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Polity and Governance

Highlights

- Scheme for Approval of Hygiene Rating Audit Agencies
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- Digital India Awards 2020
- India's First Fully Automated Metro

Scheme for Approval of Hygiene Rating Audit Agencies

Why in News

Recently, the **Quality Council of India (QCI)** has come out with a **scheme for approval of Hygiene Rating Audit Agencies (HRAA)**. This move is a part of the **Food Safety and Standards Authority of India's (FSSAI) Food Hygiene Rating Scheme**.

Key Points

- **Scheme for Approval of Hygiene Rating Audit Agencies:**
 - It will **scale up the hygiene rating** by increasing the number of recognised HRAA in the country.
 - The recognised HRAA will be **responsible for verifying the compliance with food hygiene and safety procedures laid by FSSAI** and get hygiene rating.

➤ Food Hygiene Rating Scheme:

- Initiated by the FSSAI, it is a **certification system for food businesses** supplying food directly to consumers, either on or off-premise.
- It **aims to allow consumers to make informed choices/decisions** pertaining to the food outlets where they eat by encouraging food businesses to improve their hygiene and safety standards.
- It is **applicable for foodservice establishments** (such as hotels, restaurants, cafeteria, dhabbas, etc), sweet shops, bakeries, meat retail stores, etc.

Quality Council of India

- Set up in **1997**, QCI is a pioneering experiment of the Government of India in **setting up organizations in partnership with the Indian industry**.
 - Indian industry is represented in QCI by three premier industry associations namely **Associated Chambers of Commerce and Industry of India (ASSOCHAM)**, **Confederation of Indian Industry (CII)** and **FICCI**.

Note:

- Its **mandate** is to **establish and operate the National Accreditation Structure (NAS)** for conformity assessment bodies and providing accreditation in the field of health, education and quality promotion.
- It also promotes the adoption of quality standards relating to Quality Management Systems, Food Safety Management Systems and Product Certification and Inspection Bodies through the accreditation services provided by **National Accreditation Board for Certification Bodies (NABCB)**.

North Eastern Region Power System Improvement Project

Why in News

The **Cabinet Committee on Economic Affairs** has approved the Revised Cost Estimate (RCE) of ₹6,700 crore for the **North Eastern Region Power System Improvement Project (NERPSIP)**.

- This is a major step towards **economic development of the North Eastern Region** through strengthening of Intra - State Transmission and Distribution systems.

Key Points

- **North Eastern Region Power System Improvement Project:**
 - **Background:**
 - The Scheme was initially approved in **December 2014** as a **Central Sector Scheme** of the Ministry of Power.
 - **Funded By:**
 - The **assistance of the World Bank** fund and by the Government of India through the Budget support of the Ministry of Power on **50:50** basis except for the **capacity building component for ₹89 crore, which will be entirely funded by the Government of India**.
 - **Implemented By:**
 - The scheme is being implemented through **Power Grid Corporation of India Limited (POWERGRID)** in association with six beneficiary North Eastern States namely, **Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura** and is targeted to be commissioned by December 2021.

- **POWERGRID** is a 'Maharatna' Company operating under Ministry of Power, it is engaged in power transmission business with the responsibility for **planning, implementation, operation and maintenance of Inter-State Transmission System (ISTS)**.

- **Maintenance:**

- After commissioning, the project will be owned and maintained by the respective **North Eastern State Utilities**.

- **Objective:**

- Government's **commitment for the total economic development** of the North Eastern Region and to **strengthen the Intra-State Transmission & Distribution Infrastructure** in the North East Region.

- **Significance:**

- Implementation of this scheme will **create a reliable power grid and improve NER States' connectivity to the upcoming load centers**, and thus **extend the benefits** of the grid connected power to all categories of consumers of beneficiaries in the NER.
- The scheme shall also **increase the per capita power consumption** of these States, and shall **contribute to the total economic development** of the NER.
- Hiring local manpower is **generating a lot of employment for skilled and unskilled manpower** of NER.

- **Other Initiatives for North Eastern States:**

- **North-East Industrial Development Scheme (NEIDS):**
 - In order to promote employment in the North East States, the Government is incentivizing primarily the MSME Sector through this scheme.
- **International Tourism Mart (ITM):**
 - It is organized annually with the **objective of showcasing the largely untapped tourism potential of the North East region** in the domestic and international markets.
 - 10% of the plan allocation of the Ministry of Tourism is marked for the NorthEast region.
 - There are also plans to hold an NER Tourism Mart where tour operators from all over the country can meet and the regional tourism can be showcased.

Note:

○ **National Bamboo Mission:**

- The Mission envisages promoting holistic growth of the bamboo sector by adopting the area-based, regionally differentiated strategy. It aims to increase the area under bamboo cultivation and marketing.

National Security Directive

Why in News

Recently, the **Cabinet Committee on Security** has approved the setting up of a **new National Security Directive** on the **telecommunication** sector.

- Also, the Union Cabinet has **approved the auction of 2,251.25 megahertz of spectrum** with a **reserve price of ₹3.92 lakh crore**.

Key Points

➤ **Background:**

- The Centre asked all **telecom operators to undertake an 'information security audit'** of their networks.
- The **objective** was to **specifically check for any 'backdoor' or 'trapdoor' vulnerabilities** in the telecom networks, which can be **exploited to extract information and pass on illegally** to agencies around the world.
 - A backdoor or a trap door is a **bug installed in the telecom hardware that allows companies to listen in or collect data** being shared on the network.
- Chinese vendors Huawei and ZTE have been **under global scrutiny for allegedly installing backdoor vulnerabilities and spying** for the Chinese government and have been **banned by several countries**.
 - Almost **30% of Bharti Airtel's network comprises Chinese telecom equipment** and it is **40% for Vodafone Idea's network**. **State-run telcos** Bharat Sanchar Nigam Limited (BSNL) and Mahanagar Telephone Nigam Limited (MTNL) too **have equipment from Chinese vendors**, including **Huawei and ZTE**, in their 3G and older networks.
- **All vendors** including Huawei and ZTE were **allowed to participate in 5G trials** but their **participation became difficult** owing to developments like the **Galwan Valley Standoff** in Ladakh.

- The **government barred BSNL and MTNL from using Chinese equipment** for the roll-out of its 4G network.
- The **Department of Telecommunications** hinted that it would **announce guidelines asking even private telcos to refrain from using Chinese equipment**, however, no such guidelines have been issued till now.

➤ **National Security Directive:**

- It aims to **classify telecom products and their sources** under the **'trusted' and 'non-trusted'** categories.
 - It will make its decision based on **approval of the National Security Committee on Telecom**.
 - It will be **headed by the deputy National Security Advisor (NSA)** and have members from other departments and ministries, and independent experts as well as two members from the industry.
 - The **National Cyber Security Coordinator** is the **designated authority** and will **devise the methodology** to designate trusted products.
 - From among the sources declared as trusted sources by the designated authority, those which **meet the criteria of the Department of Telecom's preferential market access policy** will be certified as **India trusted sources**.
 - The policy provides **opportunities to local manufacturers of equipment and handsets in the "sensitive" telecom sector to counter dumping of products** by other countries.
 - **Telecom Service Providers (TSPs)** are **required to connect new devices which are designated trusted products**.
 - However, the directive **will not ask TSPs to mandatorily replace the old and existing equipment** and does not impact the ongoing annual maintenance contracts or upgrades to old equipment either.
- **Significance:**
- Apart from the directive, the government will release at regular intervals new guidelines for **effective monitoring and effective control of the network security** of the TSPs.
 - The move could potentially make it **more difficult for Chinese telecom equipment vendors** to supply equipment to Indian telecom players.

Note:

- Mobile applications that either have Chinese origins or have central servers in China may also find re-entry in the market extremely difficult.
- Since June 2020, the Centre has banned over 200 Chinese apps, citing national security concerns.

Telecom Spectrum Auction

- Spectrum in the frequency bands of 700MHz, 800MHz, 900MHz, 1,800MHz, 2,100MHz, 2,300MHz and 2,500MHz would be offered for 20 years.
- The auction would help boost spectrum availability with telecom operators enabling improvements in 4G services.
- By winning the right to use spectrum through the auction, incumbent telecom service providers will be able to augment their network capacity, whereas new players will be able to start services.
- Spectrum holding per operator in a service area in India is well below the international average so any further auctioning of spectrum is needed.
- **Spectrum Auction:**
 - It is a transparent process of spectrum assignment to successful bidders.
 - Sufficient spectrum availability increases the quality of telecom services for the consumers.
 - It is relevant that the telecom sector today is a key infrastructure provider with strong linkages with economic growth, direct and indirect employment generation and expansion of Digital India.

No Replies to SC or HCs: Maharashtra

Why in News

Recently, both Houses of the Maharashtra State Legislature have passed proposals stating that they will not take cognizance of or reply to any notice sent by the High Court (HC) or the Supreme Court (SC) in the Breach of Privilege Motion against a TV editor and anchor.

Key Points

- **Background:**
 - A Breach of Privilege Motion was moved in the State Assembly against the TV anchor, accused of

using “derogatory language” and “making baseless remarks” against the Chief Minister of the State and “frequently insulting” Ministers and MPs during TV debates.

- The anchor filed a petition challenging the Breach of Privilege Motion in the SC.
- The assistant secretary of the Assembly questioned this move as well as producing “confidential” communications from the Speaker and the House Privileges Committee.
- The SC then issued a contempt notice to the assistant secretary of the Assembly and also held that it might be “necessary in all probability to serve the Speaker” to know his version in matter.

Privilege Motion

- It is concerned with the breach of parliamentary privileges by a minister.
- **Breach of Privileges:**
 - Parliamentary Privileges are certain rights and immunities enjoyed by members of Parliament, individually and collectively, so that they can “effectively discharge their functions”.
 - When any of these rights and immunities are disregarded, the offence is called a breach of privilege and is punishable under law of Parliament.
 - A notice is moved in the form of a motion by any member of either House against those being held guilty of breach of privilege.
- **Role of the Speaker/Chair:**
 - The Speaker/Chair is the first level of scrutiny of a privilege motion.
 - The Speaker/Chair can decide on the privilege motion himself or herself or refer it to the privileges committee of Parliament. If the Speaker/Chair gives consent under relevant rules, the member concerned is given an opportunity to make a short statement.
- **Rules Governing Privilege:**
 - Rule 222 in Chapter 20 of the Lok Sabha Rule Book and correspondingly Rule 187 in Chapter 16 of the Rajya Sabha Rule Book governs privilege.
 - Rules say that a member may, with the consent of the Speaker or the Chairperson, raise a question involving a breach of privilege either of a member or of the House or a committee thereof.

Note:

- **Current Scenario and State Assembly's Stand:**
 - The House Speaker **initiated the motion of the Treasury benches** and cited **Article 194 of the Constitution**, which lays down the powers and privileges of the Houses of Legislatures, and **Article 212**, which pertains to courts not inquiring into proceedings of the legislature.
 - The proposals held that **replying to such notices could mean accepting that the judiciary can keep a check on the legislature** and would be inconsistent with the **Basic Structure of the Constitution**.
 - The proposals were **passed unanimously**, which stated that the Speaker and Deputy Speaker would not respond to any notice or summons issued by the SC.
 - The **Legislative Council also passed the proposal unanimously** and stated that **no cognizance will be taken of any notice or summons issued by the HC or SC**.
- **Reactions:**
 - Politicians have noted that the **notice was in exception to the language used in the letter and has not encroached in any way on the rights of the legislature** to legislate. If the legislature passes such a motion, it will set a wrong precedent.
 - Parliamentary Affairs Minister has held that the **proposal was limited to upholding the esteem of the Speaker's chair and ensuring that the presiding authority is safeguarded from judicial scrutiny** in matters of legislation.

