dehradun**, is an **autonomous body** of the **Ministry of Environment, Forest and Climate Change.**

Land Degradation

- ➢ **About:**
  - ❍ Land degradation is caused by **multiple forces**, including **extreme weather conditions**, particularly drought.
  - ❍ It is also caused by **human activities** that pollute or degrade the quality of soils and land utility.
- ➢ **Impact:**
  - ❍ **Desertification** is a consequence of **severe land degradation** and is defined as a process that creates arid, semi-arid and dry sub-humid areas.
  - ❍ It **accelerates climate change** and **biodiversity loss**, and **contributes to droughts**, **wildfires, involuntary migration** and the **emergence of zoonotic infectious diseases.**
- ➢ **Global Efforts to Check Land Degradation:**
  - ❍ **United Nations Convention to Combat Desertification (UNCCD):** It was established in 1994, the sole legally binding international agreement linking environment and development to sustainable land management.

Note:

- The **Delhi Declaration of 2019**, signed by 14th CoP of the UNCCD, called for **better access and stewardship over land**, and emphasised gender-sensitive transformative projects.
  - **The Bonn Challenge:** To bring 150 million hectares of the world's deforested and degraded land into restoration by 2020, and 350 million hectares by 2030.
  - **Great Green Wall:** Initiative by Global Environment Facility (GEF), where eleven countries in Sahel-Saharan Africa have focused efforts to fight against land degradation and revive native plant life to the landscape.
- ➢ **India's Efforts to Check Land Degradation:**
  - India is focusing on **sustainable land and resource management** for livelihood generation at community level for making the local lands healthier and productive for providing a better homeland and a better future for its inhabitants.
  - The **National Action Programme for combating desertification was prepared in 2001** to take appropriate action in addressing the problems of desertification.

- Some of the **major programmes** which address issues related to land degradation and desertification, being implemented currently are as follows:
  - Integrated Watershed Management Programme (IWMP) (Pradhan Mantri Krishi Sinchayee Yojana).
  - National Afforestation Programme (NAP).
  - National Mission for Green India (GIM).
  - The **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).**
  - Soil Conservation in the Catchment of River Valley Project.
  - National Watershed Development Project for Rainfed Areas (NWDPRA).
  - **Fodder and Feed Development Scheme**-component of Grassland Development including Grass Reserves.
  - Command Area Development and Water Management (CADWM) programme.
  - **Soil Health Card Scheme**, etc.

■■■

Note:

History

Highlights

- *Chhatrapati Shivaji Maharaj*
- *Ram Prasad Bismil*

Chhatrapati Shivaji Maharaj

Why in News

On the occasion of the anniversary of **Maratha king's coronation day (6ᵗʰ June)**, the Goa government has released a short film on Chhatrapati Shivaji.

Key Points

➢ **Birth:**
  ○ He was **born on 19ᵗʰ February, 1630 at Shivneri Fort in District Pune** in the present-day state of Maharashtra.
  ○ He was born to **Shahaji Bhonsle**, a Maratha general who held the jagirs of Pune and Supe under the Bijapur Sultanate and **Jijabai**, a pious woman whose religious qualities had a profound influence on him.

➢ **Early Life:**
  ○ He displayed his military zeal for the first time **in 1645** when as a teenager, he successfully **got control of the Torna Fort** which was under Bijapur.
  ○ He also acquired the **Kondana Fort.** Both these forts were under Adil Shah of Bijapur.

➢ **Important Battles:**

Battle of Pratapgad, 1659	▪ Fought at the fort of Pratapgad near the town of Satara, Maharshtra, between the forces of the **Maratha king Chhatrapati Shivaji Maharaj and the Adilshahi general Afzal Khan.**
Battle of Pavan Khind, 1660	▪ Fought at a mountain pass in the vicinity of fort Vishalgad, near the city of Kolhapur, Maharashtra, **between the Maratha Sardar Baji Prabhu Deshpande and Siddi Masud of Adilshahi.**
Sacking of Surat, 1664	▪ Fought near the city of Surat, Gujarat, **between Chhatrapati Shivaji Maharaj and Inayat Khan,** a Mughal captain.
Battle of Purandar, 1665	▪ Fought between the **Mughal Empire and Maratha Empire.**
Battle of Sinhagad, 1670	▪ Fought on the fort of Sinhagad near the city of Pune, Maharashtra **between Tanaji Malusare, a commander of Maratha ruler Shivaji Maharaj and Udaybhan Rathod,** fortkeeper under Jai Singh I who was a Mughal Army Chief.
Battle of Kalyan, 1682-83	▪ **Bahadur Khan of the Mughal Empire defeated the Maratha army** and took over Kalyan.
Battle of Sangamner, 1679	▪ Fought between the Mughal Empire and Maratha Empire. This was the **last battle in which the Maratha King Shivaji fought.**

➢ **Conflict with Mughals:**
  ○ He raided Mughal territory near Ahmednagar and in Junnar, 1657.
  ○ Aurangzeb responded to the raids by sending Nasiri Khan, who defeated the forces of Shivaji at Ahmednagar.
  ○ Shivaji defeated a large force of **Shaista Khan (Aurangzeb's maternal uncle)** and the Bijapur army in Pune,1659.
  ○ In **1664,** the wealthy Mughal trading **port of Surat was sacked by Shivaji.**
  ○ In June 1665, the **Treaty of Purandar** was signed between Shivaji and Raja Jai Singh I (representing Aurangzeb).
    ● As per this treaty, many forts were relinquished to the Mughals and it was agreed that Shivaji would meet Aurangzeb at Agra. Shivaji also agreed to send his son Sambhaji as well.

➢ **Arrest of Shivaji:**
  ○ When Shivaji **went to meet the Mughal emperor at Agra in 1666,** the Maratha warrior felt he was insulted by Aurangzeb and stormed out of the court.

Note:

○ He was arrested and kept prisoner. The c**lever escape of Shivaji and his son** from imprisonment in disguise out of Agra is legendary today.

○ After that there was peace between the Marathas and the Mughals until 1670.

○ The **jagir of Berar** which was granted to Sambhaji by the Mughals was taken back from him.

○ Shivaji in response attacked and recovered many territories from the Mughals in a short span of four months.

○ Through his military tactics, Shivaji **acquired a large part of the land in the Deccan and western India.**

➢ **Granted Title:**

○ He was crowned as the **king of the Marathas** on 6th June, 1674, at Raigad.

○ He took on the titles of **Chhatrapati, Shakakarta, Kshatriya Kulavantas and Haindava Dharmodhhaarak.**

○ The **Maratha Kingdom** founded by Shivaji grew larger over time and became the dominant Indian power in the early 18th century.

➢ **Death:**

○ He died on 3rd April 1680.

Administration under Shivaji

➢ **Central Administration:**

○ It was founded by Shivaji for the sound system of administration which was greatly inspired from the **Deccan style of administration.**

○ Most of the administrative reforms were inspired from **Malik Amber reforms in Ahmednagar.**

○ The **King was the supreme head of state** who was assisted by a group of eight ministers known as the **'Ashtapradhan'.**

○ The **peshwa, also known as the mukhya pradhan,** originally headed the advisory council of the raja Shivaji.

➢ **Revenue Administration:**

○ Shivaji abolished **the Jagirdari System** and replaced it with **Ryotwari System**, and changes in the position of hereditary revenue officials which was popularly known **as Deshmukhs, Deshpande, Patils and Kulkarnis.**

○ Shivaji strictly supervised the **Mirasdars** who had hereditary rights in land.

○ The revenue system was patterned on the **Kathi system of Malik Amber** in which every piece of land was measured by Rod or Kathi.

○ Chauth and Sardeshmukhi were other sources of income.

● **Chauth** amounted to **1/4th of the standard** which was paid to Marathas as a safeguard against Shivaji's forces raiding Non-Maratha territories.

● **Sardeshmukhi** was **an additional levy of 10%** demanded from areas outside of the kingdom.

➢ **Military Administration:**

○ Shivaji organised a disciplined and efficient army.

○ The ordinary soldiers were paid in cash, but the chief and military commander were paid through **jagir grants (Saranjam or Mokasa).**

○ The army consists of Infantry i.e. Mavali foot soldiers, Cavalry i.e. Horse riders and equipment holders, Navy.

Ram Prasad Bismil

Why in News

Recently, the Ministry of Culture organised a special ceremony at Shahjahanpur, Uttar Pradesh to mark the **birth anniversary** of freedom fighter **Ram Prasad Bismil.**

Key Points

➢ **Birth**:

○ Was born on **11th June, 1897,** in a village in **Uttar Pradesh's Shahjahanpur district to Murlidhar and Moolmati.**

➢ **About:**

○ Was among the most **noteworthy Indian freedom fighters** who resisted British colonial forces till his last breath.

○ Joined the **Arya Samaj** founded by **Dayananda Saraswati in 1875**. This had a profound influence on him, he **often employed poetry**

RAM PRASAD BISMIL
11 JUNE, 1897 – 19 DECEMBER, 1927
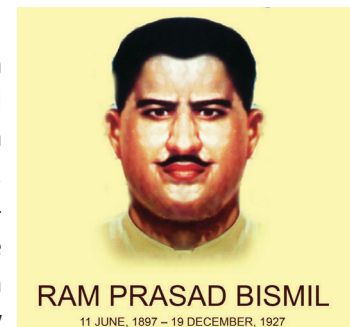
as his weapon of choice in the fight against the imperialist forces.

❍ The ideals of a revolution first took root in his mind when he read about the death sentence awarded to **Bhai Parmanand, an Indian nationalist** and **Arya Samaj missionary.**

● He was all of 18 then and vented his anguish through his poem '**Mera Janm'.**

❍ Believed that **freedom cannot be achieved without violence**, bloodshed, which meant his views were in stark contrast to **Mahatma Gandhi**'s ideals of 'ahimsa'.

➢ **Contributions:**

❍ **Organizations:**

● Formed organisation **Matrivedi** and got in touch with **Genda Lal Dixit, a school teacher**.

■ Both shared revolutionary ideas and wanted to organise the youth of the country to fight the British government.

● Bismil was one of the chief founders of the **Hindustan Republican Association (HRA)** along with Sachindra Nath Sanyal and Jadugopal Mukherjee.

■ HRA was **founded in 1924** and its constitution was drafted chiefly by Bismil.

❍ **Major Cases:**

● Was involved in the **Mainpuri Conspiracy of 1918** in which police found a few young people including Bismil selling books that were not prescribed by the government.

■ Published a pamphlet titled '**Deshwasiyo ke Naam'** and distributed it along with his poem '**Mainpuri ki Pratigya'.** To **collect funds for the parties, they looted government coffers.**

■ He **escaped arrest by jumping into the Yamuna River.**

● In 1925, Bismil and his companions **Chandrasekhar Azad** and **Ashfaqulla Khan** decided to loot a train in **Kakori** near Lucknow.

■ They were successful in their attempt but were arrested alongside a dozen other HRA members within a month of the attack and tried under the **Kakori Conspiracy Case**.

■ The legal process lasted 18 months. **Bismil, Lahiri, Khan and Thakur Roshan Singh were awarded death sentences.**

❍ **Others:**

● Attended the 1921 session of the **Indian National Congress** at Ahmedabad.

● While lodged in Gorakhpur Central Jail, **Bismil went on a hunger strike demanding to be treated as a political prisoner.**

● In Lucknow Central Jail, Bismil wrote his **autobiography,** considered as one of the finest works in Hindi literature and also the cult song **"Mera rang de Basanti chola".**

➢ **Death:**

❍ Hanged on **19th December 1927** at Gorakhpur Jail.