Human Development Index: UNDP

Why in News

India ranked **131** among 189 countries on the **Human Development Index (HDI) for 2019**, **slipping two places from the previous year**, according to the **Human Development Report (HDR) 2020** released by the **United Nations Development Program (UNDP)**.

- The 2020 Report has **introduced planetary pressures-adjusted Human Development Index**, which adjusts the standard Human Development Index (HDI) by a country's **per capita carbon dioxide emissions and material footprint**.

- The **other indices that form the part of the Report** are:
 - Inequality-adjusted Human Development Index (IHDI),
 - Gender Development Index (GDI),
 - Gender Inequality Index (GII) and
 - Multidimensional Poverty Index (MPI).

Key Points

- **Human Development Index:**
 - **About:** HDI **emphasizes** that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone.
 - **Based on three Basic Dimensions of Human Development:**
 - A long and healthy life,
 - Access to knowledge, and
 - A decent standard of living.
 - **Top Performers for 2019:**
 - Norway topped the index, followed by Ireland and Switzerland. Hong Kong and Iceland complete the top five.
 - **Performance of the Asian Region:**
 - Singapore was ranked 11, Saudi Arabia 40, and Malaysia was at 62 in the global index, representing the **top bracket among the Asian countries** with "**very high human development**".
 - Sri Lanka (72), Thailand (79), China (85) and Indonesia and Philippines (both 107), and Vietnam (117), among others, were "**high human development**" countries.
 - India, Bhutan, Bangladesh, Myanmar, Nepal, Cambodia, Kenya and Pakistan were ranked among countries with "**medium human development**" with ranks between 120 and 156.
 - **India's Performance:**
 - **Overall Performance:** HDI value for 2019 is **0.645**, which puts the country in the **medium human development category**, positioning it at **131 out of 189 countries** and territories.
 - Between 1990 and 2019, India's HDI value increased from 0.429 to 0.645, an increase of 50.3%.
 - **Long and Healthy Life:** Life expectancy for Indian's **at birth was 69.7 years in 2019**, slightly **lower than the south Asian average of 69.9 years**.

Note:

- Between 1990 and 2019, India's **life expectancy at birth increased by 11.8 years.**
 - **Access to Knowledge:** The **expected years of schooling** in India was **12.2 years**, compared with 11.2 years in Bangladesh and 8.3 years in Pakistan.
 - Between 1990 and 2019, **mean years of schooling increased by 3.5 years**, and **expected years of schooling increased by 4.5 years.**
 - **A Decent Standard of Living:** In terms of **Gross National Income (GNI) per capita**, India at **USD 6,681 fared better** than some others in 2019, despite a fall over the previous year.
 - India's GNI per capita **increased by about 273.9% between 1990 and 2019.**
- **Planetary pressures-adjusted Human Development Index (PHDI):**
- **About:** The PHDI adjusts the standard HDI by a country's level of carbon dioxide emissions and material footprint, each on a **per capita basis.**
 - **Performance of the Countries:**
 - **Norway, which tops the HDI, falls 15 places** if this metric is used, leaving **Ireland at the top** of the table.
 - The **United States (HDI Rank -17) and Canada (HDI Rank -16) would fall 45 and 40 places** respectively, **reflecting their disproportionate impact on natural resources.**
 - The **oil and gas-rich Gulf States also fell steeply. China would drop 16 places** from its current ranking of 85.
 - **India's Performance:**
 - India **would move up eight places** in the ranking.
 - Under the **Paris Agreement**, India pledged to reduce the emission intensity of its GDP from the 2005 level by 33-35% by 2030 and to obtain 40% of electric power capacity from non-fossil fuel sources by 2030.
 - **Solar capacity in India increased** from 2.6 gigawatts in March 2014 to 30 gigawatts in July 2019, achieving its target of 20 gigawatts four years ahead of schedule.

- In 2019, India **ranked fifth for installed solar capacity.**
- The **National Solar Mission** aims to promote solar energy for power generation and other uses to make solar energy competitive with fossil fuel-based options.

Other Indices

- **Inequality-adjusted Human Development Index:**
 - The IHDI indicates **percentage loss in HDI due to inequality.**
 - For **India**, IHDI value for 2019 is **0.537 (16.8% overall loss).**
- **Gender Development Index:**
 - GDI measures **disparities on the HDI by gender.**
 - For **India**, GDI value for 2019 is **0.820 (World: 0.943).**
- **Gender Inequality Index:**
 - GII presents a composite measure of gender inequality using **three dimensions:**
 - Reproductive health,
 - Empowerment and
 - The labour market.
 - In GII, India is **at 123rd rank**. Last year, it was ranked 122nd out of 162 countries.
- **Multidimensional Poverty Index:**
 - MPI captures the multiple deprivations that people in developing countries face in their health, education and standard of living.
 - The most recent survey data publicly available for India's MPI estimation refer to 2015-2016. In India, **27.9% of the population** (3,77,492 thousand people) are **multidimensionally poor**, while **an additional 19.3%** are classified under **vulnerable to multidimensional poverty** (2,60,596 thousand people).

Other Findings

- **Major Challenges:**
 - While the devastating effects of **Covid-19** have taken the world's attention, other layered crises, from **climate change to rising inequalities**, continue to take their toll. The challenges of **planetary and societal imbalance** are intertwined: they interact in a vicious circle, each making the other worse.

Note:

➤ Challenges Related to Children:

- **Indigenous children** in Cambodia, India and Thailand show **more malnutrition-related issues** such as stunting and wasting.
- In **India**, different responses in parent behaviour as well as some disinvestment in girls' health and education have led to **higher malnutrition among girls than among boys** as a consequence of shocks likely linked to climate change.

➤ Displacements in 2020:

- **Disasters continued to trigger most new displacements** in 2020. **Cyclone Amphan** hit Bangladesh and India, driving the largest single displacement event in the first half of the year, triggering 3.3 million pre-emptive evacuations.

➤ Solutions:

- **Expanding human development** - more education of women and girls, more economic empowerment of women, more bargaining power of young girls in households, reduced poverty, etc.
- Evidence from Colombia to India indicates that **financial security and ownership of land improve women's security** and reduce the risk of gender-based violence, clearly indicating that **owning land can empower women**.

Recommendations on Reservation

Why in News

Recently, an **eight-member committee**, appointed by the government for **suggesting measures for effective implementation of reservation in students admissions and faculty recruitment** in the **Indian Institutes of Technology (IITs)**, has come out with its recommendations.

Key Points

➤ About the Committee:

- It was **chaired by IIT Delhi's Director** and had representatives of secretaries of the departments of **Social Justice and Empowerment, Tribal Affairs, Department of Personnel and Training, Persons with Disabilities**, among others.
- Its report was **submitted to the Ministry of Education in June 2020** and has been made available under the **Right to Information (RTI) Act, 2005**.

➤ Recommendations:

- Being established and recognised as institutions of national importance, **IITs should be added to the list of "Institutions of Excellence"** mentioned in the **Schedule** to the **Central Educational Institutions (Reservation in Teachers' Cadre) Act, 2019** (CEI Act).
- **Section 4 of the Act** exempts "institutions of excellence, research institutions, institutions of national and strategic importance" mentioned in the Schedule and "minority institutions" from providing reservation.
- Currently, many research institutes like the **Tata Institute of Fundamental Research, National Brain Research Centre, Space Physics Laboratory**, etc. are included under Section 4 of the act, but not the IITs.

Central Educational Institutions (Reservation in Teachers' Cadre) Act, 2019

- It provides for the **reservation of posts in appointments by direct recruitment** of persons belonging to the Scheduled Castes (SCs), the Scheduled Tribes (STs), the Socially and Educationally Backward Classes (SEBCs) and the Economically Weaker Sections (EWSs), to **teachers' cadre in certain Central Educational Institutions** established, maintained or aided by the Central Government, and for matters connected therewith or incidental thereto.
- The **Act not to apply in certain cases**:
 - The institutions of excellence, research institutions, institutions of national and strategic importance specified in the Schedule to this Act.
 - A Minority Educational Institution.
- However the **Central Government may**, by notification in the Official Gazette, **amend the Schedule from time to time**.
 - If granting full exemption from reservations was not possible, the committee recommended that the implementation of reservation policies for all categories **including Economically Weaker Sections (EWS)** be **restricted just to Assistant Professor Grade I and Grade II** and not for levels above.
 - **Vacancies not filled in a particular year** due to non-availability, be **de-reserved in the subsequent year**.

Note:

- **Conduct of special recruitment drives** to attract candidates from reserved categories.
- To **address diversity issues**, the report argued that a “**system emphasising targeted goals over a period of time**” and not “**specific quotas**” be followed so that IITs can “**compete with other top institutions in the world in terms of excellence, output, research and teaching.**”
- The panel proposes a **two-year Research Assistantship for students from reserved categories aspiring to join PhD programmes.**
 - It highlighted that the **enrollment of reserved category students in the PhD programme is low and needs to be addressed**, which is severely limiting the number of reserved category candidates available to be hired as faculty in the IIT system.

SC Stays Andhra HC Order to Examine Constitutional Breakdown

Why in News

Recently, the **Supreme Court** (SC) has stayed in **Andhra Pradesh High Court** (HC) order intending to embark on a **judicial enquiry into whether there is a constitutional breakdown in the State machinery**, requiring a declaration of **President's rule** (Article 356).

- A three-judge bench headed by **Chief Justice of India S A Bobde** found the order **disturbing** and will take up the matter later on after vacations.

Key Points

- **Andhra Pradesh High Court's Move:**
 - While hearing a clutch of ***habeas corpus*** petitions in **October 2020**, it ***suo motu*** summoned the **State counsel** to assist it in deciding “whether in circumstances prevailing in the State, the **court can record a finding that there is constitutional breakdown or not**”.
 - **Habeas Corpus** is a **Latin term** which literally means “**to have the body of**”. Under this the court issues an order to a person who has detained another person, to produce the body of the latter before it.

- This **writ** is a **bulwark of individual liberty against arbitrary detention** and can be issued **against both public authorities as well as private individuals.**

President's Rule

- It implies the **suspension of a state government** and the **imposition of direct rule of the Centre**. It is also known as ‘**State Emergency**’ or ‘**Constitutional Emergency**’.
- The SC in ***Bommai case 1994*** enlisted the situations where the exercise of power under Article 356 could be used.
 - One such situation is that of ‘**Hung Assembly**’, i.e. where after general elections to the assembly, no party secures a majority.
- The President's rule is imposed through the invocation of **Article 356** of the Constitution **by the President on the advice of the Union Council of Ministers** (executive).
 - If the President, upon **receipt of the report from the Governor of the State** or otherwise, is satisfied that a situation has arisen in which the government of the State cannot be carried on in accordance with the provisions of the Constitution.
- **Parliamentary Approval and Duration:**
 - A proclamation imposing President's Rule **must be approved by both the Houses of Parliament within two months** from the date of its issue.
 - The approval **takes place through simple majority** in either House, that is, a majority of the members of the House present and voting.
 - **Initially valid for six months**, the President's Rule can be **extended for a maximum period of three years** with the approval of the Parliament, every six months.

State Government's Appeal:

- The HC **framed the question in an unprecedented manner** and **without any basis or pleadings** by any of the parties to that effect.
- It highlighted that **Article 356**, which deals with **failure of Constitutional machinery in a State**, is a **power exclusively vested in the executive and not the judiciary.**

Note:

- Under the Constitutional framework, it is **not for the Courts to decide** as to whether there is a Constitutional breakdown in a State as they **do not have any judicially discoverable and manageable standards to determine** so.
- The said fact is **essentially an executive function and is necessarily required to be based on a detailed factual analysis**.
- The HC order is a **serious encroachment on the powers of the executive** as enumerated under the Constitution and is **violative of the doctrine of separation of powers** and thus, **violative of the basic structure of the Constitution**.
 - Separation of powers is the **division of the legislative, executive, and judicial functions** of government.
 - Since the sanction of all three branches is required for the making, executing, and administering of laws, it **minimises the possibility of arbitrary excesses by the government**.
 - The constitutional demarcation **precludes the concentration of excessive power by any branch** of the government.

12th GRIHA Summit

Why in News

Recently, the inaugural session of the 12th **Green Rating for Integrated Habitat Assessment (GRIHA) Summit** was organised virtually.

Key Points

- **12th GRIHA Summit:**
 - **Theme:** Rejuvenating Resilient Habitats.
 - **Purpose:** To serve as a platform to **deliberate on innovative technologies and solutions** which shall help in creating robust mechanisms **for developing sustainable and resilient solutions for the benefit of the entire community**.
 - **Launch Event:** The Vice President of India launched the **SHASHWAT** magazine and the book **'30 Stories Beyond Buildings'** during the event.
- **Green Rating for Integrated Habitat Assessment (GRIHA):**
 - It is the national rating system of India for any completed building construction.

- **GRIHA** is recognised as India's own green building rating system in India's **Intended Nationally Determined Contributions (INDC)** submitted to the **United Nations Framework Convention on Climate Change (UNFCCC)**
- **Created By:** It was conceived by **The Energy and Resources Institute (TERI)** and developed jointly with the **Ministry of New and Renewable Energy**.

The Energy and Resources Institute

- **The Energy and Resources Institute (TERI)** is a non-profit research institute which conducts research work in the fields of energy, environment and sustainable development for India and the global south.
- It was established in 1974 as Tata Energy Research Institute and renamed to The Energy Resources Institute in 2003.

- **Objective:** To help design green buildings and, in turn, help evaluate the **'greenness'** of the buildings.
- **Mechanism:**
 - The system has been developed to help 'design and evaluate' new buildings (buildings that are still at the inception stages). A building is assessed based on its predicted performance over its entire life cycle.
- **Parameters used:**
 - Site selection and planning
 - Conservation and efficient utilization of resources
 - Building operation and maintenance
 - Innovation points
- **Benefits:**
 - This system, along with the activities and processes that lead up to it, benefits the community with the **improvement in the environment by reducing GHG (greenhouse gas) emissions, reducing energy consumption and the stress on natural resources**.
- **Other Related Initiatives:**
 - **Global Housing Technology Challenge (GHTC)**
 - **Organised by:** The Ministry of Housing and Urban Affairs.
 - **Launched:** January 2019
 - **Aim:** To identify and mainstream best available and proven construction technologies that are sustainable, green and disaster-resilient to enable a paradigm shift in housing construction.

Note:

- **Affordable Sustainable Housing Accelerators (ASHA)**
 - Under this initiative five Incubation Centers have been set up for identifying innovative materials, processes and technology for resource-efficient, resilient and sustainable construction.
- **Smart Cities Mission:**
 - It is an innovative initiative under **the Ministry of Housing and Urban Affairs**, Government of India to drive economic growth and improve the quality of life of people by enabling local development and harnessing technology as a means to create smart outcomes for citizens.
 - It is working towards integrated and comprehensive development of cities

Threats to Freedom of Press

Why in News

According to a report by the **Committee to Protect Journalists (CPJ)**, a record number of journalists were imprisoned during 2020.

- **The Committee to Protect Journalists** is an **independent, nonprofit** organization that **promotes press freedom worldwide**.
- It defends the right of journalists to report the news safely and without fear of reprisal.

Key Points

- **Highlights of the Report:**
 - The overall number of jailed journalists in 2020 is at **record high of 272**.
 - Turkey remains the world's worst offender against press freedom with at least **68 journalists imprisoned for anti-state charges**. At least **25 journalists** are in prison in **Egypt**.
 - There are **dozens of reporters missing or kidnapped** in the **Middle East and North Africa**, including several held by Houthi rebels in Yemen.
 - Amid the **Covid-19 pandemic**, authoritarian leaders tried to control reporting by arresting journalists.
- **Importance of Free Media:**
 - Free Media **promotes open discussion of ideas** that allows individuals to fully participate in

political life, making informed decisions and strengthening society as a result — especially in a large democracy such as India.

- A free exchange of ideas, free exchange of information and knowledge, debating and expression of different viewpoints is important for **smooth functioning of democracy**.
 - As the free media by virtue of being the voice of masses, empowers them with the right to express opinions. Thus, free media is critical in a democracy.
- With Free Media, **people will be able to exercise their rights as questioning decisions of government**. Such an environment can be created only when freedom of press is achieved.
- Hence, Media can be rightly considered as the **fourth pillar of democracy**, the other three being legislature, executive and judiciary.
- **Threats to Freedom of Press:**
 - The **hostility** towards the media which is **openly encouraged by political leaders** poses a great threat to democracy.
 - Government's pressure in the name of **regulations, bombardment of fake news and over influence of social media** is dangerous for the occupation. **Corruption-paid news, advertorials and fake news** are threats to free and unbiased media.
 - Security of journalists is the biggest issue, **killings and assaults on the Journalists covering sensitive issues are very common**.
 - **Hate speech targeting journalists** shared and amplified on social networks are targeted against journalists using social media.
 - **Corporate and political power has overwhelmed large sections of the media**, both print and visual, which lead to vested interests and destroy freedom.
- **Press Freedom in India:**
 - In 1950, the **Supreme Court** in **Romesh Thappar v. State of Madras** observed that **freedom of the press lay at the foundation of all democratic organisations**.
 - The Constitution, the supreme law of the land, guarantees freedom of speech and expression under **Article 19**, which deals with '**Protection of certain rights regarding freedom of speech, etc.**'

Note:

- Freedom of press is not expressly protected by Indian legal system but it is **impliedly protected under article 19(1) (a) of the constitution**, which states - "All citizens shall have the right to freedom of speech and expression".
- However, **Freedom of press is also not absolute**. A law could impose only those restrictions on the exercise of this right, **it faces certain restrictions under article 19(2)**, which is as follows-
 - Matters related to interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality or in relation to contempt of court, defamation or incitement to an offence.
- **Press Council of India (PCI):**
 - It is a regulatory body established under the **Press Council of India Act of 1978**.
 - It aims to **preserve the freedom of the press and maintain and improve the standards of newspapers and news agencies in India**.
- **International Initiative for Freedom of Press:**
 - The Paris based **Reporters Without Borders (RSF)** publishes annually a **World Press Freedom Index (WPFI)** purporting to evaluate the level of freedom available to the media in 180 countries, which makes the governments and authorities aware of their policies and regulations against and for freedom of press.
 - India has dropped to two places on the **World Press Freedom Index, 2020** to be ranked **142nd** out of 180 countries.
- It is an **initiative of the Ministry of Jal Shakti** and is **supported by the World Bank**.
- It has a **budget outlay of ₹3680 crore** to be spent over a **period of 8 years**.
- **Aim:**
 - To improve the extent, reliability and accessibility of water resources information.
 - To strengthen the capacity of targeted water resource management institutions in India.
 - To facilitate acquisition of reliable information efficiently which would pave the way for an effective water resource development and management.
- **Project Beneficiaries:**
 - Central and state implementing agencies responsible for surface and/or groundwater planning and management, including river basin organizations.
 - Users of the **Water Resources Information System (WRIS)** across various sectors and around the World.
- **Project Components:**
 - **Water Resource Monitoring System:** WRMS focuses on improving the extent, timeliness and reliability of water resources data.
 - Establishment of Hydromet Observation Networks.
 - Establishment of **Supervisory Control And Data Acquisition (SCADA)** Systems for Water Infrastructure.
 - Establishment of Hydro-Informatics Centers.
 - **Water Resources Information System:** WRIS supports strengthening of national and sub-national water information centers with web-enabled WRIS through standardization of databases and products from various data sources/departments.
 - Strengthening of WRIS.
 - Establishing state WRIS.
 - **Water Resources Operation and Planning System:** WROPS supports the development of interactive analytical tools and decision support platforms that would integrate database, models and scenario manager for hydrological flood forecasting, integrated reservoir operations and water resources accounting for improved operation, planning and management of both surface and groundwater.

Mid-term Review of National Hydrology Project

Why in News

Recently, the **Union Minister of Jal Shakti** has reviewed the progress made under the **National Hydrology Project (NHP)** in its mid-term.

Key Points

- **National Hydrology Project:**
 - It was started in **2016** as a **Central Sector Scheme** with **100% grant to implementing agencies** on **pan India basis**.

Note:

- Development of Analytical Tools and Decision Support Systems.
- Purpose Driven Studies.
- Piloting Innovative Knowledge Products.
- **Water Resources Institutions Capacity Enhancement:** WRICE aims to build capacity for knowledge-based water resources management.
 - Water Resource Knowledge Centres.
 - Professional Development.
 - Project Management.
 - Operational Support.

➤ **Mid-term Review:**

- The NHP has been termed as a **project of National importance** since it establishes a **nationwide 'Nodal' 'one point' platform for all states to collaborate and share data** pertaining to water resources.
- Significant progress has been made in the fields of WRMS, WRIS, WROPS and WRICE.
- Under the NHP, a nationwide repository of water resources data, **National Water Informatics Centre (NWIC)** has been established.
- NHP is focusing on establishment of **Real Time Data Acquisition System (RTDAS)** on pan India basis, which **would complement the manual data acquisition stations** and would lay a strong foundation for informed decision making for better water resources management.
- Through the NHP, the management of water resources shall **witness a sea change since it will adopt an integrated approach and make use of cutting edge technology.**
- **Concerns:**
 - Collecting data from scattered agencies posed a major bottleneck in effective water resource management and also a stumbling block in important policy level decision making.
 - The lackadaisical approach and lack of interest shown by previous Governments has resulted in unavailability of reliable historic data.
- **Suggestions:**
 - Authorities should be directed to share the valuable works carried out under NHP in public domain and encourage academia, universities/ research institutes globally to contribute towards this initiative.

- Simultaneously, there is a need to further improve the water resources dissemination platform India-WRIS to take care of the requirements and aspirations of various stakeholders like **Central Water Commission (CWC)**, **Central Ground Water Board (CGWB)**, **National Water Development Agency (NWDA)**, **National Institute of Hydrology (NIH)**, etc.