❍ Was **cremated on the banks of river Rapti** and the site was rechristened as Raj Ghat later.
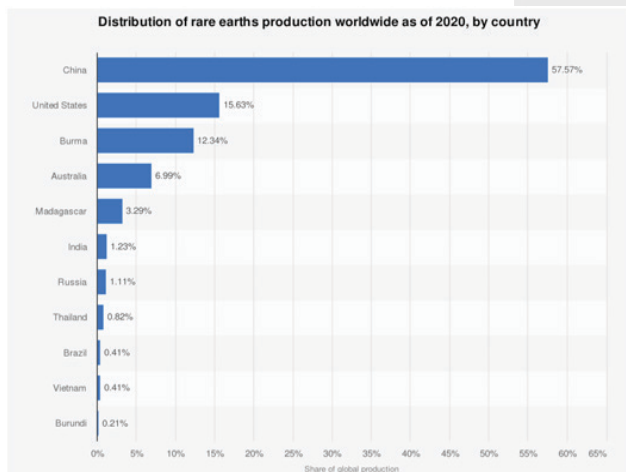
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Note:

Geography

Rare Earth Metals and China's Monopoly

Why in News

China's dominance in the **rare earth metals, key to the future of manufacturing**, is posing a major concern for the West.

Distribution of rare earths production worldwide as of 2020, by country

Key Points

- **China's Monopoly:**
  - **China** has over time acquired **global domination of rare earths**, even at one point, it produced **90% of the rare earths** the world needs.
  - Today, however, it has come down to **60%** and the remaining is produced by other countries, including the **Quad (Australia, India, Japan and United States).**
  - Since 2010, when China curbed shipments of Rare Earths to Japan, the US, and Europe, production units have come up in Australia, and the US along with smaller units in Asia, Africa, and Latin America.

- Even so, the dominant share of processed Rare Earths lies with China.

- **Heavy dependence on China (India and the World):**
  - **India has the world's fifth-largest reserves of rare earth elements**, nearly twice as much as Australia, but it **imports most of its rare earth** needs in finished form from China.
  - In 2019, the **US imported 80%** of its rare earth minerals from China while the **European Union gets 98%** of its supply from China.

- **Opportunity for India:** There are three possible approaches to maximising India's rare earth potential.
  - **New Department for Rare Earths (DRE):**
    - India should create the **new Department for Rare Earths (DRE) under the Ministry of Petroleum & Natural Gas** which could secure access to **Rare Earth Elements (REEs)** of strategic importance by offering viability gap funding to companies to set up facilities in the upstream sector.
    - This could make Indian **Rare Earth Oxide (REOs)** globally competitive.
  - **Downstream Processes and Applications:**
    - Alternatively, it could focus on downstream processes and applications, such as manufacturing rare earth magnets and batteries.
    - This would require a focus on **port infrastructure** and **ease of doing business** measures to allow Indian manufacturers **to import REOs** from white-listed producers cheaply.
  - **Coordination with Other Agencies:**
    - Finally, it could coordinate with other agencies to partner directly with groupings such as the **Quad**, building up a strategic reserve as a buffer against global supply crises.
      - With adjustments to the existing policy, India could emerge as a **rare earths supplier to**

the world and use these resources to power a **high-end manufacturing economy** geared to the needs of the 21st century.

Rare Earth Elements

➢ They are a set of **seventeen metallic elements.** These include the **fifteen lanthanides** on the **periodic table** in addition to **scandium and yttrium** that show similar physical and chemical properties to the lanthanides.

➢ The **17 Rare Earths** are cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y).

➢ These minerals have **unique magnetic, luminescent, and electrochemical properties** and thus are **used in many modern technologie**s, including consumer electronics, computers and networks, communications, health care, national defense, etc.

➢ Even **futuristic technologies** need these REEs (For example high-temperature superconductivity, safe storage and transport of hydrogen for a post-hydrocarbon economy, environmental global warming and energy efficiency issues).

➢ They are called **'rare earth'** because earlier it was **difficult to extract them from their oxides forms technologically.**

➢ They occur in **many minerals** but typically **in low concentrations** to be refined in an economical manner.

India's Current Policy on Rare Earths

➢ Exploration in India **has been conducted by the Bureau of Mines and the Department of Atomic Energy.** Mining and processing has been performed by some minor private players in the past, but is **today concentrated in the hands of IREL** (India) Limited (formerly Indian Rare Earths Limited), a Public Sector Undertaking under the Department of Atomic Energy.

➢ India has granted government corporations such as **IREL** a **monopoly** over the primary mineral that contains **REEs: monazite beach sand**, found in many coastal states.

WHERE ARE THE RARE EARTHS USED
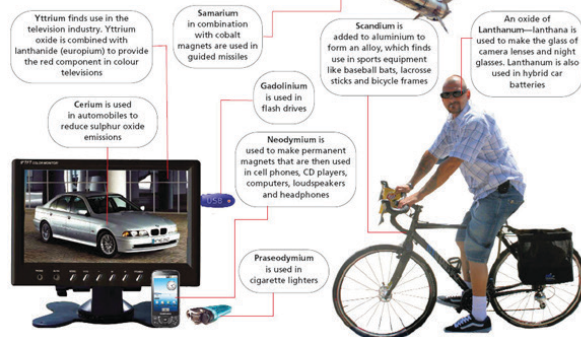
➢ IREL produces **rare earth oxides** (low-cost, low-reward **"upstream processes"**), selling these to foreign firms that extract the metals and manufacture end products (high-cost, high-reward **"downstream processes"**) elsewhere.

➢ **IREL's focus** is to provide **thorium** — extracted from monazite — to the **Department of Atomic Energy.**

Devika River Project: J&K

Why in News

Recently, the Minister of State for Development of North Eastern Region has asked for suggestions for the **Devika River project in Udhampur, J&K.**

➢ This project is compared with the **Namami Gange Project.**

Key Points

➢ **About:**
  ○ This is a **Rs. 190 crore Project.**
  ○ The work on the project was **started in March 2019 under the National River Conservation Plan (NRCP).**
  ○ Under the project, bathing **"ghats"** (places) on the banks of the Devika River will be **developed, encroachments** will be **removed, natural water bodies** will be **restored** and **catchment areas will be developed** along with **cremation ground.**
  ○ The project includes the **construction of three sewage treatment plants**, **sewerage network** of 129.27 km, development of two cremation ghats, protection fencing and landscaping, **small hydropower plants** and **three solar power plants.**

Note:

○ On completion of the project, the rivers will see r**eduction in pollution and improvement in water quality.**

➢ **About Devika River:**

○ Devika river **originates from the hilly Suddha Mahadev temple in Udhampur district of Jammu and Kashmir** and flows down towards **western Punjab** (now in Pakistan) where it **merges with the Ravi river.**

○ The river holds **religious significance** as it is revered by Hindus as the **sister of river Ganga.**

○ In June 2020, **Devika Bridge** was inaugurated in Udhampur. Apart from taking care of traffic congestion, the Devika Bridge was also meant t**o help smooth passage of Army convoys and vehicles**.

National River Conservation Plan

➢ **About:**

○ National River Conservation Plan (NRCP) is **a centrally funded scheme launched in 1995** aimed at **preventing the pollution of rivers.**

○ Programs for river conservation are being implemented under National River Conservation Plan (NRCP) and NGRBA (National Ganga River Basin Authority).

➢ **Activities under NRCP:**

○ Interception and Diversion works to capture the raw sewage flowing into the river through open drains and divert them for treatment.

○ Sewage Treatment Plants for treating the diverted sewage.

○ Low Cost Sanitation works to prevent open defecation on riverbanks.

○ Electric Crematoria and Improved Wood Crematoria to conserve the use of wood and help in ensuring proper cremation of bodies brought to the burning ghats.

○ River Front Development works such as improvement of bathing ghats.

○ Public awareness and public participation.

○ Human Resource Development (HRD), capacity building, training and research in the area of River Conservation.

○ Other miscellaneous works depend upon location specific conditions including the interface with human population.

Black Carbon and Glacier Melting

Why in News

The report titled "**Glaciers of the Himalayas: Climate Change, Black Carbon and Regional Resilience**" says that the **glaciers** are melting faster than the global average ice mass. However, the strong policy on **black carbon** can sharply cut glacier melt.

➢ The research report is **released by the World Bank** and covers the **Himalaya**, **Karakoram**, and **Hindu Kush (HKHK)** mountain ranges.

Black Carbon

➢ Black carbon is **a kind of an aerosol.**

○ An **aerosol** is a suspension of fine solid particles or liquid droplets in the air.

➢ Among aerosols (such as brown carbon, sulphates), Black Carbon (BC) has been **recognized as the second most important anthropogenic agent for climate change** and the **primary marker to understand the adverse effects caused by air pollution.**

➢ It **gets emitted** from gas and diesel engines, coal-fired power plants, and other sources that burn fossil fuel. It **comprises a significant portion of particulate matter or PM,** which is an air pollutant.

HKHK Mountain Region:

➢ HKHK Region **spans eight countries;** Afghanistan, Pakistan, India, Nepal, China, Bhutan, Bangladesh and Myanmar and also **has some of the world's tallest mountains including Mt. Everest and K2.**

➢ HKHK Glaciers **feed into river systems** including Ganga, Yangtze, Irrawaddy, and Mekong.

○ The water that runs down from glaciers **feeds the agriculture,** on which nearly 2 billion people are dependent upon.

➢ HKHK Region, also known as the **third pole**, along with China's Tien Shan Mountains holds most ice outside the North and the South Pole.

Key Points

➢ **About Black Carbon:**

○ BC is a **short-lived pollutant** that is the **second-largest contributor to warming the planet behind carbon dioxide (CO_2).**

Note:

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- Unlike other greenhouse gas emissions, BC is **quickly washed out and can be eliminated from the atmosphere if emissions stop.**
- Unlike historical carbon emissions it is **also a localised source with greater local impact.**

➤ **Source of Black Carbon in Himalayan Region:**

  ○ **Industry** (primarily brick kilns) and **residential burning of solid fuel** together account for 45-66% of regional anthropogenic (man-made) BC deposition, followed by **on-road diesel fuels** (7-18%) and **open burning** (less than 3% in all seasons) in the region.

➤ **Impact of Deposits of BC:**

  ○ It **acts in two ways** hastening the pace of glacier melt:
    - By decreasing surface reflectance of sunlight.
    - By raising the air temperature.

➤ **Rate of De-glaciation**:

  ○ The rate of retreat of HKHK glaciers is **estimated to be 0.3 metres per year in the west to 1.0 metre per year** in the east.

  ○ Full implementation of **current policies to mitigate BC can achieve a 23% reduction** but **enacting new policies** and incorporating them through regional cooperation among countries can achieve enhanced benefits.
    - **National Mission on Sustaining Himalayan Ecosystem (NMSHE)** is one such policy adopted in India. It is one of the eight missions under the **National Action Plan on Climate Change (NAPCC).**

  ○ **BC deposits can be sharply reduced** through new, currently feasible policies **by an additional 50%** from current levels.

➤ **Impact of Glacier Melt**:

  ○ Glacier melt **produces flash floods, landslips, soil erosion, and glacial lake outburst floods (GLOF).**

  ○ In the short run, the higher volumes of melt water **could replace receding groundwater downstream**. But in the long run, decreased water availability would **aggravate water shortage.**

➤ **Measures to be Taken**:

  ○ In the Himalayas, **reducing black carbon emissions from cookstoves, diesel engines, and open burning** would have the greatest impact and could significantly **reduce radiative forcing** and help to maintain a greater portion of Himalayan glacier systems.