Strengthen Safeguards for Whistleblowers

Why in News

Recently, experts have highlighted the **need to strengthen safeguards for corporate whistleblowers** and **extend the requirement of a vigil mechanism** to large private companies in India.

Key Points

➤ **Background:**

- The **Delhi High Court (HC)** is currently hearing a writ petition, which has **challenged the constitutional validity of the existing provisions of the Companies Act 2013.**
- Current provisions **only require listed companies to have a vigil mechanism** to address whistleblower complaints.
 - These companies are those which accept public deposits and companies that have loans from banks or public financial institutions of over ₹50 crore.

➤ **Concerns Highlighted:**

- Absence of any specific guidelines on the functioning of a vigil mechanism has led to **companies not ensuring that whistleblower complaints are addressed in a timely manner.**
- Companies were **able to retaliate against employees raising whistleblower complaints** and even **terminated their employment** as any civil suit for such actions could be **too expensive and time-consuming.**
 - Parties filing civil suits are required to **first pay court fees, typically amounting to around 1% of damages claimed.**

➤ **Suggestions:**

- Private sector companies above a **certain threshold of turnover or employees should set up a vigil mechanism.**

Note:

- Large private sector companies, including subsidiaries of large multinational corporations, should be **regulated differently from small private sector companies** and should be required to have **vigil mechanisms**.
- The law should require a **permanent internal committee** and **specify directions** on the functioning of the committee.
 - For that, the government should consider **issuing guiding principles** on such as **internal reporting to and review by** the audit committee, **timelines for addressing grievances** and **consideration** by the board on nature and **number of open matters and outcomes** of resolved matters, etc.
 - However, regulating the functioning of vigil mechanisms **pose a risk of over-regulation and micro-management**.
- The mechanism should provide for “**adequate safeguards against victimisation** of persons who use such mechanisms and make **provision for direct access to the chairperson of the audit committee** in appropriate or exceptional cases.
- There was a need for a **deterrent against frivolous complaints**.

Whistleblowing

- According to the Companies Act, whistleblowing is an **action aimed at drawing the attention of stakeholders to instances of unethical practices** in an organization.
- A whistleblower can be anyone **who chooses to expose wrong practices and has evidence** to support the allegations.
- They can be **either from within or outside the organization**, such as current and former employees, shareholders, external auditors, and lawyers.
- In India, whistleblowers are protected by the **Whistleblowers Protection Act, 2014**.
 - It provides for the **protection of their identity and also has strict norms to prevent their victimization**.
- In **January 2020**, the **Securities and Exchange Board of India (SEBI)** came out with a **new mechanism to reward whistleblowers** and other informants for sharing information about insider trading cases.

Early Health Warning System

Why in News

The **Ministry of Earth Sciences (MoES)** is developing an unique **Early Health Warning System** which is expected to forecast the possibility of disease outbreaks in the country.

- The **India Meteorological Department (IMD)** is also involved in the development studies and the process.

Key Points

- **About:**
 - The model being developed is based on the **relationship between weather changes and incidence**.
 - There are certain diseases where **weather patterns play a crucial role**.
 - Such as **malaria**, for which **particular temperatures and rainfall patterns can approximately predict** whether an area is likely to have an outbreak with fairly reasonable accuracy

Early Health Warning System

- According to the **World Health Organisation (WHO)**, **early warning systems** are timely surveillance systems that collect information on epidemic-prone diseases in order to trigger prompt public health interventions.
- However, these systems **rarely apply statistical methods to detect changes** in trends, or sentinel events that would require intervention.
- In most cases they **rely on an in-depth review done by epidemiologists** of the data coming in, which is rarely done in a systematic way.
 - **Epidemiology** is the study of the distribution and determinants of health-related states and events in specified populations.
- **Significance:**
 - It is expected to **predict outbreaks of vector-borne diseases**, particularly **malaria** and **diarrhoea**. Subsequently, it is likely to **monitor non-communicable diseases (NCDs)** as well.
 - **Vectors** are organisms that **transmit pathogens and parasites** from one infected person (or animal) to another, causing serious diseases in

Note:

human populations. For example, **Chikungunya**, Malaria, **Dengue**, **Yellow fever**, **Lymphatic filariasis**, Chagas disease, etc.

- Vector-borne diseases have **direct links to weather patterns**.
- **NCDs are affected by weather conditions**. For example, **cardiovascular problems and respiratory diseases** are associated with **rising heat waves and environmental pollution**.
- Such a system, when deployed, would **give local authorities ample time to prepare**.

➤ Analysis and Studies:

- To verify the robustness of the advance warning system, a **detailed analysis was carried out of malaria and diarrhoea cases** in two districts of Maharashtra, **Pune and Nagpur**.
 - While both districts have incidences of both diseases, Nagpur reports a higher number of malaria cases while diarrhoea cases are higher in Pune.
- **Temporal and spatial variability in weather parameters**, for example, a **short-term increase in temperature and rainfall** as an effect of **El-Niño** can lead to **malaria epidemics**.
- A study by the **Intergovernmental Panel on Climate Change** (IPCC) noted that climate change may increase the risk of **diarrhoeal diseases**, which is of major concern in developing countries, with increasing **incidents of floods as well as drought**.
- **On Covid-19:**
 - Although there have been studies and analysis on weather patterns affecting the spread of **viral diseases**, researchers are **unable to establish a certain link between Covid-19 pandemic and the weather** as it is a far more complex disease.

Social Entrepreneurship

Why in News

Recently, the **Confederation of Indian Industry** (Southern Region) has announced a **competition on social entrepreneurship**.

- The competition is for existing early stage social enterprises and students with entrepreneurial ideas that are socially focused and with significant social impact.

- The **Confederation of Indian Industry (CII)** works to create and sustain an environment conducive to the development of India, partnering industry, Government and civil society, through advisory and consultative processes. It is a **non-government, not-for-profit**, industry-led and industry-managed organization.

Key Points

➤ Social Entrepreneurship (Meaning):

- It is a construct that **blends the idea of a commercial enterprise with the tenets of a charitable nonprofit organization**.
- It is about **creating business models** revolving around low-cost products and services to **resolve social inequities**.
- It helps to succeed in economic initiatives, and all the investment focuses on the social and environmental mission.
- Social entrepreneurs are **also called social innovators**. They are the agents of change and create significant change using innovative ideas. They identify the problems and build the difference by their plan.
- Social entrepreneurship is a growing trend alongside **socially responsible (SRI) and ESG (Environmental, Social and Governance) investing**.
- **Examples of social entrepreneurship** include educational programs, providing banking services in underserved areas and helping children orphaned by epidemic disease.

➤ Need in India:

- India needs numerous social entrepreneurs with innovative solutions to the **society's most pressing social problems** in the areas of **sanitation, education, water conservation, gender bias, primary health, female foeticide, carbon emissions** and other environmental problems. These problems are persistent in nature and need urgent resolutions.

➤ Examples in India:

- **Pravah and ComMutiny:** The two organizations that train the youth for leadership roles, Pravah and ComMutiny, have **won the Social Entrepreneur of the Year (SEOY) 2020 award** instituted by the Schwab Foundation and Jubilant Bhartia Foundation.

Note:

- Established in 1993, **Pravah** has been facilitating the **development of a generation of empathetic, sensitive youth change-makers in India** through psycho-social interventions, helping them build more inclusive identities and societies.

- ComMutiny** which was formed in 2008, works on the idea of making collectives out of organizations like Pravah.

- **Dr. Govindappa Venkataswamy's Aravind Eye Hospitals:** Its business model is highly social, yet sustainable. It runs on its own revenue. The founder's mission was to **eradicate blindness amongst the poor in India**, especially in rural India living with a minimum daily wage and who can't afford medical treatment.

➤ Challenges:

- **Business Plan:** The rigor of building and following a plan that is based on market realities and customer insight is critical; social entrepreneurs need support of lawyers, chartered accountants, senior entrepreneurs to help them develop a good business plan.
- **Limited to Specific Geographies:** Due to lack of funds or the founders' limited bandwidth.

➤ Suggestions:

- The **2013 Companies Act** in India which **mandates companies to donate 2% of their average net profits to CSR (Corporate Social Responsibility)** has catalyzed investment in social ventures but to truly achieve benefits of scale, it **needs to be done in a much more coordinated manner**.
 - A big service that a **venture philanthropy firm or an ecosystem player** can provide social entrepreneurs is **organizing the world of investors** – by the size of the cheque they write, by the areas they focus on, their specific preferences and then most importantly by facilitating introductions to them.
- An organization that has to scale effectively **needs to have a deep bench of talent at all levels**.
- Further, there is a need for **'impact-measurement'**.
 - All investors want to see outcomes but how does one measure them when cycle times of one's intervention is much longer.
 - It can be **objectively measured how many mid-day meals** are provided to children in their

school but it's **harder to determine the efficacy of a sports program instituted to build confidence amongst students**.

➤ Related Initiatives:

- The **Securities and Exchange Board of India's** initiative to create a **Social Stock Exchange (SSE)** will boost social and & environmental impact investing in India by creating a new platform to fund social-sector organizations, and establish a standardized framework for measuring and reporting social impact for both donors and investors.
- **Gramin Vikas Trust (GVT)** is a National Level Organization established in 1999 by Krishak Bharati Cooperative Limited (KRIBHCO) for bringing about a sustainable improvement in livelihood of the poor and marginalized communities, especially, the tribal population including women.
 - GVT sees social entrepreneurship as the process of bringing about social change on a major scale.

District Mineral Foundation Trust Funds

Why in News

Dhanbad (Jharkhand) Deputy Commissioner has ordered an audit and an impact assessment of utilisation of funds from the **District Mineral Foundation Trust (DMFT)** for the financial years 2017-2020.

Key Points

- **Statutory Provision:** As per the **Mine and Minerals Development Regulation (Amendment) Act, 2015**, in **every district affected by mining-related operations**, the **state government** shall, by notification, **establish a trust as a non-profit body** to be called the **District Mineral Foundation**.
- **DMFT Funds:** Mining companies contribute **10-30% on the royalty** amount that they pay to the government to DMF Trust in the district they are operating in.
- **Objective:** The idea behind the contribution is that local mining-affected communities, **mostly tribal and**

Note:

among the poorest in the country, also have the right to benefit from natural resources extracted from where they live.

- **Status:** DMFs have been set-up in 572 districts of the country, with a cumulative accrual of more than ₹40,000 crore so far as per Ministry of Mines (MoM) data.
- **Linked with PMKKKY:** The functioning of the DMF trusts and the fund use governed by states' DMF Rules incorporate the mandates of a central guideline, **Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)** that specifies high priority areas of investments.

Pradhan Mantri Khanij Kshetra Kalyan Yojana

- **Nodal Ministry:** PMKKKY is a scheme by the **Ministry of Mines** for the welfare of people & affected areas by using the funds accrued under District Mineral Foundation (DMF).
- **Objectives:**
 - To implement various developmental and welfare projects/programs in mining affected areas that complement the existing ongoing schemes/projects of State and Central Government.
 - To minimize/mitigate the adverse impacts, during and after mining, on the environment, health and socio-economics of people in mining districts.
 - To ensure long-term sustainable livelihoods for the affected people in mining areas.
- **Implementation:**
 - At least 60% the fund will be utilized for "High Priority Areas" like Drinking water supply, Environment preservation & pollution control measure, Health care, Education, etc.
 - Rest of the fund will be utilized for "Other Priority Areas", such as Physical infrastructure, Irrigation, Energy & watershed development and Measures for enhancing environmental quality.

Recognition of Prior Learning Programme

Why in News

The **Ministry of Skill Development and Entrepreneurship (MSDE)** is conducting a **Special**

Recognition of Prior Learning (RPL) programme for workers, with the **Department of Panchayati Raj (DoPR)**.

- The programme, implemented under **Skill Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP)** Programme of MSDE, has been rolled out in **Varanasi** and **Chandauli**, Uttar Pradesh (UP).

Key Points

- **RPL Programme:**
 - It aims to **promote decentralization and local governance for better planning and implementation** of skill development programmes.
 - It is being implemented by the **National Skill Development Corporation (NSDC)**.
 - It **recognizes the value of learning** acquired outside a formal setting and provides a **government certificate** for an individual's skills.
 - Candidates receive **exposure to concepts of digital and financial literacy and accidental insurance coverage for three years** at free of cost.
 - **No fee is charged** from a candidate for participating in the RPL programme and every **successfully certified candidate receives ₹500**.
 - This initiative is part of a larger programme on '**Skill Development Planning at the level of Gram Panchayat**' that focuses on introducing RPL in a structured manner in various gram panchayats across the country.
- **Significance:**
 - The inclusion of gram panchayats is **crucial for the success of District Skill Development Plans (DSDPs)** and will provide a huge **fillip to the Skill India Mission**.
 - RPL will **align the competencies of the pre-existing workforce** of the country to the standardized framework and will provide confidence, respect and recognition to the candidates.
 - Supporting formalization of the informal learning of youth will **supplement their efforts in finding sustainable livelihood opportunities** and **reduce inequalities** based on privileging certain forms of knowledge over others.
 - It will also **link them with work opportunities** emanating from the Gram panchayat's development work.

Note:

- Down-streaming the skill development planning to the gram panchayat level would **contribute to decentralization**.

Skill Acquisition and Knowledge Awareness for Livelihood Promotion

- It is an **outcome-oriented programme of MSDE** with a special focus on **decentralised planning and quality improvement**.
- It is a **Centrally Sponsored Scheme** which is collaborated with the **World Bank**.
- It aims to implement the mandate of the **National Skill Development Mission (NSDM)**.
- It contributes to the **development of rational and realistic state skill development plans**, leading to a well-grounded national plan for skill development.
- **Objectives:**
 - **Convergence:** Creating convergence among all skill training activities, both State-led and Government of India funded, at the state level.
 - **Quality:** Improving the quality of skill development programs through building a pool of quality trainers, developing model curriculum and content, and standardizing assessment and certification.
 - **Evaluation System:** Establishing a robust monitoring and evaluation system for skill training programs.
 - **Inclusiveness and Opportunity:** Providing access to skill training opportunities to the disadvantaged sections. Creating industry-led and demand-driven skill training capacity.

Why in News

Recently, the **Registrar General of India (RGI)** has written to all State coordinators to update the **census register**.

- A **census** is the procedure of **systematically enumerating, and acquiring and recording information** about the members of a given population.

Key Points

- **The Order:** RGI has written to all State coordinators to **update names of an area, locality, colony or a building in the "charge register"**.
- **Charge register:** The charge register shows the distribution of work among enumerators and marks the **House Listing Blocks (HLB)** to be visited by each official.

- **HLB is a primary unit** of collection of data.
- **Use of Charge Register:**
 - It is an important census document that will **help enumerators to collect details during the first phase of census house listing and housing census and National Population Register (NPR)**.
- **Implication:**
 - The census exercise was **suspended indefinitely** owing to the **Covid-19 pandemic**. The communication from RGI may be an indication that the **census exercise may take off in the near future**.

Registrar General of India

- The Census Organisation was set up on an **ad-hoc basis for each Census till the 1951 Census**.
- The Government of India, in **1949 established an organisation** in the Ministry of Home Affairs under **Registrar General and ex-Officio Census Commissioner, India** to develop systematic collection of statistics on the size of population, its growth, etc.
- Later, this office was also entrusted with the responsibility of implementation of **Registration of Births and Deaths Act, 1969** in the country.
- It **arranges, conducts and analyses the results of the demographic surveys** of India including **Census of India and Linguistic Survey of India**.
 - **Census of India:** It provides information on size, distribution and socio-economic, demographic and other characteristics of the country's population.
 - The decennial Census of India has been **conducted 15 times, as of 2011**.
 - While it has been **undertaken every 10 years**, beginning in 1872 under British Viceroy Lord Mayo, **the first complete census was taken in 1881**.
 - **Post-1949**, it has been **conducted by the Registrar General and Census Commissioner of India** under the Ministry of Home Affairs.
 - **Linguistic Survey of India:** The primary objective is to present an updated linguistic scenario.
 - It is conducted **along with the decennial Census exercise**.
 - It also provides necessary inputs to the social/ educational planners in respective States for their planning to attain the envisaged goals.

Note:

- First linguistic survey of India was published by **George Abraham Grierson in 1928**.

- The **position** of Registrar is usually **held by a civil servant** holding the rank of Joint Secretary.

National Population Register

- NPR is a register of **the usual residents of the country**. It is prepared at the local (village and sub-town), sub-district, district, state and national levels under provisions of the **Citizenship Act, 1955** and the **Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules, 2003**.
- It is **mandatory** for every **"usual resident of India"** to register in the NPR.
- The data for the NPR was **first collected in 2010** along with the house listing phase of Census 2011.
- In **2015**, this data was further updated by conducting a **door-to-door** survey.

Parliamentary Committee on Management of Covid-19

Why in News

Parliamentary Standing Committee on Home Affairs on the management of the **Covid-19 pandemic** in the country, has recently submitted its report.

Key Points

- **The Committee has made a detailed assessment of four aspects:**
 - Preparedness,
 - Augmentation of Health Infrastructure,
 - Social Impact, and
 - Economic Impact.
- **Preparedness:**
 - **Issues:**
 - Migrant labourers, factory workers, daily wage earners were the worst affected due to **lack of timely dissemination of the information** in the district areas about the arrangements being made for food, shelter and other facilities leading to their exodus.
 - **Solutions:**
 - Draw up a national plan and guidelines under **National Disaster Management Act 2005** and **Epidemic Diseases Act, 1897**.

- A **separate wing** shall be formed in the NDMA that will specialise in handling pandemics like Covid-19 and take a **leading role in building a partnership of government** with the public sector, corporates, **NGOs** and other stakeholders.

- An **effective functional institutional mechanism** is needed for coordination between the Centre, states, and Union Territories for quick response to such a crisis in future.

➤ Augmentation Health Infrastructure:

○ Issue:

- **Disproportionate** availability of **ICU beds** in private and public sector hospitals.
- Private hospitals are either **inaccessible** or not **affordable** for everyone.
 - **Overcharging by hospitals, denial of the cashless facility, variation in levying charges towards consumables** such as PPE kits, gloves, and masks, etc., or on other non-medical expenditure.

○ Solution:

- Comprehensive **Public health Act** at the **national level:**
 - To support the Government in keeping **checks and controls over the private hospitals**.
 - Keep a check on the **black marketing of medicines** and ensure product standardization.
 - **Regulatory oversight** on all hospitals working in the country to prevent refusal to accept insurance claims.
 - The target should be to make Covid-19 treatment cashless for all people that are having **insurance coverage**.

➤ Social Impact:

○ Issues:

- Ineffective implementation of the **Inter-State Migrant Workmen (Regulation of Employment and Conditions of Services) Act, 1979**.
- The task of **identifying the location and disbursing relief measures** to the migrant workers became **very difficult** as the Central Government did not have any data of the migrant workers and had to seek it from the States.

Note:

○ Solutions:

- A **national database on migrant workers** be launched at the earliest helping in identification as well as delivering rations and other benefits.
- The database may also include **“records of returning migrant labourers including details about their source and destination, earlier employment details and the nature of their skills.”**
 - This would **“help in skill development and planning for the transit of migrant workers”** in a similar emergency in the future.
- It recommended that until the **One Nation, One Ration Card** is implemented in all states/UTs, inter-state operability of ration cards should be allowed.
- **Continuation of Mid-Day Meal Scheme.**
 - Ensure that the local administrations are delivering the **rations/ allowances in time** and this should be continued **until the schools reopen.**

Parliamentary Committees

➤ Broadly, parliamentary committees are of two kinds: **Standing Committees** and **Ad Hoc Committees**.

- **Standing Committees : Permanent** (constituted every year or periodically) and work on a **continuous basis**. They can be categorized into following broad groups:
 - Financial Committees
 - Departmental Standing Committees (24)
 - Committees to Inquire
 - Committees to Scrutinise and Control
 - Committees Relating to the Day-to-Day Business of the House
 - House-Keeping Committees or Service Committees
- **Ad Hoc Committees:** Ad hoc committees are temporary and cease to exist on completion of the task assigned to them.

➤ Economic Impact:

○ Issues:

- Poor Implementation of Government Schemes.
- Delay in Loan Disbursal.
- Consumption had been severely curtailed due to huge job losses and fall in income due to the lockdown.

○ Solutions:

- More interventions and schemes required to support the **recovery and to sustain this economic revival** especially for the **MSME** (Micro, Small and Medium Enterprises).

Parliament Sessions

Why in News

Recently, the government has decided to **cancel the Winter session of Parliament**, citing fears over a surge in cases due to **Covid-19 pandemic**.

Key Points

➤ Sessions of Parliament:

- The summoning of Parliament is specified in **Article 85 of the Constitution**.
- The power to **convene a session of Parliament** rests with the Government. The decision is taken by the **Cabinet Committee on Parliamentary Affairs** which is **formalised by the President**, in whose name MPs are summoned to meet for a session.
- India does not have a **fixed parliamentary calendar**. **By convention (i.e. not provided by the Constitution)**, Parliament meets for **three sessions** in a year.
 - The longest, Budget Session (1st session), starts towards the **end of January, and concludes by the end of April or first week of May**. The session has a **recess** so that Parliamentary Committees can discuss the **budgetary proposals**.
 - The second session is the **three-week Monsoon Session**, which usually begins in **July and finishes in August**.
 - Winter Session (3rd session), is held from **November to December**.

➤ Summoning of Parliament:

- It is the process of **calling all members of the Parliament** to meet. The **President** summons each House of the Parliament from time to time. The gap between two sessions of the Parliament cannot **exceed 6 months**, which means the Parliament meets at least **two times in one year**.

Note:

➤ **Adjournment:**

- It **terminates the sitting of the House** which meets again at the time appointed for the next sitting. The postponement may be for a specified time such as hours, days or weeks. If the meeting is terminated without **any definite time/date fixed for the next meeting**, it is called **Adjournment sine die**.

➤ **Prorogation:**

- It is the end of a session. The time between the **prorogation and reassembly is called Recess**. Prorogation is the end of the session and **not the dissolution of the house** (in case of Lok Sabha, as Rajya Sabha does not dissolve).

➤ **Quorum:**

- It refers to the **minimum number of the members** required to be present for conducting a meeting of the house. The Constitution has fixed **one-tenth strength as a quorum for both Lok Sabha and Rajya Sabha**. Thus, to conduct a sitting of Lok Sabha, there should be at least **55 members present** while to conduct a sitting of Rajya Sabha, there should be at least **25 members present**.