- **Radiative forcing** is **a measure of the change in energy balance** as a result of a change in a forcing agent (e.g., greenhouse gases, aerosol, cloud, and surface albedo) to affect the global energy balance and contribute to climate change.

➤ **Steps to be Taken by Regional Governments**:

  ○ Review the **policies on water management**, with an emphasis on basin-based regulation and use of price signals (value of a particular action) for efficiency.

  ○ Careful **planning and use of hydropower** to reflect changes in water flows and availability.

  ○ Increasing the **efficiency of brick kilns** through proven technologies.

  ○ There must also be greater **knowledge sharing** in the region.

Southern Ocean

Why in News

Recently, on the occasion of **World Ocean Day (8th June),** the **National Geographic magazine** has recognised the '**Southern Ocean**' as the world's **fifth ocean**.

➤ The **International Hydrographic Organization** too had **recognised 'Southern Ocean' as a distinct body** of water surrounding Antarctica **in 1937** but had **repealed the same in 1953.**

➤ **Other four Oceans are:** Atlantic, Pacific, Indian, and Arctic Oceans.

> **International Hydrographic Organization**
> ➤ IHO is **an intergovernmental consultative and technical organization** that was **established in 1921** to **support the safety of navigation** and the **protection of the marine environment.**
> ➤ **India is also a member** of IHO.

Key Points

➤ **About:**

  ○ Most of the **waters that surround Antarctica out to 60 degrees south latitude, excluding the Drake Passage and Scotia Sea**, constitute the newly acknowledged Southern Ocean.

  ○ The Southern Ocean is the **only ocean** 'to touch three other oceans (Pacific, Atlantic and Indian Ocean) and to completely embrace a continent rather than being embraced by them'.

Note:

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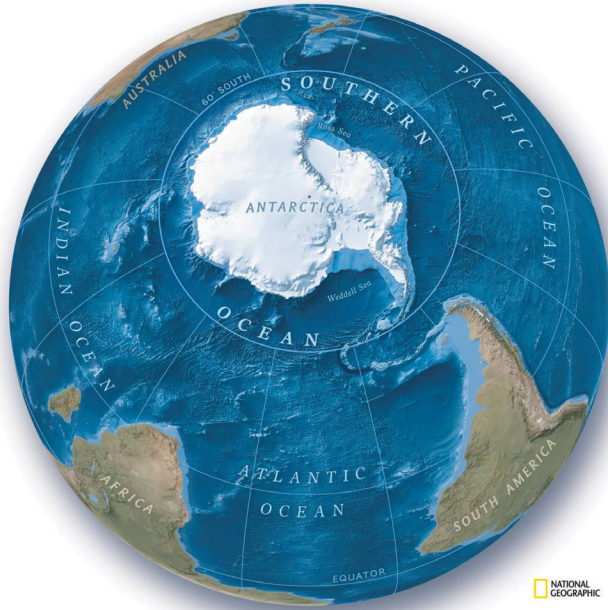
○ It is also defined by its **Antarctic Circumpolar Current** that was formed 34 million years ago. The current flows from **west to east** around Antarctica**.**

➢ **Antarctic Circumpolar Current:**

○ ACC is the **only current in the global ocean to close upon itself in a circumpolar loop.**

● This trait makes the ACC the most important current in the **Earth's climate system** because it links the **Atlantic, Pacific and Indian Oceans** and is the **primary means of inter-basin exchange** of heat, carbon dioxide, chemicals, biology and other tracers.

○ The ACC is **created by** the combined effects of **strong westerly winds** across the Southern Ocean, and the **big change in surface temperatures** between the Equator and the poles.

○ Ocean density increases as water gets colder and as it gets more salty. The **warm, salty surface waters of the subtropics are much lighter than the cold, fresher waters close to Antarctica.**

● The depth of constant density levels slopes up towards Antarctica. The westerly winds make this slope steeper, and the ACC rides eastward along it, faster where the slope is steeper, and weaker where it's flatter.

➢ **Significance of Recognition:**

○ Step towards conservation of World's Oceans, focusing public awareness onto a region in particular needing a conservation spotlight.

○ In addition to the rapid warming of the Southern Ocean due to global warming, industrial fishing on species like krill and Patagonian toothfish had been a concern for decades. It hoped to draw attention to these issues.

■■■

Note:

Social Issues

Highlights

- *Resolution 75/260 of UNGA: HIV/AIDS*
- *PM-CARES for Children Scheme*
- *EPFO and ESIC Extension To Covid-Hit Families*
- *World No Tobacco Day*
- *China Relaxes Two Child Policy: Lessons for India*
- *Seniorcare Aging Growth Engine Initiative*
- *Women in Military*
- *China-ASEAN Meeting*

Resolution 75/260 of UNGA: HIV/AIDS

Why in News

The Union Health Minister addressed the **75th session** of the **United Nations General Assembly (UNGA)** on prevention of **HIV/AIDS**.

➢ The **Resolution 75/260 of UNGA** deals with the Implementation of the Declaration of Commitment on HIV/AIDS and the political declarations on HIV/AIDS.

Key Points

➢ **Important Points of Address**:
  ○ **HIV/AIDS** P**revention Model**: India's unique HIV prevention model is centered around the concept of **'Social Contracting'** through which the 'Targeted Interventions Program' is implemented with support from civil society.
    ● The program is aimed at behaviour change, communication, outreach, service delivery, counselling & testing and ensuring linkages to HIV care.
  ○ **Legal Framework**: The **HIV & AIDS Prevention and Control Act, 2017**, provides a legal and enabling framework to safeguard the human rights of infected and affected populations.
  ○ **Free Treatment**: India is providing free **anti-retro-viral treatment** to close to 1.4 million people.
    ● **Anti-retro-viral therapy**: It is a combination of daily medications that stop the virus from reproducing.
    ● The therapy **helps in protecting CD4 cells** thus

keeping the immune system strong enough to fight off the disease.
    ● It, besides reducing the risk of transmission of HIV, also **helps in stopping its progression to AIDS** (a spectrum of conditions caused by infection due to HIV).
  ○ **National AIDS Control Program:**
    ● The **National AIDS Control Organization (NACO)** launched the first phase of the **National AIDS Control Programme in (1992-1999)**.
      ■ NACO is a division of the Ministry of Health and Family Welfare.
      ■ It was constituted in 1992 to provide leadership to HIV/AIDS control programmes in India through 35 HIV/AIDS Prevention and Control Societies.
    ● India is gradually transitioning the people living with HIV to **Dolutegravir** (a safer and efficacious **anti-retro-viral medication** regimen).
  ○ **The target of Elimination of Mother to Child Transmission of HIV**: For this, viral load testing facilities have been scaled up, and HIV counselling, testing and community-based screening for early diagnosis have been ramped up.
➢ **Sustainable Development Goal (SDG) and HIV/AIDS**: There are a number of **SDGs** related to the HIV response:
  ○ **SDG 3**: Ensure healthy lives and promote wellbeing for all at all ages.
    ● **Target 3.3**: **End AIDS as a public health threat by 2030**
  ○ **SDG 4: Quality education**, including targets on **comprehensive sexual and reproductive health (SRH) education** and life skills.

○ **SDG 5: Gender equality**, including targets on **sexual and reproductive health and rights (SRHR)** and the elimination of violence, harmful gender norms and practices.

○ **SDG 10**: **Reduced inequalitie**s, including targets on **protection against discrimination, and the empowermen**t of people to claim their rights and enhance access to HIV services.

○ **SDG 16**: **Peace, justice and strong institutions**, including reduced violence against key populations and **people living with HIV.**

➢ **Other Initiatives:**

○ **Project Sunrise**: The initiative was launched by the Ministry of Health and Family Welfare in 2016, to tackle the rising HIV prevalence in north-eastern states in India, especially among people injecting drugs.

○ **The Red Ribbon**: The red ribbon is the universal symbol of awareness and support for people living with HIV.

● Wearing a ribbon is a great way to raise awareness on and during the run up to World AIDS Day.

○ **90-90-90**: 90% of those who are HIV positive in the country know their status, 90% of those who know their status are on treatment and 90% of those who are on treatment experience effective viral load suppression.

○ **Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM):** The Global Fund is a 21st-century partnership organization designed to accelerate the end of AIDS, tuberculosis and malaria as epidemics.

Human Immunodeficiency Virus

➢ HIV **attacks CD4, a type of White Blood Cell (T cells)** in the body's immune system. T cells are those cells that move around the body detecting anomalies and infections in cells.

➢ After entering the body, HIV multiplies itself and destroys CD4 cells, thus severely damaging the human immune system. Once this virus enters the body, it can never be removed.

○ The CD4 count of a person infected with HIV reduces significantly. In a healthy body, CD4 count is between 500- 1600, but in an infected body, it can go as low as 200.

➢ Weak immune system makes a person prone to opportunistic infections and cancer. It becomes difficult for a person infected with this virus to recover from even a minor injury or sickness.

➢ By receiving treatment, severe forms of HIV can be prevented.

PM-CARES for Children Scheme

Why in News

The government has announced a special "**PM-CARES for Children**" **scheme** for all those orphaned due to **Covid-19.**

➢ Also, the **Supreme Court** has ordered the district authorities to upload the details of children in need of care and protection on **NCPCR** (National Commission for Protection of Child Rights) **portal Bal Swaraj.**

Timely support — The Centre has announced a comprehensive financial aid package for children orphaned during the pandemic

- Students can be enrolled in **Kendriya Vidyalayas** or private school with govt. taking care of expenses
- Students of 11-18 years can be enrolled in **Sainik Schools** or **Navodaya Vidyalayas**
- **Health insurance** cover of ₹5 lakh
- Corpus of ₹10 lakh per child to be created
- **Monthly stipend** will be offered from corpus after 18 years of age
- Lump sum to be disbursed once the age of 23 is attained

• AFP

Key Points

➢ **About the 'PM-CARES for Children' Scheme:**

○ **Eligibility:**

● **Children** who have **lost both parents** or their **lone surviving parent** or their **legal guardian** or **adoptive parent** due to **Covid-19.**

■ There are a total **577 Covid-19** orphans identified across the country. Also, there has been a rise in cases of **child trafficking**.

○ **Features of the Scheme:**

● **Corpus of Rs. 10 Lakh:**

■ A corpus of **Rs. 10 lakh will be allocated to each of these children** from the PM CARES fund.

■ This corpus will be **used to give a monthly stipend from 18 years of their age,** for the next five years and **on reaching the age**

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of 23 years, he or she will get the corpus amount as one lump-sum for personal and professional use.

- **Education to the Children:**
  - The education expenses of younger children will be supported by way of **admission to Kendriya Vidyalayas and private schools** up to higher secondary level.
  - These children will also be supported during **their higher education** through either a **scholarship** equivalent to the tuition fees or **educational loans** where the interest on the loan will be paid by the PM-CARES fund.
- **Health Insurance:**
  - All children will be **enrolled as a beneficiary under Ayushman Bharat Scheme** with a health insurance cover of Rs. 5 lakh.
  - The **premium amount will be paid by PM-CARES till a child turns 18.**

PM-CARES Fund

➢ The government has set up the **Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM-CARES Fund)** to deal with any kind of emergency or distress situation like posed by the Covid-19 pandemic.

➢ The Fund is a **public charitable trust** with the **Prime Minister as its Chairman.** Other Members include **Defence Minister, Home Minister** and **Finance Minister.**

➢ The Fund **enables micro-donations** as a result of which a large number of people will be able to contribute with the **smallest of denominations.**

➢ It will strengthen **disaster management capacities** and encourage research on **protecting citizens.**

➢ **Contribution** to **PM - CARES** Fund Qualifies as **CSR (Corporate Social Responsibility) Expenditure.**

➢ **Bal Swaraj COVID-Care**
  - The **NCPCR** has devised **an online tracking portal "Bal Swaraj (COVID-Care)"** for children in need of care and protection.
  - This has been created with a purpose **for online tracking and digital real time monitoring mechanism of children** who are in need of care and protection.

National Commission for Protection of Child Rights

➢ **NCPCR** is **a statutory body** set up in March 2007 under the **Commissions for Protection of Child Rights (CPCR) Act, 2005.**

➢ It is under the administrative control of the **Ministry of Women & Child Development.**

➢ The Commission's mandate is **to ensure** that all **laws, policies, programmes, and administrative mechanisms** are in consonance with the **child rights perspective as enshrined in the Constitution of India** and also the **UN Convention on the Rights of the Child.**

➢ It **inquires into complaints** relating to a child's right to free and compulsory education under the **Right to Education Act, 2009.**

➢ It **monitors** the implementation of **Protection of Children from Sexual Offences (POCSO) Act, 2012.**

EPFO and ESIC Extension To Covid-Hit Families

Why in News

Recently, the government has announced an **extension of pension coverage** and **insurance benefits** for families of those who died due to **Covid-19.**

➢ The pension coverage will be extended under the **Employees' state Insurance Corporation of India (ESIC) scheme** and insurance benefits under the **Employees' Deposit-Linked Insurance (EDLI) scheme** for members registered under the **Employees' Provident Fund Organisation (EPFO).**

Key Points

➢ **Extension of Benefits Under ESIC Scheme:**
  - **All dependent family** members of such persons(who died of Covid) will be eligible for a pension **equivalent to 90 %** of the average daily wage drawn by the worker as per the existing rules.
    - This benefit will be available retrospectively with effect **from 24th March 2020 till 24th March 2022.**
  - The eligibility conditions for the **ESIC** benefits are likely to include the norm that the insured person must have been registered on the **ESIC online portal** at least **three months prior** to the diagnosis of **Covid resulting in death**, the insured

Note:

person must have been employed for wages and contributions for **at least 78 days.**

➢ **Under EPFO-EDLI:**
  ○ The maximum insurance benefit has been increased to **Rs 7 lakh from Rs 6 lakh**.
  ○ The **provision of minimum** insurance benefit of **Rs 2.5 lakh** has been restored and it will apply retrospectively from February 2020 for the next three years.
  ○ Benefits are being made available to families of **even those employees** who may have changed jobs in the **last 12 months preceding his/her death.**
  ○ All surviving dependent family members of **EPFO** are eligible to avail **benefits of EDLI** in case of death of the member.
    ● **About 6.53 crore** families are expected to be eligible.

Employees' State Insurance(ESI) Scheme:

➢ **About:**
  ○ It is a multidimensional social system which provides **socio-economic protection** to the **worker population** and immediate dependent or family covered under the **ESI scheme.**
  ○ **The ESI** is an integrated measure of **social Insurance** embodied in the **Employees' State Insurance Act, 1948.**
➢ **Coverage:**
  ○ **ESI Act applies** to all factories and notified establishments located in implemented areas **employing 10 or more persons** and is applicable on employees drawing wages up to **Rs 21,000 per month** (**Rs 25,000 for persons with disabilities**).
  ○ It covers about **3.49 crore of famil**y units of workers and provides cash benefits and medical facilities to **13.56 crore beneficiaries.**

Employees' Deposit-Linked Insurance

➢ It is an insurance cover provided by the EPFO **for private sector salaried employees**. It was **launched in 1976.**
  ○ **Any employee** who has an **EPF account** automatically becomes eligible for the **EDLI** scheme.
➢ The registered nominee receives a lump-sum payment in the event of the death of the person insured, during the period of the service.
  ○ It applies to **all organisations registered under the**

Employees Provident Fund and Miscellaneous Provisions Act, 1952.

➢ The **EDLI** scheme is managed on the basis of **0.5 %** of monthly wages **paid by the employer** to the fund and there is no employee contribution. The nominee registered by the employee is eligible to claim the benefit under the scheme.

Employees' Provident Fund Organisation

➢ It is a government organization that manages provident fund and pension accounts for the workforce engaged in the organized sector in India.
➢ **It implements** the **Employees' Provident Fund (EPF)** and **Miscellaneous Provisions Act, 1952.**
  ○ **The Employees' Provident Fund and Miscellaneous Provisions Act, 1952** provides for the institution of provident funds for employees in **factories and other establishments.**
➢ It is administered by the **Ministry of Labour & Employment**, Government of India.

Employees' Provident Funds Scheme

➢ **EPF** is the main scheme under the **Employees' Provident Funds and Miscellaneous Act, 1952.**
➢ It offers the institution of provident funds for factory employees and other establishments.
➢ The **employee and employer** each contribute **12% of the employee's** basic salary and dearness allowance **towards EPF.**
  ○ The **Economic Survey 2016-17** had suggested that employees be allowed to choose whether or not to save 12% of their salary into EPF or keep it as take home pay.
➢ As per **current laws**, a person mandatorily becomes a member of **EPF** if his monthly salary does not **exceed Rs. 15,000.**

World No Tobacco Day

Why in News

Every year, on **31st May**, the **World Health Organization (WHO)** and global partners celebrate **World No Tobacco Day (WNTD).**

Key Points

➢ **Focus of WNTD 2021:**

Note:

○ The **theme** for the World No Tobacco Day **2021** is **"Commit to Quit".**

○ The **WHO has honoured Indian Union health minister Harsh Vardhan** with **Director-General Special award** for his efforts to control tobacco consumption in India.

● His leadership was instrumental **in the 2019 national legislation** to ban **E-cigarettes & heated tobacco** products.

➢ **Socio Economic Burden of 'Tobacco':**

○ In India, **over 1.3 million deaths** are attributable to tobacco use every year amounting to 3500 deaths per day, imposing a lot of avoidable socio-economic burden.

○ **In addition to the death and diseases** it causes, tobacco **also impacts the economic development** of the country.

● **Smokers face a 40-50% higher risk** of developing **severe disease deaths from Covid-19.**

○ As per the **WHO study** (Published in August 2020) titled "**Economic Costs of Diseases and Deaths Attributable to Tobacco Use in India**",

● It has been estimated that the **economic burden of diseases and deaths attributable to use of tobacco** in India was **as high as Rs. 1.77 lakh crores**, amounting to **approx 1% of GDP.**

➢ **Measures towards Tobacco Control in India:**

○ **India adopted the** tobacco control provisions under **WHO Framework Convention on Tobacco Control (WHO FCTC).**

○ **Cigarettes and Other Tobacco Products Act (COTPA), 2003:**

● It **replaced the Cigarettes Act of 1975** (largely limited to statutory warnings- 'Cigarette Smoking is Injurious to Health' to be displayed on cigarette packs and advertisements. It **did not include non-cigarettes**).

● The **2003 Act also included** cigars, bidis, cheroots, pipe tobacco, hookah, chewing tobacco, pan masala, and gutka.

○ **Promulgation of the Prohibition of Electronic Cigarettes Ordinance, 2019:** Which **prohibits** Production, Manufacture, Import, Export, Transport, Sale, Distribution, Storage and Advertisement of **e-Cigarettes.**

○ **National Tobacco Quitline Services (NTQLS):** Tobacco Quitline Services have the potential to reach a large number of tobacco users with the sole objective to provide telephone-based information, advice, support, and referrals for tobacco cessation.

○ **mCessation Programme:** It is an initiative using mobile technology for tobacco cessation.

● India launched mCessation using text messages in 2016 as part of the government's **Digital India initiative**.

➢ **Decline in Tobacco Consumption:**

○ The prevalence of tobacco use has decreased by **six percentage points** from **34.6% in 2009-10** to **28.6% in 2016-17.**

○ Under the **National Health Policy 2017**, India has set **an ambitious target of reducing tobacco use by 30% by 2025.**

WHO Framework Convention on Tobacco Control

➢ Governments adopt and implement the tobacco control provisions of the **WHO Framework Convention on Tobacco Control (WHO FCTC).**

➢ It is the first international treaty negotiated under the **auspices of the WHO.**

➢ It was adopted by the **World Health Assembly** (apex decision making body of WHO) on **21st May 2003** and entered into force on **27th February 2005.**

➢ It was developed in **response to the globalization of the tobacco** epidemic and is an **evidence-based treaty** that reaffirms the right of all people to the highest standard of health.

➢ The **FCTC's** measures to combat tobacco use include:

○ **Price and tax** measures.

○ **Large, graphic warnings** on tobacco packages.

○ **100% smoke-free** public spaces.

○ **A ban** on tobacco marketing.

○ Support fo**r smokers** who want to quit.

○ Prevention **of tobacco industry** interference.

China Relaxes Two Child Policy: Lessons for India

Why in News

Recently, China r**elaxed its two child policy** and announced it will now **allow three children per married couple.**

Note:

➢ It also announced that it would **increase the retirement age** by a few months every year. For the past four decades, the **retirement age in China has been 60 for men and 55 for women.**

Key Points

➢ **China's Population Policies:**
  ❍ **One Child Policy:**
    ● China embarked upon its one-child policy in **1980,** when its **government was concerned that the country's growing population**, which at the time was approaching one billion, **would impede economic progress.**
      ▪ **Chinese authorities have long hailed the policy** as a success, claiming that **it helped the country avert severe food and water shortages** by preventing up to 40 crore people from being born.
    ● It was a **source of discontent,** as the state **used brutal tactics such as forced abortions and sterilisations.**
    ● It also met criticism and remained controversial for **violating human rights, and for being unfair to the poor**.
  ❍ **Two Child Policy:**
    ● From **2016**, the Chinese government finally **allowed two children per couple** – a policy change that **did little to arrest the rapid fall in population growth.**
  ❍ **Three Child Policy:**
    ● It was announced after **China's 2020 census** data showed that the country's **rate of population growth is falling rapidly despite the 2016 relaxation.**
    ● The country's **fertility rate has dropped to 1.3,** far below the **replacement level of 2.1** required for a generation to have enough children to replace it.
      ▪ The **United Nations** expects China's **population to begin declining after 2030**, but some experts say this could happen as early as in the next one or two years.
➢ **Concerns of Falling Population:**
  ❍ **Decreased Labour:**
    ● When the young population in a country declines, it creates **labour shortages, which have a major detrimental impact on the economy**.