Green National Highways Corridor Project

Why in News

The **government and the World Bank** has signed a \$500 million project for implementation of the **Green National Highways Corridor Project**.

Key Points

➤ **Green National Highways Corridor Project:**

- The **Ministry of Road Transport and Highways (MoRTH)** had launched a **National Green Highways Mission (NGHM)** following the promulgation of 'Green Highways Policy' in September 2015.
- The **Green National Highways Corridor Projects (GNHCP)** supports the **implementation of the NGHM** and the provision of **green and safe transport**.
- The **objective** of the Project is to demonstrate **safe and green National Highway corridors** in

selected States and enhance the institutional capacity of the MoRTH in mainstreaming safety and green technologies.

➤ **Three Components of the Project:**○ **Green Highway Corridor Improvement and Maintenance:**

- This includes upgradation and maintenance for **five years** of about **783 km of selected existing National Highways** in the states of **Rajasthan, Himachal Pradesh, Uttar Pradesh and Andhra Pradesh**.

○ **Institutional Capacity Enhancement:**

- It will support the capacity enhancement of MoRTH in its pursuit to **conserve natural resources and improve climate vulnerability** of the National Highways network and **reduce Greenhouse Gas (GHG) emissions**.

○ **Road Safety:**

- It will provide support to **improve road safety data analytics** and **highway safety monitoring** and implementation.

➤ **About the Pact between the Government and the World Bank:**

- The USD 500 million loan from the **International Bank for Reconstruction and Development (IBRD)**, an arm of the World Bank, has a **maturity of 18.5 years** including a five-year grace period.

➤ **Significance of the Project:**

- The **National Highways of India** carry about **40% of road traffic**. However, several sections of these highways have **inadequate capacity, weak drainage structures and black spots prone to accidents**.
- The ultimate objective of transport infrastructure is to **provide seamless connectivity and reduce logistics costs**.
- Historically, the transport sector in India has offered limited employment opportunities for women. The project will **support the ministry with an in-depth analysis of gender-related issues in the transport sector** along with help in creating jobs for women by training women-led micro enterprises and women collectives to implement green technologies in the highway corridors.
- It will also support the **Bharatmala Pariyojana Program (BPP)**.

Note:

Key Features of Green Highways Policy 2015

- Promote greening and development of eco-friendly National Highway corridors across the country with participation of farmers, private sector and government institutions including the Forest Department.
- It addresses the issues that lie in the road of development and shows the way towards **sustainable development**.
 - Planting of trees in any particular area will depend on the soil suitability and climatic conditions.
- Its objective is to **reduce the impact of air pollution and dust** by planting trees and shrubs along the National Highways. They will act as natural sinks for air pollutants and **arrest soil erosion** at the embankment slopes.

World Bank

- **History:** Founded at the **Bretton Woods conference in 1944**, the International Bank for Reconstruction and Development—soon called the World Bank—has expanded to a closely associated group of **five development institutions**.
- **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.
 - The **International Finance Corporation (IFC)** provides investment, advice, and asset management services to companies and governments.
 - The **Multilateral Investment Guarantee Agency (MIGA)** insures lenders and investors against political risk such as war.
 - The **International Centre for the Settlement of Investment Disputes (ICSID)** settles investment-disputes between investors and countries.
 - India is not a member of ICSID.
- Recently, the World Bank has released **new Purchasing Power Parities (PPPs)** for reference year 2017, under **International Comparison Program (ICP)** that adjusts for differences in the cost of living across economies of the world.

- It has also developed the **Logistics Performance Index**.
- **Reports Published by World Bank:**
 - **Human Capital Index Report**
 - **Global Economic Prospects**
 - **Ease of Doing Business**
 - **South Asia Economic Focus Report**
 - **Poverty and Shared Prosperity Report**
 - World Development Report
- **Projects Supported by the World Bank:**
 - National Hydrology Project
 - Strengthening Teaching-Learning and Results for States (STARS) Project
 - National Nutrition Mission
 - National Mission for Clean Ganga
 - National Biopharma Mission
 - Atal Bhujal Yojana

Electoral Bonds and Right to Information

Why in News

The **Central Information Commission (CIC)**, the lead body for implementing the **Right to Information Act 2005**, has ruled that the **disclosure of identity of electoral bond scheme donors** will not serve any larger public interest and will **violate provisions of the Act itself**.

- The **electoral bond scheme** allows citizens and corporates to buy monetary instruments from the State Bank of India (SBI) and donate them to political parties, who can redeem them for money.
- According to the Association for Democratic Reforms, political parties have received a total of 12,452 **electoral bonds worth ₹6210.39 crore** till January 2020.

Key Points

- The Commission observed that the **disclosure** of names of donors and the donees may be **in contravention** of provisions contained in **section 8(1)(e)(j) of the RTI Act**.
 - The said section **exempts a public authority to give a citizen information available to a person in his fiduciary relationship**, unless the competent

Note:

authority is satisfied that the larger public interest warrants the disclosure of such information.

- A fiduciary is a person who holds a **legal or ethical relationship of trust** with one or more other parties (person or group of persons).
- The information related to electoral bonds issued to political parties is held by SBI in a fiduciary capacity.

➤ **Earlier** in January 2020, CIC had **directed the Centre to reveal the names of electoral bond scheme donors** who wanted their identities to remain confidential.

➤ **Concerns:**

○ **Anonymity:**

- Neither the donor nor the political party is obligated to reveal whom the donation comes from.
 - In 2019, the **Supreme Court** held that all political parties who had received donations through electoral bonds must submit details to the Election Commission of India.
- This undercuts a fundamental constitutional principle, the **freedom of political information**, which is an integral element of **Article 19(1) (a) of the Constitution**.

○ **Black Money:**

- **Elimination of a cap of 7.5% on corporate donations**, elimination of requirement to reveal political contributions in profit and loss statements and also the elimination of the provision that a corporation must be three years in existence, **undercuts the intent of the scheme**.
 - Any **troubled, dying company** can donate an unlimited amount anonymously to a political party giving them a convenient channel for business to round-trip their cash parked in tax havens for a favour or advantage granted in return for something.

○ **Defeating Transparency:**

- It defeats the fundamental principle of transparency in political finance because it **conceals from public scrutiny the identity of the corporates and moneybags**.

○ **Asymmetric Opacity:**

- The **government is always in a position to know who the donor is** because the bonds are purchased through the SBI.

- This asymmetry of information **threatens to colour the process in favour of whichever political party is ruling** at the time.

Central Information Commission

➤ **Formation:**

- It was established by the Central Government in 2005, under the provisions of the Right to Information Act (2005). It is **not a constitutional body**.

➤ **Composition:**

- It shall consist of the **Chief Information Commissioner (CIC)** and such number of **Central Information Commissioners not exceeding 10** as may be deemed necessary.

➤ **Appointment:**

- They are appointed by the **President** on the recommendation of a committee consisting of the **Prime Minister as Chairperson**, the **Leader of Opposition** in the Lok Sabha and a **Union Cabinet Minister** nominated by the Prime Minister.

➤ **Tenure:**

- The Chief Information Commissioner and an Information Commissioner shall hold office for **such a term as prescribed by the Central Government or until they attain the age of 65 years**, whichever is earlier.
- They are **not eligible for reappointment**.

➤ **Power and Functions of CIC:**

- It is the duty of the Commission to **receive and inquire into a complaint** from any person regarding information request under RTI, 2005.
- The Commission can order an inquiry into any matter if there are reasonable grounds (**suo-moto power**).
- While inquiring, the Commission has the powers of a **civil court** in respect of **summoning, requiring documents** etc.

Electoral Bond

- Electoral Bond is a financial instrument for making donations to **political parties**.
- The bonds are **issued in multiples of ₹1,000, ₹10,000, ₹1 lakh, ₹10 lakh and ₹1 crore without any maximum limit**.
- **State Bank of India** is authorised to issue and encash these bonds, which are **valid for fifteen days from the date of issuance**.

Note:

- These bonds are **redeemable in the designated account of a registered political party**.
- The bonds are available for purchase by **any person (who is a citizen of India or incorporated or established in India)** for a period of ten days each in the months of January, April, July and October as may be specified by the Central Government.
 - A person being an individual can buy bonds, either **singly or jointly** with other individuals.
 - Donor's name is **not mentioned** on the bond.

Changes in PMS-SC

Why in News

Recently, the **Cabinet Committee on Economic Affairs** (CCEA) has approved changes in the **Post Matric Scholarship to students belonging to Scheduled Castes** (PMS-SC).

- Government is committed to give a big push and further impetus to this effort so that the **Gross Enrolment Ratio (GER) in higher education of SCs would reach up** to the national standards **within the 5 year period**.
 - 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 current GER in higher education is **26.3%**.
- The Central Assistance which was around **₹1100 crore annually during 2017-18 to 2019-20** would be **increased more than 5 times** to be around **₹6000 crore annually during 2020-21 to 2025-26**.

Key Points

- **Post Matric Scholarship for Scheduled Castes:**
 - It is a **Centrally Sponsored Scheme** and implemented through State Government and UT administration.
 - It provides **financial assistance to the SC students studying at post matriculation or post-secondary stage** to enable them to complete their education.
 - These scholarships are **available for studies in India only** and are awarded by the government of the State/Union Territory to which the applicant actually belongs i.e. **permanently settled**.

- The **focus** of the scheme is on enrolling the poorest students, timely payments, comprehensive accountability, continuous monitoring and total transparency.
- **Income Ceiling:** Scholarships are paid to the students whose parents/guardians' income from all sources **does not exceed ₹2,50,000 per annum**.
- **New Changes:**
 - Enrolment Campaign:
 - Launching a campaign to **enrol the students from the poorest households passing the 10th standard**, in the higher education courses of their choice.
 - It is estimated that **1.36 crore poorest students are currently not continuing their education beyond 10th standard**, who would be brought into the higher education system in the next 5 years.
 - **Secure Online Platform:**
 - An online platform with robust **cybersecurity** measures that would assure transparency, accountability, efficiency, and timely delivery of the assistance without any delays.
 - States will **undertake fool-proof verification** of the eligibility, caste status, Aadhar identification and bank account details on the online portal.
 - **Direct Benefit Transfer:**
 - Unlike earlier, when funding was passed through state governments, financial assistance will be transferred by the **Direct Benefit Transfer (DBT)** mode and preferably using the **Aadhaar Enabled Payment System**.
 - Students will receive the Centre's share as soon as the state transfers its share as per fixed time schedule.
 - **New Funding Pattern:**
 - The Cabinet has approved a **total investment of ₹59,048 crore** with a new funding pattern of **60-40 for the Centre and States**.
 - Starting from 2021-22, the Central share would be released after ensuring that the concerned State Government has released their share.
 - This **replaces the existing committed liability system** and brings greater involvement of the Central government in this crucial scheme.

Note:

- **Committed liabilities** are payments anticipated during a financial year for contracts concluded in previous years.
- **Strong Monitoring Mechanisms:**
 - The scheme will be further strengthened through the conduct of social audits, annual third party evaluation, and half-yearly self-audited reports from each institution.