  ❍ **Increased Social Spending:**
    ● More older people also means that **demands for healthcare and pensions** can soar, **burdening the country's social spending system** further when fewer people are working and contributing to it.
  ❍ **Critical for Developing Nations:**
    ● A problem unique to China, though, is that unlike the other developed countries part of this trend**, it is still a middle-income society, despite being the world's second-largest economy.**
    ● Prosperous countries like Japan and Germany, which face similar demographic challenges, can **depend on investments in factories, technology and foreign assets**.
    ● China, however, still **depends on labour-intensive manufacturing and farming**.
    ● A **drop in demographic dividend** could thus **hurt China and other developing nations like India** more than those in the rich world.
➢ **Lessons For India:**
  ❍ **Avoid Stringent Measures:**
    ● Stringent population control measures have landed China in a human crisis that was inevitable. **If coercive measures like a two-child limit are enforced, India's situation could be worse.**
  ❍ **Women Empowerment:**
    ● The proven ways to lower the fertility rate are to **give women the control over their fertility** and ensure their greater empowerment through **increased access to education, economic opportunities and healthcare**.
      ▪ As a matter of fact, **China's fertility reduction** is only partly attributable to coercive policies, and is **largely because of the sustained investments the country had made in education, health and job opportunities for women.**
  ❍ **Need to Stabilize Population:**
    ● India has done very well with its **family planning measures** and now it is at **replacement level fertility of 2.1,** which is desirable.
    ● It needs to **sustain population stabilisation** because in **some States** like Sikkim, Andhra Pradesh, Delhi, Kerala and Karnataka, the **total fertility rate is way below replacement level,** which means it can experience in 30-40 years what China is experiencing now.

Note:

India's Case

➤ **India's Population Growth:**

❍ India's population is estimated to be over **1.36 billion as of March 2021**, indicating an estimated **12.4% growth over the last decade**.

● That is **lower than the 17.7% between 2001 and 2011.**

❍ However, a 2019 **United Nations** report had projected **India to overtake China as the most populous country by 2027**.

● India is **expected to add nearly 273 million people between 2019 and 2050.**

➤ **Indian Measures for Population Control:**

❍ **Prime Minister's Appeal:** During his **Independence Day Speech** in **2019**, the Prime Minister appealed to the country that **population control was a form of patriotism.**

❍ **Mission Parivar Vikas:** The Government launched **Mission Parivar Vikas** in **2017** for substantially **increasing access to contraceptives and family planning services in 146 high fertility districts.**

❍ **Compensation Scheme for Sterilization Acceptors:** Under the scheme, the Ministry of Health and Family Welfare provides **compensation for loss of wages** to the beneficiary and also to the service provider (& team) for conducting sterilizations from the year **2014.**

❍ **National Family Planning Indemnity Scheme (NFPIS) :** This scheme was launched in the year **2005**. Under this scheme, **clients are insured in the eventualities of death,** complication and failure following sterilization.

Seniorcare Aging Growth Engine Initiative

Why in News

Recently, the **MInistry of Social Justice and Empowerment** virtually launched the **SAGE (Seniorcare Aging Growth Engine) initiative** and **SAGE portal** for **elderly persons**.

➤ An amount of **Rs. 100 crore** has been assigned for the **promotion of the silver economy.**

Key Points

Silver Economy

➤ Silver economy is the system of **production**, distribution and consumption **of goods and services aimed at using the purchasing potential of older and ageing people** and satisfying their consumption, living and health needs.

➤ The silver economy is **analyzed in the field of social gerontology** (study of aging) **not as an existing economic system but as an instrument of ageing policy** and the political idea of forming a potential, needs-oriented economic system for an aging population.

➤ Its **main element is gerontechnology** (Technology pertaining to aged people) as a new scientific, research and implementation paradigm.

➤ **About:**

❍ The **SAGE portal** will be **a "one-stop access" of elderly care products and services by credible start-ups.**

❍ It has been launched with a view to **help such persons who are interested in entrepreneurship in the field of providing services for elderly care.**

❍ The **SAGE project aims to identify**, evaluate, verify, aggregate, and deliver products, solutions and services directly to the stakeholders. The **Ministry will act as a facilitator,** enabling the elderly to access the products through identified start-ups.

➤ **Features:**

❍ **Start-ups can apply** for being a part of SAGE through a dedicated portal.

❍ The start-ups selected under SAGE will be those which will provide new innovative products and services to elderly persons in **various areas like health, travel, finance, legal, housing, food among others.**

❍ An allocation of **Rs. 25 crores** has been made for the SAGE project in the current financial year i.e **2021-22.**

➤ **Need for the Initiative:**

❍ The **share of elders**, as a percentage of the total population in the country, is expected **to increase from around 7.5% in 2001 to almost 12.5% by 2026**, and surpass **19.5% by 2050.**

➤ **Other Government Initiatives for Elderly People:**

❍ **Integrated Programme for Older Persons (IPOP):**

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
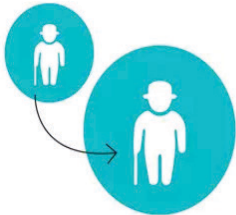
Elderly population in **India** (**134m** in 2020) is fast reaching the current size of population of **Mexico** (**130m**) or **Russia** (**143m**)

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

- The main objective of the scheme is to improve the quality of life of older persons by providing basic amenities like shelter, food, medical care and entertainment opportunities, etc.
- ○ **Rashtriya Vayoshri Yojana (RVY):**
  - This is a **central sector scheme** funded from the **Senior Citizens' Welfare Fund.** The fund was notified in the year 2016.
  - It aims to provide **aids and assistive living devices to senior citizens belonging to Below Poverty Line (BPL) category** who suffer from age-related disabilities such as low vision, hearing impairment, loss of teeth and locomotor disabilities.
- ○ **Pradhan Mantri Vaya Vandana Yojana (PMVVY):**
  - PMVVY was **launched in May 2017** to provide social security during old age.
  - It is a **pension scheme for senior citizens** that comes with guaranteed returns on monthly, quarterly, half-yearly or on an annual basis for a period of 10 years. It is **exclusively available to those who are 60 years of age and above.**
- ○ **Vayoshreshtha Samman:**
  - Conferred as a **National award**, and given to eminent senior citizens & institutions under various categories for their contributions on **International day of older persons on 1st October.**
- ○ **Maintenance and Welfare of Parents and Senior Citizens (MWPSC) Act, 2007:**
  - To ensure need-based maintenance for Parents and Senior Citizens and their welfare.

Women in Military

Why in News

Two women officers have been selected to undergo helicopter pilot training for the first time in the Army Aviation Corps. They will join **front-line flying duties** on completion of their training in July 2022.

➢ Till now, women officers were assigned **only ground duties** in the Army Aviation Corps.

Army Aviation Corps
➢ Raised in November 1986, it operates the **Dhruv advanced light helicopter, Chetaks, Cheetahs and Cheetal helicopters.**
➢ It carries out an **important role** in supporting the **army's deployment** in **high altitude areas**, including the **Siachen Glacier.**

Key Points

➢ **Deployment in the Armed Forces:**
  ○ The **Army, Air Force and Navy** began inducting women as **short-service commission (SSC)** officers in **1992**.
    - This was the **first time** when women were allowed to join the military outside the **medical stream.**
  ○ One of the **turning points for women in the military** came in **2015** when **Indian Air Force (IAF)** decided to **induct them into the fighter stream.**
  ○ In 2020, the **Supreme Court (SC) ordered the central government to grant permanent commission (PC) to women officers in the Army's non-combat support units** on par with their male counterparts.
    - The SC had rejected the government's stand of women officers' **physiological limitations** as being based on **"sex stereotypes" and "gender discrimination against women".**
    - Women officers have been **granted PC in the Indian Army in all the ten branches where women are inducted for SSC.**
    - Women are now eligible to occupy all the **command appointments**, at par with male officers, which would open avenues for further promotions to higher ranks for them.
  ○ In early 2021, the **Indian Navy** deployed **four women officers** on **warships** after a gap of almost 25 years.

Note:

drishti

- India's only aircraft carrier **INS Vikramaditya** and fleet tanker **INS Shakti** are the warships that have been assigned their first women crews since the late 1990s.
  - ○ In **May 2021**, the **Army** inducted the **first batch of women** into the **Corps of Military Police**, the first time that women joined the military in the non-officer cadre.
    - However, Women are still **not allowed in combat arms** like **Infantry and Armored Corps.**

➢ **Increment in Numbers:**
  - ○ It has increased almost **three-fold over the last six years**, with more avenues being opened to them at a steady pace.
  - ○ There are **9,118 women** currently serving the **army, navy and air force.**
  - ○ According to **2019 figures**, women comprise **only 3.8%** of the world's second-largest army - compared to **13% of the air force** and **6% of the navy.**

➢ **Significance:**
  - ○ **Gender is not a Hindrance:** As long as an applicant is qualified for a position, one's gender is arbitrary. In modern high technology battlefield technical expertise and decision-making skills are increasingly more valuable than simple brute strength.
  - ○ **Military Readiness:** Allowing a **mixed gender force** keeps the military strong. The armed forces are severely troubled by **falling retention and recruitment rates.** This can be addressed by allowing women in the combat role.
  - ○ **Effectiveness:** The blanket restriction for women **limits the ability of commanders** in theater to pick the most capable person for the job.
  - ○ **Tradition:** Training will be required to facilitate the integration of women into combat units. Cultures change over time and the masculine subculture can evolve too.
  - ○ **Global Scenario:** When **women officially became eligible for combat positions in the American military in 2013,** it was widely hailed as another step towards the equality of sexes. In 2018, the **UK** military lifted a ban on women serving in close combat ground roles, **clearing the way for them to serve in elite special forces.**

China-ASEAN Meeting

Why in News

Recently, China hosted a meeting of foreign ministers from the 10 **Association of Southeast Asian Nations (ASEAN)** countries.

➢ The meeting marks the **30th anniversary of China-ASEAN dialogue.**

➢ With this meeting China looks to **deepen its economic ties with the region** as well as **push back the renewed effort at regional engagement** from the US, as well as from the **QUAD (Quadrilateral Framework) grouping.**
  - ○ QUAD earlier this year came out with a **regional vaccine initiative.**

Key Points.

➢ **China's Stand:**
  - ○ **China's Cultural Diplomacy:**
    - Reiterated that **China and ASEAN should jointly carry forward Asian values** in a subtle dig at the West.
      - China in 2014 had put forward the idea that it was for "**Asian people to uphold Asia's security".**
  - ○ **Covid-Vaccines:**
    - China offered ASEAN countries its **vaccines** as well as closer cooperation on joint vaccine development and production.
  - ○ **Maritime Security & Disputes:**
    - China called for considering the **lifting of China-ASEAN ties to comprehensive strategic partnership** and strive for an early agreement on a **code of conduct in the South China Sea.**
    - China is **banking on deep economic links to both offset maritime disputes** and the push among some ASEAN countries for closer defence ties with the US amid their concerns about China's growing military footprint in the South China Sea.
  - ○ **Regional Comprehensive Economic Partnership:**
    - China pushed for the early implementation of the **Regional Comprehensive Economic Partnership (RCEP)**, which was signed by China, ASEAN countries, Japan, South Korea, Australia and New Zealand in November 2020.

Note:

- **India withdrew from the RCEP** largely because of concerns it would open it up to Chinese goods amid an already wide trade imbalance with China, and the failure of the agreement to adequately open up to services.

➢ **ASEAN's Importance for China:**

○ ASEAN plays a **key role in Chinese economic and strategic interests.**

○ The region straddles vital sea lanes of communication that **represent China's access to the global market,** including vital imports of Middle Eastern oil.

○ Economically entwined with China, the relatively small nations of the region also **offer ample opportunities for China to advance its influence** and weaken what Chinese strategists perceive as a US (**Presence of US**) engineered chain of encirclement around the Chinese mainland.

➢ **ASEAN and India:**

○ **Traditionally the basis of India-ASEAN ties has been trade and people-to-people ties** due to shared historical and cultural roots, a more recent and urgent area of convergence has been **balancing China's rise.**

  ● In 2020, **17th ASEAN-India Virtual Summit** was held.

  ● The **8th East Asia Summit Economic Ministers' Meeting** (EAS-EMM) was also held **in 2020.** It **comprises the ten member states of the ASEAN, along with 8 other countries** namely Australia, China, Japan, **India**, New Zealand, the Republic of Korea, Russia and the USA.

○ Both India and ASEAN aim to establish a **rules-based security architecture for peaceful development in the region**, in contrast to China's aggressive policies.

○ Like India, **several ASEAN members such as Vietnam, the Philippines, Malaysia, and Brunei have territorial disputes with China**, the China factor does form an important component of the relationship.

○ India in 2014 reinvigorated the **Look East policy into Act East**, with a more strategic outlook than its previous incarnation, **focusing on engagement not just with Southeast Asian countries but also those in the Pacific**.

  ● The main focus of the Act East policy is on **enhancing connectivity between India and South East Asia.**

Association of Southeast Asian Nations

➢ **About**:

○ It is a **regional grouping** that promotes economic, political, and security cooperation.

○ It was established in **August 1967 in Bangkok,** Thailand with the signing of the ASEAN Declaration (Bangkok Declaration) by the founding fathers of ASEAN, namely Indonesia, Malaysia, Philippines, Singapore and Thailand.

○ Its **chairmanship rotates annually**, based on the alphabetical order of the English names of Member States.

○ ASEAN countries have a **total population of 650 million people** and a combined Gross Domestic Product (GDP) of USD 2.8 trillion. It is **India's 4th largest trading partner with about USD 86.9 billion in trade.**

➢ **Members**:

○ Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

ASEAN GROUPING

Note:

Art & Culture

Highlights

● *Tulu Language*

Tulu Language

Why in News

The **Tulu speakers**, mainly in **Karnataka and Kerala**, have been **requesting the governments to give it official language status** and **include it in the eighth schedule to the Constitution.**

➢ In 2020, there was a demand to include Tulu in the new **National Education Policy** (NEP).

Official Language or Languages of a State

➢ **Part XVII of the Indian Constitution** deals with the official language in **Articles 343 to 351.**

➢ **Article 345** of the Constitution says "the Legislature of a State may by law adopt any one or more of the languages in use in the State or Hindi as the language or languages to be used for all or any of the official purposes of that State".

Eighth Schedule of the Constitution

➢ The **Constitutional provisions** relating to the Eighth Schedule **occur in Article 344 (1) and 351 of the Constitution.**

➢ The **languages listed under Eighth Schedule** are:

○ (1) Assamese, (2) Bengali, (3) Gujarati, (4) Hindi, (5) Kannada, (6) Kashmiri, (7) Konkani, (8) Malayalam, (9) Manipuri, (10) Marathi, (11) Nepali, (12) Oriya, (13) Punjabi, (14) Sanskrit, (15) Sindhi, (16) Tamil, (17) Telugu, (18) Urdu (19) Bodo, (20) Santhali, (21) Maithili and (22) Dogri.

➢ Languages are added through **Constitutional Amendments.**

Key Points

➢ **About 'Tulu' Language:**

○ Tulu is a **Dravidian language** spoken mainly in two coastal districts **Dakshina Kannada** and **Udupi of** **Karnataka** and **Kasaragod district of Kerala.**

● This region is informally known as **Tulu Nadu.** There has been a demand for separate statehood for Tulu Nadu.

○ As per the **2011 Census** report, there are 18,46,427 Tulu-speaking people in India.

○ The **oldest available inscriptions** in Tulu are from the period **between 14th to 15th century AD.**

○ Tulu was **introduced as a language in school by the Karnataka Government** a few years ago.

➢ **Tulu Art and Culture:**

○ Tulu has a rich oral literature tradition with folk-song forms like **paddana,** and traditional folk theatre **yakshagana.**

○ Tulu also has an active tradition of cinema with around **5 to 7 Tulu language** movies produced a year.

➢ **Case for Recognition:**

○ **Article 29 of the Constitution:** It deals with the "**Protection of interests of minorities**". It states that any section of the citizens residing in any part of India having a distinct language, script or culture of its own, shall have the right to conserve the same.

○ **Yuelu Proclamation:**

● The Yuelu Proclamation was **adopted at the first international conference on language resources protection** in Changsha, Central China's Hunan province **in 2018 by UNESCO (United Nations Educational, Scientific and Cultural Organization)**.

● It calls upon the international community, states, governments and non-governmental organizations, among others, to reach a consensus on the **protection and promotion of linguistic diversity** in the world.

➢ **Advantages of Recognition under Eighth Schedule:**

○ Recognition from the **Sahitya Akademi.**

Note:

- Sahitya Akademi is also called India's **National Academy of Letters**, which preserves and promotes literature contained in different Indian languages.
  ○ Translation of Tulu literary works into other languages.
  ○ Members of Parliament (MP) and Members of the Legislative Assembly (MLA) could speak Tulu in Parliament and State Assemblies, respectively.
  ○ Option to take competitive exams in Tulu including all-India competitive examinations like the Civil Services exam.
  ○ **Special funds** from the Central government.
  ○ Teaching of Tulu in primary and high school.

■■■

Note:

Security

Project 75 India

Why in News

The **Defence Acquisition Council (DAC)** has approved the issuance of a **Request For Proposal (RFP)** for the construction of **six conventional submarines** under **Project-75I (India).**

➢ **RFP** is a project announcement posted publicly by an organization indicating that bids for contractors to complete the project are sought.

Key Points

➢ **About the Project:**
  - ❍ This project envisages **indigenous construction of submarines equipped with the state-of-the-art Air Independent Propulsion system** at an estimated cost of **Rs. 43,000 crore.**
  - ❍ Project 75 (I)**, approved in 2007**, is **part of the Indian Navy's 30 year Plan for indigenous submarine construction.**
  - ❍ It will be the **first under the strategic partnership model** which was **promulgated in 2017 to boost indigenous defence manufacturing.**
    - ● The **strategic partnership model** allows domestic defence manufacturers to join hands with leading foreign defence majors to produce high-end military platforms to reduce import dependence.
    - ● Acquisitions under the Strategic Partnership model refer to **participation of private Indian firms along with foreign OEM (Original Equipment Manufacturer) in 'Make in India'** in defence.

➢ **Significance:**

❍ **One of the Largest 'Make in India' Projects:**
  - ● It will serve to facilitate faster and more significant absorption of technology and create a tiered industrial ecosystem for submarine construction in India.

❍ **To Ensure Self-Reliance:**
  - ● From a strategic perspective, this will help reduce current dependence on imports and gradually ensure greater self-reliance and dependability of supplies from indigenous sources.

❍ **To Protect Indo-Pacific:**
  - ● This is keeping in mind the rapid increase of nuclear submarine arsenal by People's Liberation Army Navy (PLAN)(CHINA) and to protect the Indo-Pacific from future domination by the adversary.

➢ **About 30-year Submarine Plan:**
  - ❍ The **Cabinet Committee on Security, in June 1999**, had approved a 30-year submarine-building plan which included **construction of 24 conventional submarines indigenously by 2030.**
  - ❍ **P75I succeeded the P75** under which six diesel-electric attack submarines of the Kalvari class, based on the Scorpene class, were being built at MDL (Mazagon Dock Limited) – the third submarine, INS Karanj, was commissioned in March 2021.
  - ❍ Of the total **24 submarines** to be built in India, **six** will be **nuclear-powered.**
  - ❍ India has **only one nuclear submarine**, **INS Arihant**, at the moment. The **INS Arighat,** also a nuclear-powered ballistic missile submarine, is to be commissioned soon.
  - ❍ **INS Chakra,** a nuclear submarine, which is taken on lease from Russia, is believed to be on its way back to the country of origin.

Defence Acquisition Council

➢ DAC is the **highest decision-making body in the Defence Ministry** for deciding on new policies and capital acquisitions for the three services (Army, Navy and Air Force) and the **Indian Coast Guard**.

➢ The **Minister of Defence is the Chairman** of the Council.

➢ It was formed, after the Group of Ministers recommendations on 'Reforming the National Security System', in 2001, post Kargil War (1999).

Positive Indigenisation List

Why in News

The **Ministry of Defence (MoD)** has notified the **second negative import list**, now renamed as the '**positive indigenisation list**' of 108 items.

➢ The **'First Negative Indigenisation'** List comprising 101 items was notified in August 2020.

Key Points

➢ **About the Second Positive Indigenisation List:**

  ○ **Procurement**: All the 108 items will now be procured from indigenous sources as per provisions given in **Defence Acquisition Procedure (DAP) 2020**.

  ○ **Timeline**: It is planned to be implemented progressively with effect from **December 2021 to December 2025**.

  ○ **Items Included**:

    ● It comprises complex systems, sensors, simulator, weapons and ammunitions like Helicopters, Next Generation Corvettes, Airborne Early Warning and Control (AEW&C) systems, Tank Engines, Medium Power Radar for Mountains, **MRSAM (Medium Range Surface to Air Missile) Weapon Systems** and many more such items to fulfil the requirements of Indian Armed Forces.

  ○ **Potential Benefits**:

    ● It will give a boost to indigenisation with **active participation of public and private sector** for fulfilling the twin objectives of achieving self-reliance (**Atmanirbhar Bharat**) and promoting defence exports.

    ● **Import substitution of ammunition** which is a recurring requirement has been given special focus.

● Not only does the list recognise the potential of the local defence industry, it will also invigorate impetus to **domestic Research & Development** by attracting fresh investment into technology and manufacturing capabilities.

● It also provides an **excellent opportunity for 'start-ups'**, as **Micro, Small, and Medium Enterprises (MSMEs)** will get a tremendous boost from this initiative.

➢ **Other Initiatives Taken to Boost Domestic Production of Defence Equipment:**

  ○ **Increased Capital Acquisition Budget (CAB) for DomesticSector:** The Ministry of Defence has decided to earmark around 64% of its modernisation funds under the capital acquisition budget for 2021-22, a sum of Rs 70,221 crore, for purchases from the domestic sector.

    ● For FY 2020-21, the capital budget allocation for domestic vendors was made at 58%, an amount of Rs. 52,000 crore.

  ○ **Defence Industrial Corridors:** India has inaugurated **two defence industrial corridors, one in Tamil Nadu and the other in Uttar Pradesh** to boost the flagship "Make in India" programme that in turn would attract investment as well as encourage employment generation.

    ● The Central government has **increased the Foreign Direct Investment (FDI) limit** in the defence sector **from 49 to 74% under automatic route** and **beyond 74% through the government route.**

  ○ **Corporatization of the Ordnance Factory Boards**: This was announced for better management, so that they can be listed on the stock market and people can buy their shares.

  ○ **Defence India Startup Challenge**: DISC aims at supporting Startups/MSMEs/Innovators to create prototypes and/or commercialize products/solutions in the area of National Defence and Security.

    ● It has been launched by the **Ministry of Defence** in partnership with **Atal Innovation Mission**.

  ○ **SRIJAN Portal:** It is a one stop shop online portal that provides access to the vendors to take up items for indigenization.

Defence Acquisition Procedure (DAP) 2020

➢ It **enables the notification of a List of Weapons or Platforms that will be banned for import.**

Note:

- ➢ It focuses on **Foreign Direct Investment (FDI) in defence manufacturing and indigenization of the manufacturing prices.**
- ➢ It also introduces several new ideas such as the **need to incorporate artificial intelligence in platforms and systems**, **use of indigenous softwar**e in defence equipment and **'innovation' by Start-ups and MSMEs as a new category of defence acquisition.**
- ➢ It includes following **procurement categories:** Buy (Indian – Indigenously Designed Developed and Manufactured), Buy (Indian), Buy and Make (Indian), Buy (Global - Manufacture in India) and Buy (Global).
  - ○ It **increases the Indigenous Content (IC) requirement** for all projects from 40% to 50% earlier, depending on the category, to 50% to 60%.
  - ○ Only under procurement through Buy (Global), foreign vendors can have 30% IC from Indian companies.