Next Instalment of PM-KISAN

Why in News

Recently, the Prime Minister has virtually released the **next instalment of financial benefit** under **Pradhan Mantri Kisan Samman Nidhi** (PM-KISAN).

Key Points

- **₹18000 crores** have been deposited in the bank account of **more than 9 crore farmers** through **Direct Benefit Transfer** (DBT).
- More than 1 lakh 10 thousand crore rupees have reached the account of farmers, since this scheme started in February 2019.
- **Pradhan Mantri Kisan Samman Nidhi:**
 - Launched in **February 2019**, it is a **Central Sector Scheme**, which is being implemented by the **Ministry of Agriculture and Farmers Welfare**.
 - On its first anniversary, the **PM-KISAN Mobile App** developed and designed by the **National Informatics Centre** (NIC) in collaboration with the Ministry of Electronics and Information Technology was launched.
 - Under the scheme, the Centre transfers an amount of **₹6,000 per year**, in **three equal instalments**, directly into the bank accounts of the all landholding farmers irrespective of the size of their landholdings.
 - The entire responsibility of identification of beneficiary farmer families **rests with the State/UT Governments**.
 - It aims to:
 - **Reduce the input cost** of the farmers.
 - **Ensure a fair price** for the crop.
 - **Open new markets** for the farmers to sell their crop.

- **Supplement the financial needs of the Small and Marginal Farmers (SMFs).**

➤ Farmer Centric Improvements:

- Fixed **one and a half times the production cost as Minimum Support Price** (MSP) for the farmers as per the recommendations of the long-standing **Swaminathan Committee report** and has also increased the number of crops for which MSP is available.
- Added more than a thousand **online agricultural mandis**.
- Worked towards **forming groups of small farmers** so that they can work as a collective force in their region.
 - A campaign is underway to **form more than 10,000 Farmers Producer Organizations** (FPOs) which are being given financial help.
- **Free treatment up to ₹5 lakh under Ayushman Bharat** scheme has reduced the major concern of the lives of farmers.
- **Better options are provided to farmers** through the **agricultural reforms**.
- **Soil Health Card Scheme**.
- **Neem Coating of Urea**.
- **Kisan Urja Suraksha evam Utthaan Mahabhiyan** (KUSUM) scheme to harness solar energy.
- **Pradhan Mantri Fasal Bima Yojana** (PMFBY).

Good Governance Day

Why in News

Good governance day is celebrated annually on **25th December** to mark the birth anniversary of the former Prime Minister **Atal Bihari Vajpayee**.

- The aim is to **create awareness of accountability in government** among the citizens of India.

Key Points

- **Governance:**
 - It is the **process of decision-making** and the **process by which decisions are implemented** (or not implemented).
 - Governance **can be used in several contexts** such as corporate governance, international governance, national governance and local governance.

Note:

➤ Eight Characteristics of Good Governance (as identified by the [United Nations](#)):

○ **Participation:**

- People should have a **voice in decision-making**, either directly or through legitimate intermediate institutions that represent their interests.

○ **Rule of law:**

- **Legal frameworks should be fair** and enforced impartially, particularly the laws on human rights.

○ **Transparency:**

- Transparency is built on the **free flow of information**. Processes, institutions and information are directly accessible to those concerned with them, and enough information is provided to understand and monitor them.

○ **Responsiveness:**

- Institutions and processes **try to serve all stakeholders within a reasonable timeframe**.

○ **Consensus orientation:**

- Good governance requires **mediation of the different interests in society to reach a broad consensus** in society on what is in the best interest of the whole community and how this can be achieved.

○ **Equity:**

- All groups, particularly the most vulnerable, have **opportunities to improve or maintain their well being**.



○ **Effectiveness and efficiency:**

- Processes and institutions produce results that **meet needs while making the best use of resources**.

○ **Accountability:**

- Decision-makers in government, the private sector and civil society organisations are **accountable to the public, as well as to institutional stakeholders**.

➤ **Challenges to Good Governance in India:**

○ **Women Empowerment:**

- Women are not adequately represented in government institutions, and other allied sectors.

○ **Corruption:**

- The high level of corruption in India has been widely perceived as a major obstacle in improving the quality of governance.

○ **Delay in Justice:**

- A citizen has the right to avail timely justice, but there are several factors, because of which a common man doesn't get timely justice. One such factor is lack of personnel and logistics under disposal of court.

○ **Centralisation of Administrative System:**

- Governments at lower levels can only function efficiently if they are empowered to do so. This is particularly relevant for the **Panchayati Raj Institutions (PRIs)**, which currently suffer from inadequate devolution of funds as well as functionaries to carry out the functions constitutionally assigned to them.

○ **Criminalisation of Politics:**

- The criminalisation of the political process and the unholy nexus between politicians, civil servants, and business houses are having a baneful influence on public policy formulation and governance.

○ **Environmental security, sustainable development.**

○ **Challenges of globalization, liberalisation and market economy.**

➤ **Initiatives Taken:**

○ **Good Governance Index:**

- GGI has been launched by the **Ministry of Personnel, Public Grievances & Pensions** to determine the status of governance in the country.
- It assesses the impact of various interventions taken up by the State Government and UTs.

Note:

○ National e-Governance Plan:

- It has the vision to “make all government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency & reliability of such services at affordable costs to realize the basic needs of the common man.”

○ Right to Information Act, 2005:

- It plays an effective role in ensuring transparency in governance.

○ Other Initiatives: Setting up of NITI Aayog, Make in India programme, Lokpal, etc.

Atal Bihari Vajpayee

- Atal Bihari Vajpayee was born on 25th December, 1924 in the erstwhile princely state of Gwalior (now a part of Madhya Pradesh).



- He entered in national politics during the **Quit India Movement of 1942** which hastened the end of British colonial rule.
- In 1947, Vajpayee **started working as a journalist for newspapers of Deendayal Upadhyaya** — Rashtradharma (a Hindi monthly), Panchjanya (a Hindi weekly) and the dailies Swadesh and Veer Arjun. Later, influenced by Syama Prasad Mookerjee, Vajpayee **joined the Bharatiya Jana Sangh in 1951**.
- He was the **former Prime Minister of India** and was **elected to the position twice in 1996 and 1999**.
- As a parliamentarian, Vajpayee was awarded with the **Pandit Govind Ballabh Pant Award for Best Parliamentarian in 1994**, which defines him as “a role model par excellence for all legislators.”
- He was **conferred** with the country’s highest civilian honour, the **Bharat Ratna in 2015** and second-highest civilian honour, the **Padma Vibhushan in 1994**.

Main Bhi Digital Drive for Street Vendors

Why in News

The **Ministry of Housing and Urban Affairs (MoHUA)** is going to launch ‘**Main Bhi Digital (me too digital)**’ drive for the street vendors to enable them to **accept and make payments digitally**.

- The drive has been encouraged by the success of the **Prime Minister Street Vendor’s AtmaNirbhar Nidhi (PMSVANidhi) scheme**, launched in the wake of the **Covid-19 lockdown**, to provide vendors microcredit.

Key Points

- **Main Bhi Digital Drive:**
 - As part of the new drive, between **4th January to 22nd January 2021**, over **10 lakh street vendors** across the country who have availed of the **₹10,000 loan** will be **trained in using digital payments**.
 - The vendors would be able to not just **receive payments digitally** but also **pay for material** they procure from sellers **using unique QR codes**.
 - The **mobile phones** of the vendors will be **equipped with the software needed for the transactions**, and training provided to them on safe and secure payments.
- **PMSVANidhi Scheme:**
 - It is a scheme of the **MoHUA** launched in **June 2020** which entitles the street vendors to **₹10,000 interest-free loan** as working capital to restart their businesses.
 - Data shows that **only 20% of the beneficiaries are digitally enabled**.
- **Street Vendors in India:**
 - Anyone who **doesn’t have a permanent shop** is **considered a street vendor**.
 - According to government estimates, **street-vending accounts for 14% of the total (non-agricultural) urban informal employment in the country**.
 - There are an estimated **50-60 lakh street vendors in India**, with the largest concentrations in the cities of Delhi, Mumbai, Kolkata, and Ahmedabad.

Note:

○ Issues:

- **Licence caps** are **unrealistic** in most cities, for example, Mumbai has a ceiling of around 15,000 licences as against an estimated 2.5 lakh vendors.
 - This means most **vendors hawk their goods illegally**, which makes them **vulnerable to exploitation and extortion by local police and municipal authorities**.
- Often, local bodies conduct **eviction drives** to clear the pavements of encroachers, and confiscate their goods. **Fines for recovery are heavy**.

○ Organizations for Street Vendors:

- **National Association of Street Vendors of India (NASVI)**: It is a **membership based organization** of 1,024 street vendors organizations representing 10,00,000 street vendors from almost all parts of India.
- **National Hawker Federation (NHF)**: It is an association of street vendors **across 28 States** in the country, with **1,188 Unions**, including **11 Central Trade Unions** and over **20 International Trade Unions** abroad.

➤ Other Initiatives for the Street Vendors:

- **The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014** :It was enacted to regulate street vendors in public areas and protect their rights.
 - The Act defines a “**street vendor**” as a **person engaged in vending of articles** of everyday use or **offering services** to the general public, in **any public place or private area**, from a **temporary built up structure or by moving from place to place**.
- The government has also launched its first-ever official **socio-economic survey of vendors**, to bring street vendors under schemes such as :
 - [Pradhan Mantri Jeevan Jyoti Bima Yojana](#).
 - [Pradhan Mantri Suraksha Bima Yojana](#).
 - Jan-Dhan Yojana.
 - [Building and Other Construction Workers Act 1996](#).
 - [Pradhan Mantri Shram Yogi Maandhan Yojana](#).
 - [Pradhan Mantri Matru Vandana Yojana](#).

PM WANI: India's New Public Wi-Fi Project

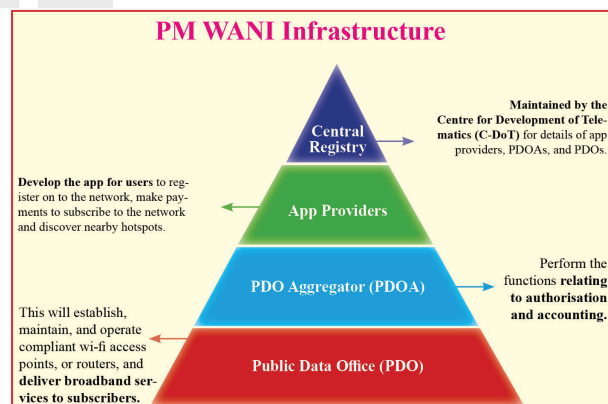
Why in News

The Union Cabinet recently cleared a proposal by the Department of Telecommunications (DoT) to set up **public Wi-Fi access network interfaces**.

- The **public Wi-Fi Access Network Interface**, which will be called ‘**PM-WANI**’, was first recommended by the **Telecom Regulatory Authority of India (TRAI)** in 2017.

Key Points

- **PM-WANI**: This will involve **multiple players**, including PDOs, PDOAs, app providers, and a central registry. **PM-WANI infrastructure** can be structured in the **form of a pyramid**.