Category wise IC Requirement

Category	Vendors eligible to participate	Indigenous Content
Buy (IDDM)	Indian	Indigenous design and ≥ 50%
Buy (Indian)	Indian	In case of indigenous design ≥ 50%, otherwise≥ 60%
Buy and Make (Indian) (Buy portion may be nil)	Indian	≥ 50% of the 'Make' portion and transfer of critical technologies from the foreign vendors as per the specified range, depth and scope
Buy (Global – Manufacture in India)	Foreign and Indian	≥ 50%
Buy (Global)	Foreign and Indian	Foreign Vendor – Nil Indian Vendor ≥ 30%

Recent Reforms in Defence Sector

Why in News

Recently, the Defence Minister released an E-booklet titled **'20 Reforms in 2020'** highlighting the **major reforms undertaken by the Ministry of Defence (MoD) in 2020.**

Key Points

- ➢ **Chief of Defence Staff & Department of Military Affairs:**

- ○ The **appointment of India's first Chief of Defence Staff (CDS)** and creation of the **Department of Military Affairs** (DMA) were among the major decisions taken by the Government.
  - ● **General Bipin Rawat** was appointed as the **first CDS** who also fulfilled the responsibilities of Secretary, DMA.
- ○ The post of CDS was created **to increase efficiency & coordination among the Armed Forces and reduce duplication**, while DMA was established to ensure improved civil-military integration.
- ➢ **Self-Reliance in Defence:**
  - ○ To promote **'Make in India'** in the defence sector, a list of **101 defence items for which there would be an embargo on the import was notified in August 2020,** while **Defence Acquisition Procedure 2020 was unveiled in September 2020.**
  - ○ There was **a 10% budget increase in 2020-21** over the previous year.
- ➢ **Increased Defence Exports:**
  - ○ The increased partnership with the private sector has led to a substantial rise in defence exports.
  - ○ The value of total defence **exports rose from Rs 1,941 crore in 2014-15 to Rs 9,116 crore in 2019-20.** Also, **for the first time, India figured in the list of defence equipment exporting nations**, as the exports expanded to more than 84 countries.
- ➢ **Defence Acquisitions:**
  - ○ First five **Rafale fighter aircraft** arrived in India in July 2020 and several more since then, adding firepower to the arsenal of the Indian Air Force.
- ➢ **Reforming Defence R&D:**
  - ○ To promote innovation by young minds, five Young Scientists Laboratories of **Defence Research and Development Organisation (DRDO)** were launched in 2020.
  - ○ DRDO has joined hands with the private sector in design & development and identified 108 Systems & Subsystems for the industry to design, develop and manufacture.
- ➢ **Digital Transformation:**
  - ○ **Directorate General Quality Assurance (DGQA)** started online Pre-Delivery inspection in May 2020 to address security threats.

Note:

○ The **Armed Forces Tribunal** began digital hearing for the first time in August 2020.

➢ **Strengthening Border Infrastructure:**

○ Reforms of processes and workflows within **Border Roads Organisation (BRO)** enabled it to achieve targets ahead of schedule, in some instances.

○ World's longest **Atal tunnel** above 10,000 feet, at Rohtang on the Leh-Manali Highway was inaugurated.

➢ **Participation of Women in Armed Forces:**

○ Ten streams of Indian Army were opened for giving **Permanent Commission to Short Service Commission (SSC) Women officers**.

○ All **Sainik Schools** were thrown open for girl students from academic session 2020-21.

➢ **Reforms in National Cadet Corps:**

○ Expanding the reach of the **National Cadet Corps (NCC)** to remote locations was a major announcement.

○ It was decided to give preference to NCC cadets in employment in **Central Armed Police Forces** from May 2020.

➢ **Aid to Civil Administration during Covid-19:**

○ The Ministry of Defence and the Armed Forces have mobilised resources to aid the civil administration in the fight against **Covid-19**.

○ **DRDO** has set up several hospitals to treat Covid patients across the states, passed on technology expertise to the private sector for mass production of covid related medicines and equipment.

➢ **Help beyond Boundaries:**

○ The Armed Forces extended a helping hand to the countries in distress. Indian Navy mounted eight relief missions during 2020-21.

○ Besides **evacuating stranded Indians from Iran, Sri Lanka and Maldives** under **Vande Bharat Mission,** Indian Naval ships provided **Covid-19 medical relief** to five countries.

○ **INS Airavat** provided 270 MT food aid to Sudan, Djibouti and Eritrea struck by natural calamities.

○ The **Indian Coast Guard** led the rescue operation to save the Sri Lanka coast from its biggest oil spill.

Innovations for Defence Excellence

Why in News

Recently, the Defence Minister has approved the budgetary support of Rs. 498.8 crore to **Innovations for Defence Excellence (iDEX)** challenge under the **Defence Innovation Organisation (DIO)** for the next five years.

Key Points

➢ **About**:

○ The iDEX initiative was launched by the **Prime Minister in April 2018**.

○ It aims to achieve **self - reliance** and **foster innovation and technology development in Defence and Aerospace** by engaging Industries including Micro, Small and Medium Enterprises (**MSMEs**), start-ups, individual innovators, R&D institutes and academia.

○ iDEX is **funded and managed by the DIO**, and functions as the executive arm of DIO.

● DIO is a **'not for profit'** company registered under **Section 8 of the Companies Act 2013.**

● Its two founding members are **Hindustan Aeronautics Limited (HAL)** & **Bharat Electronics Limited (BEL)** - Defence Public Sector Undertakings (DPSUs). HAL and BEL are **navratna companies.**

○ It will provide the engaging industries with **funding and other support to carry out Research & Development.**

● Self-reliance in manufacturing of defence equipment is a crucial factor for **maintaining India's strategic autonomy.**

● India's arms imports fell 33% between 2011-15 and 2016-20, said a report released by the **Stockholm International Peace Research Institute (SIPRI).**

○ iDEX has partnered with leading incubators in the country to provide hand holding, technical support and guidance to the winners of iDEX challenges.

➢ **Other Related Initiatives:**

○ **Defence Industrial Corridors:**

● To support the growth of the Defence sector and enhance manufacturing capacity in the sector,

Note:

two **Defence Industrial Corridors are being set up in India, one in Uttar Pradesh** and another in **Tamil Nadu.**

○ **Strategic Partnership (SP) Model**:

● It identifies a few Indian private companies who would initially tie up with global **Original Equipment Manufacturers (OEMs)** to seek technology transfers to set up domestic manufacturing infrastructure and supply chains. It is a part of **Defence Acquisition Procedure (DAP) 2020**.

■ Under DAP 2020, the Ministry of Defence (MoD) has also notified a '**positive indigenisation list'** of 108 items.

○ **Artificial Intelligence in Defence:**

● **N Chandrasekaran Task Force** was set up in 2018 to study implications of AI in national security.

● **Defence Artificial Intelligence Project Agency (DAIPA)** was created in March, 2019.

● DAIPA aims for greater thrust on **Artificial Intelligence (AI)** in Defence, formulation of an AI roadmap for each Defence PSU and Ordnance Factory Board to develop AI-enable products.

■■■

Note:

Miscellaneous

Highlights

- *Global Liveability Index: EIU*
- *37th Anniversary of Operation Blue Star*
- *Operation Pangea XIV: Interpol*
- *Nano Urea Liquid: IFFCO*

- *Saral Jeevan Bima: IRDAI*
- *Padma Awards*
- *Heritage Trees*
- *Dagmara Hydro-Electric Project: Bihar*

Global Liveability Index: EIU

Why in News

Auckland (New Zealand) has **topped the Economist Intelligence Unit's (EIU) Global Liveability Index of 140 cities** around the world.

Key Points

➢ **About Global Liveability Index:**
  - The index takes into account more than **30 qualitative and quantitative factors** spanning **five broad categories: stability** (25%), **healthcare** (20%), **culture and environment** (25%), **education** (10%), and **infrastructure** (20%).
  - Due to the **pandemic**, the EIU added **new indicators** such as stress on health-care resources as well as restrictions around local sporting events, theatres, music concerts, restaurants and schools.
  - Each factor in a city is **rated as** acceptable, tolerable, uncomfortable, undesirable or intolerable.

➢ **General Scenario:**
  - Overall, the **Covid-19 pandemic caused liveability to decline** - as cities experienced lockdowns and significant strains on their healthcare system. This **led to an unprecedented level of change in the rankings**, with many of the cities that were previously ranked as the most liveable tumbling.
    - **Austria's Vienna**, **number one in both 2018 and 2019,** has completely **dropped out of the top 10** after being heavily affected by Covid-19, and now **ranks 12.**
  - **Auckland rose to the top** of the ranking **owing to its successful approach in containing the**

Covid-19 pandemic, which allowed its society to remain open and the city to score strongly on a number of metrics including education, culture and environment.

  - **Damascus remains the world's least liveable city**, as the effects of the civil war in Syria continue to take their toll.
  - Most of the previous ten least liveable cities **remain in the bottom ten this year,** including **Dhaka (Bangladesh) and Karachi (Pakistan)** in the Asia-Pacific (APAC) region.
  - However, there is a strong contingent of cities in the **APAC region at the top of the rankings**, with **Osaka, Adelaide, Tokyo and Wellington** rounding out the **top five.**
    - Apart from cities in New Zealand, Australia and Japan, other cities in the Asia-Pacific region such as **Taipei (Taiwan) (33rd)** and **Singapore** (34th) have also performed well.

➢ **Top 3 Liveable Cities:**
  - Auckland (New Zealand), Osaka (Japan), Adelaide (Australia).

➢ **Bottom 3 Liveable Cities:**
  - Damascus (Syria), Lagos (Nigeria), Port Moresby (Papua New Guinea).

37th Anniversary of Operation Blue Star

Why in News

Recently, the 37th anniversary of Operation Blue Star was observed by the country.

Key Points

➢ **Operation Blue Star:**

❍ It is a code name given to an **Indian Military Operation** to remove the separatists who were hidden inside the **Golden Temple** at Amritsar on **5th June 1984.**

❍ The operation was ordered by the then Prime Minister Indira Gandhi, primarily **to take control of the Harmandir Sahib Complex in Amritsar (popularly known as the Golden Temple).**

❍ The Indian military entered into the premises of the temple **to drive out the Sikh extremist religious leader, Jarnail Singh Bhindranwale** and his armed followers.

❍ The operation had **two components** to it, **Operation Metal** which was the invasion on the temple complex and **Operation Shop** which was confined to the countryside of the state.

❍ This Operation **helped in eliminating Khalistani terrorism.**

● It **resulted in the death of Bhindranwale.**

● Few months post-Operation Blue Star, **Indira Gandhi was assassinated by her Sikh bodyguards**, followed by severe **anti-Sikh riots in Delhi.**

➢ **Background**:

❍ **Jarnail Singh Bhindranwale wanted** the Indian government **to pass the Anandpur Resolution**, and thereby agree to the formation of **a separate state of Khalistan for Sikhs.**

❍ Since 1982, this radical leader of Sikhism had managed to gain enough support for his cause and **by mid-1983 had set up a base inside the Golden Temple complex, with ammunition and his followers.**

National Security Guard

➢ It is a **counter-terrorism unit** that formally came into existence in 1986 by an act of Parliament- **'National Security Guard Act, 1986'.**

❍ Its headquarters is located in **Manesar, Gurugram.**

➢ The idea behind raising such force came in the **aftermath of Operation Blue Star,** Akshardham Temple attack and the assassination of former PM Indira Gandhi, for combating terrorist activities with a view to protect states against internal disturbances.

❍ Hence, Operation Blue Star was launched between **1st June and 6th June 1984**, with the aim of getting rid of Bhindranwale and his demands.

Operation Pangea XIV: Interpol

Why in News

Recently, the **International Criminal Police Organization (Interpol)** through its **Operation Pangea XIV** targeted the **sale of fake medicines and products online**.

➢ More than **1.10 lakh web links, including websites and online marketplaces, were taken down** in the operation.

Key Points

➢ **About**:

❍ Operation Pangea, is a well-established **international effort of Interpol to disrupt the online sale of counterfeit and illicit health products**. Just as importantly, Pangea works to **raise awareness of the risks associated with buying medicines from unregulated websites.**

● The first Operation Pangea was **conducted in 2008**.

❍ The current operation (14th) involved the **police, customs and health regulatory authorities of 92 countries.** It was **coordinated by Interpol**. Indian agencies also participated in the operation.

● **Central Bureau of Investigation (CBI)** that is the nodal body for the Interpol in the country.

➢ **Significance:**

❍ The **online sale of illicit medicines continues to pose a threat to public safety**, which is why operations such a**s Pangea remain vital in combating this global health menace.**

❍ Criminals were continuing to cash in on the huge demand for personal protection and hygiene products due to the **Covid-19 pandemic**.

Nano Urea Liquid: IFFCO

Why in News

Recently, the **Indian Farmers Fertiliser Cooperative Limited (IFFCO)** introduced the **world's first Nano Urea Liquid** for farmers across the world.

Indian Farmers Fertiliser Cooperative Limited
➢ **About:**
  ❍ It is **one of India's biggest cooperative societies** which is w**holly owned by Indian Cooperatives.**
  ❍ **Founded in 1967** with just 57 cooperatives, today it is an amalgamation of over 36,000 Indian Cooperatives with **diversified business interests ranging from General Insurance to Rural Telecom** apart from its core business of manufacturing and selling fertilisers.
➢ **Objective:**
  ❍ To **enable Indian farmers to prosper through timely supply of reliable, high quality agricultural inputs and services** in an environmentally sustainable manner and to undertake other activities to improve their welfare.

Key Points

➢ **About**:
  ❍ It is a **nutrient** (liquid) **to provide nitrogen to plants** as an alternative to the conventional urea.
  ❍ It is **developed to replace conventional urea** and it can **curtail the requirement of the same by at least 50%**.
    ● It contains 40,000 mg/L of nitrogen in a 500 ml bottle which is **equivalent to the impact of nitrogen nutrient provided by one bag of conventional urea.**
  ❍ **Conventional urea is effective 30-40%** in delivering nitrogen to plants, while the effectiveness of the **Nano Urea Liquid is over 80%.**
    ● Its **effectiveness** has been tested in over **11,000 farmers' fields for 94 crops like rice and wheat.**
    ● An average **8% increase in yield** has been witnessed.
➢ **Developed At:**
  ❍ It has been **indigenously** developed at **Nano Biotechnology Research Centre, Kalol, Gujrat** in line with **Atmanirbhar Bharat** and **Atmanirbhar Krishi.**
    ● India is **dependent on imports** to meet its **urea requirements.**
➢ **Significance:**
  ❍ **Improves Plant Nutrition:**
    ● It has been found effective and efficient for plant nutrition which **increases the production with improved nutritional quality.**

  ● It will **boost a balanced nutrition program by reducing the excess use of Urea application** in the soil and will make the crops stronger, healthier and protect them from **lodging effect.**
    ■ **Lodging** is the bending over of the stems near ground level of grain crops, which makes them very difficult to harvest, and can **dramatically reduce yield.**
  ❍ **Improves Environment**:
    ● It will also have a **huge positive impact on the quality of underground water**, a very **significant reduction in global warming** with an **impact on climate change** and **sustainable development.**
  ❍ **Increase Farmers' Income:**
    ● It is easy on the pocket of farmers and will be effective in **increasing farmers' income.** It will also significantly **bring down the cost of logistics and warehousing.**

Saral Jeevan Bima: IRDAI

Why in News

Saral Jeevan Bima, **launched by IRDAI (Insurance Regulatory and Development Authority of India) in 2020**, has become a popular **term life insurance product** among masses.

➢ IRDAI is an **autonomous body** that was established **in 1999** to regulate and develop the insurance industry.

Term Life Insurance
➢ Term life insurance guarantees payment of a stated death benefit to the insured's beneficiaries if the insured person dies during a specified term.
➢ These policies have no value other than the guaranteed death benefit and feature no savings component as found in a whole life insurance product.
➢ Term life premiums are based on a person's age, health, and life expectancy.

Key Points

➢ IRDAI in October 2020 **had mandated all life insurers to launch the Saral Jeevan Bima plans** from 1st January 2021.
➢ Saral Jeevan Bima is **a regulator-mandated standard term life insurance plan** offering basic **protection to people who are self-employed or belong to a lower income category.**

Note:

➢ It is a pure term life insurance product that **can be purchased by people in the age group of 18 to 65 years** and will have **a policy term of 5 to 40 years.**

➢ The **sum assured** for the term life insurance policy ranges from **Rs 5 lakh** to **Rs 25 lakh** (in multiples of Rs 50,000).

  ❍ However, the insurer will have the **option of providing a sum assured beyond Rs 25 lakh.**

➢ It **provides for payment of sum assured in lump sum to the nominee** in case of the life assured's unfortunate death during the policy term.

➢ There are **no exclusions, other than suicides.**

Padma Awards

Why in News

Online nominations/recommendations for the **Padma Awards** to be announced on the occasion of **Republic Day**, 2022 are open.

➢ In **2021, a total of 119 Padma awards were conferred,** including **7 padma vibhushan, 10 padma bhushan and 102 padma shri.**

Padma Vibhushan   Padma Bhushan   Padma Shri

Key Points

➢ **Background**:

  ❍ The Padma Awards are announced **annually on Republic Day (26th January).**

  ❍ **Instituted in 1954**, it is one of the **highest civilian honours** of India.

➢ **Objective**:

  ❍ To **recognize achievements in all fields** of activities or disciplines where an **element of public service is involved.**

➢ **Categories**:

  ❍ The Awards are given in **three categories**:

  ● **Padma Vibhushan** (for exceptional and distinguished service),

  ● **Padma Bhushan** (distinguished service of higher-order) and

  ● **Padma Shri** (distinguished service).

  ❍ **Padma Vibhushan is highest in the hierarchy** of Padma Awards followed by Padma Bhushan and Padma Shri.

➢ **Disciplines**:

  ❍ The Awards are given in **various disciplines/ fields of activities**, viz.- art, social work, public affairs, science and engineering, trade and industry, medicine, literature and education, sports, civil service etc.

➢ **Eligibility:**

  ❍ **All persons without distinction of race, occupation, position or sex** are eligible for these Awards.

➢ **Selection Process:**

  ❍ **Padma Awards Committee:**

  ● The Awards are conferred on the recommendations made by the Padma Awards Committee, which is **constituted by the Prime Minister every year.**

  ❍ **Awarded by President:**

  ● The awards are **presented by the President** of India usually in the month of March/April every year.

> **Bharat Ratna**
> ➢ It is the **highest civilian award of the country.** It is **awarded in recognition of exceptional service/ performance** of the highest order in any field of human endeavour.
> ➢ It is treated on a different footing from Padma Award. The **recommendations for Bharat Ratna are made by the Prime Minister** to the President of India.
> ➢ The number of Bharat Ratna Awards is restricted to a **maximum of three in a particular year.**

Heritage Trees

Why in News

The Maharashtra Cabinet has passed an action plan to protect and preserve **trees older than 50 years in urban areas** by terming them heritage trees.

Key Points

➢ **Concept of Heritage Tree**:

  ❍ Few important criteria for considering a tree as a "heritage tree" are: size, shape, rarity, aesthetical/ historical values, association with historic person, place or even myths.

  ❍ A certain species **need not be native** to an area for this tag.

➢ **Components of Plan**:

  ❍ The provisions included in the plan are the concept of heritage trees and a plan of action for conservation, method to define the age of the tree, rules to be followed before hacking trees etc.

  ❍ **Compensatory Plantation**:

    ● It will include **planting the number of trees equivalent to the age** of trees to be cut.

    ● The saplings need to be **six to eight feet in height** while planting and they will undergo **geo-tagging** with **seven years of caring period**.

    ● The option of **monetary compensation** has also been given, instead of compensatory plantation.

  ❍ **State-level Tree Authority**: The authority will be formed to protect and preserve heritage trees.

    ● **Tree Census**: It will ensure that the tree census is conducted after **every five years.**

    ● **Land Use:** Ensuring that **33% of government land** is used for tree plantation.

Dagmara Hydro-Electric Project: Bihar

Why in News

Recently, a Memorandum of Understanding (MoU) has been signed between **National Hydro Power Corporation (NHPC)** Limited and Bihar State Hydroelectric Power Corporation Limited (BSHPC) for Implementation of **Dagmara Hydro-Electric Project**, Supaul, Bihar.

➢ NHPC is a **Category-A Miniratna Company** under the **Ministry of Power**, in the field of Hydropower.

  ❍ It is the **largest organisation for hydropower development in India,** currently, NHPC has 24 operational power stations with a **total installed capacity of 7071 Mega Watt (MW).**

Kosi River

➢ The Kosi is a **trans-boundary river** which flows through **Tibet, Nepal and India.**

➢ It has its **source in Tibet that includes the world's highest upland**; it then drains a large part of Nepal before emerging onto the Gangetic plains.

➢ Its three major tributaries, the **Sun Kosi, Arun and Tamur** meet at one point just upstream of a 10 km gorge cut through the Himalayan foothills.

➢ The river crosses into northern Bihar, India where it branches into distributaries before **joining the Ganges near Kursela in Katihar district.**

➢ Its **unstable nature has been attributed to course changes** and the heavy silt it carries during the monsoon season, and flooding in India has extreme effects.

  ❍ The Kosi **carries the maximum amount of silt and sand after the Brahmaputra in India.**

➢ It is also known as the **"Sorrow of Bihar"** as the annual floods affect about 21,000 km^2 of fertile agricultural lands thereby disturbing the rural economy.

Key Points

➢ **About**:

  ❍ The project is located **near village Dagmara on the right bank** and **Simri on the left bank**, about **22.5 km downstream of Bhimnagar barrage** on **Kosi river.**

  ❍ It is a **Run-of-the-River scheme**. **Run-of-river**

hydro projects use the **natural downward flow of rivers** and micro turbine generators to capture the kinetic energy carried by water.

- Typically **water is taken from the river at a high point and diverted to a channel, pipeline, or pressurised pipeline** (or penstock).

○ The project will have the **total capacity of generating 130 MW energy**, in which **17 units of 7.65 MW will be installed** for power generation.

○ The estimated **cost of construction of this project is at Rs. 2478.24 crore.**

➢ **Significance:**

○ It will be a landmark project in the power sector scenario of Bihar as far as green power is concerned.

○ Apart from **generating clean and green power**, the execution will **boost the socio-economic and infrastructure development in the area** and shall **also create employment opportunities.**

■■■

Note:

Key Points

Details

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Summary