➤ Need for a Public Wi-Fi Network in India:

- To **increase the proliferation of internet services** in the country.
 - With PDOs - which will basically be small retail outlets across the length and breadth of the country - **last mile connectivity** is being aimed at.
- To **offer a cost-effective option** for the common man.
 - Even in urban areas with sufficient mobile data coverage, the **mobile internet tariffs are bound to increase**.
- To achieve the ‘**Digital India**’ vision.
 - From **2015 to June of 2020**, India grew from **302 million internet subscribers to 750 million**.

Note:

That is a **Compound Annual Growth Rate (CAGR) of 20%**, making India one of the fastest growing internet markets in the world.

- However, this statistic **overshadows the quality of access**. Only 23 million are wired internet subscribers.
 - If Digital India vision is to be achieved, there is a **need to deliver a resilient and reliable connection to every Indian**, so that they can have reliable access everywhere, at affordable price points.
 - According to **Digital Quality of Life Index 2020**, India was placed at 9th position in **Internet Affordability**, outperforming even countries like the UK, the USA and China. While, for **Internet Quality** and **E-infrastructure**, India was almost at the bottom of the pillar placed at 78th and 79th (out of 85) positions respectively.
- **Potential Benefits:**
- It has the **potential to generate over 2 crore jobs and entrepreneurship opportunities**, besides offering a cost-effective means of mass connectivity.
 - Given the **National Digital Communications Policy** goals of creating 1 crore public Wi-Fi hotspots by 2022, and with the present number being merely at 3.5 lakh, PM-WANI is expected to result in the **creation of demand and scope for developing the components for this pan-India activity (Atmanirbhar Bharat)**.
 - **PDOs can become local distribution centres for content.**
 - Students in rural areas can access offline content without using bandwidth.
 - Combining this with the **liberalisation of the Other Service Providers (OSPs) regulations**, one can see that **India is paving the way for digital SMEs (Small and Medium-sized Enterprises) to go online** without the burden of onerous compliances.
 - It will further **Ease of Doing Business and Ease of Living**, as it will enable small shopkeepers to provide Wi-Fi service.
- **Challenges:**
- **Network Security:**
 - Most Wi-Fi hotspots don't encrypt information that is sent over the Internet and therefore

aren't secure. This could potentially lead to **hacking or unapproved access to personal information** on the device.

Wi-Fi

- It is a **networking technology that uses radio waves to allow high-speed data transfer** over short distances.
- Wi-Fi **allows Local Area Networks (LANs)** to operate without cables and wiring, making it a popular choice for home and business networks.
- Wi-Fi can also be used to **provide wireless broadband Internet access** for many modern devices, such as laptops, smartphones, tablet computers, and electronic gaming consoles.
- Wi-Fi-enabled devices are able to connect to the Internet when they are near areas that have Wi-Fi access, called **"hot spots"**.
- According to **Cisco Annual Internet Report (2018-2023)**, there will be **nearly 623 million public Wi-Fi hotspots** across the world by 2023, up from 169 million hotspots as of 2018.
 - Within this, the highest share of hotspots by 2023 will be in the Asia Pacific region at 46%. As per the calculations of the Telecom Regulatory Authority of India (TRAI), based on Cisco's estimates, **India should have 100 million Wi-Fi hotspots by 2023.**

Centre for Development of Telematics

- C-DOT was established in 1984 as an **autonomous Telecom R&D centre of DoT**, Government of India.
 - It is a **registered society** under the Societies Registration Act, 1860.
 - It is a **registered 'public funded research institution' with the Department of Scientific and Industrial Research (DSIR)**, Ministry of Science & Technology.
- However, the **Indian public Wi-Fi hotspot network** envisages that the access to the Internet through these points will be permitted only through **electronic KYC (Know Your Customer) and a mix of OTP (One-Time Password) and MAC ID-based authentication system**, thereby minimising the risk of network security being compromised.
 - The **MAC authentication** method grants access to a secure network by authenticating devices for access to the network.

Note:

○ Viability of the Project:

- The viability of public Wi-Fi networks in India has also been called into question with several tech-giants already having tried and failed.
- In 2017, social media company **Facebook** had **launched Express Wi-Fi**. The project made little impact.
- **Google's Station project**, to provide free wi-fi in more than 400 railway stations across India and "thousands" of other public places, which was launched in **2015**, was shut down earlier this year.
 - Google cited **cheaper and more accessible mobile data, government initiatives** to provide access to the Internet for everyone and the **challenge of varying technical requirements and infrastructure**.

Suggestions

- The **citizen expects** robust service, protection of data integrity, transparency on commercial use of data, and security against cyberattacks.
- The government must also ensure true unbundling of hardware, software, apps and payment gateways in the WANI system, as advocated by TRAI, to **prevent monopolies**. Existing public wi-fi options run on a limited scale by some entities compel consumers to pay through a single gateway app, underscoring the need for reform.

e-Sewa Kendra

Why in News

Recently, an **e-Sewa Kendra** has been inaugurated by the **Chief Justice of India (CJI)** at the **High Court of Tripura**.

Key Points

- **e-Seva Kendra:**
 - **e-Seva Kendras** have been **created in the High Courts and in one District Court in each State** on a pilot basis.
 - They are dedicated to serving as a **one-stop centre for all legal aid and assistance** for common litigants and advocates.

- It **enables litigants to obtain information with respect to case status** and to obtain copies of judgments and orders.
- These centres also extend assistance in e-filing of cases.
- These Kendras represent a **significant step for the common man and his right to access to justice**.

➤ Other Technological Initiatives to Provide Legal Services :

○ Tele-Law:

- **About: Tele-Law programme** was launched by the **Ministry of Law and Justice in collaboration with the Ministry of Electronics and Information Technology (MeitY)** in **2017** to address cases at the pre-litigation stage.
- **Connect Lawyers to Litigants:** It is a service that uses **video conferencing facilities and telephone services to connect lawyers to litigants who need legal advice**. This service aims to reach out to the needy especially the marginalized and disadvantaged.
- **Common Service Centres:** Under this programme, **smart technology of video conferencing, telephone/instant calling facilities available at the vast network of Common Service Centres at the Panchayat level is used** to connect the indigent, down-trodden, vulnerable, unreached groups and communities with the Panel Lawyers for seeking timely and valuable legal advice.

○ 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**. It is a **pan-India Project, monitored and funded by the Department of Justice, Ministry of Law and Justice**.
- **Objectives of the Project:**
 - 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 and accessibility of information to its stakeholders.

Note:

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

Electricity (Rights of Consumers) Rules, 2020

Why in News

Recently, the government has notified the **Electricity (Rights of Consumers) Rules, 2020**, which would allow consumers in India to access a continuous supply of reliable electricity.

- Electricity is a **Concurrent List** or **List-III (Seventh Schedule)** subject and the central government has the authority and the power to make laws on it.

Key Points

- **Coverage:**
 - The rules cover **various aspects of power supply to consumers** in the country, including obligations of distribution licensees, metering arrangements, the release of new connections, modifications of existing connections, grievance redressal and compensation mechanisms.
- **Significance:**
 - This will make the **distribution companies more accountable** to consumers, thus **reducing their monopolies** and **giving consumers more alternatives**.
 - To ensure compliance, the government will **apply penalties that will be credited to the consumer's account**.
 - These rules are also an important step towards **furthering the ease of doing business** across the country.
 - Implementation of these Rules shall ensure that new electricity connections, refunds and other services are given in a **time-bound manner**.

Areas Covered in the Rules

- **Rights and Obligations**
 - Duty of every distribution licensee to supply electricity on request made by an owner or occupier of any premises in line with the provisions of Act.

- Right of consumers to have minimum standards of service for the supply of electricity from the distribution licensee.

➤ Release of New Connection and Modification in Existing Ones

- Transparent, simple and time-bound processes.
- An applicant has an option for online application.
- The maximum time period of 7 days in metro cities and 15 days in other municipal areas and 30 days in rural areas identified to provide new connections and modify an existing connection.
- Disconnection and Reconnection Provisions

➤ Metering Arrangement

- No connection shall be given without a meter.
- Meter shall be the smart prepayment meter or a prepayment meter.
- Provision of Testing of meters.
- Provisions for replacement of defective or burnt or stolen meters specified.

➤ Billing and Payment

- Transparency in applicable consumer tariff and bills.
- A consumer shall have the option to pay bills online or offline.
- Provision for advance payment of bills.

➤ Reliability of Supply

- The distribution licensee shall supply 24x7 power to all consumers. However, lower hours of supply for some categories of consumers like agriculture could be specified.
- The distribution licensee shall put in place a mechanism, preferably with automated tools to the extent possible, for monitoring and restoring outages.

➤ Consumer as Prosumer

- While the prosumers will maintain consumer status and have the same rights as the general consumer, they will also have the right to set up **Renewable Energy (RE)** generation units including **rooftop solar photovoltaic (PV)** systems.
 - A prosumer is an individual who **both consumes and produces**.

➤ Standards of Performance of License

- Standards of performance for the distribution licensees will be notified.

Note:

- Compensation amount to be paid to the consumers by the distribution licensees for violation of standards of performance.
- **Compensation Mechanism**
 - Automatic compensation shall be paid to consumers for which parameters on standards of performance can be monitored remotely.
- **Call Centre for Consumer Services**
 - Distribution licensee shall establish a centralised 24x7 toll-free call centre.
 - Licensees shall endeavour to provide all services through a common **Customer Relation Manager (CRM) System** to get a unified view.
- **Grievance Redressal Mechanism**
 - **Consumer Grievance Redressal Forum (CGRF)** to include consumer and prosumer representatives.
 - It has been made easy by making it multi-layered and the number of consumer's representatives have been increased from one to four.
 - The licensee shall specify the time within which various types of grievances by the different levels of the forums are to be resolved. **Maximum timeline of 45 days** specified for grievance redressal.

Investment for Creating Gas Infrastructure

Why in News

The government will invest around **USD 60 billion** in creating gas infrastructure in the country till **2024** and increasing **gas's share** in the energy mix up to **15%** by **2030**.

- Currently, gas accounts for **6% in the country's total energy mix**.

Key Points

- **Proposed Infrastructure Plan:**
 - It includes **pipelines, LNG (Liquefied Natural Gas) terminals** and **CGD (City Gas Distribution) networks**.
 - It has been envisaged to develop **additional about 14,300 km pipelines** to complete the **National Gas Grid** and is at various stages of development.

- At present, the country has **6 operational LNG regasification terminals**.
 - The government has further planned to have **1,000 LNG fuel stations** across the country.
- Coverage of CGD projects is being expanded to 232 geographical areas spread over 400 districts, with potential to cover about **53% of the country's geography and 70% of the population**.
- **National Gas Grid:**
 - Since a **National Gas Grid (NGG)** was conceptualized in 2000, India has built more than 16,000 km of the gas network.
 - **Recent initiatives include:**
 - **Pradhan Mantri Urja Ganga Project:** It seeks to cater to the energy requirements of **Uttar Pradesh, Bihar, Jharkhand, Odisha and West Bengal**.
 - **North East Region Gas Grid:** It will pass through Assam, Sikkim, Mizoram, Manipur, Arunachal Pradesh, Tripura, Nagaland and Meghalaya in a phased manner.
- **City Gas Distribution Network:**
 - Under the **Petroleum and Natural Gas Regulatory Board (PNGRB) Act 2006**, PNGRB grants the authorization to the entities for **developing a CGD network** in a specified Geographical Area (GA) of the country.
 - The CGD sector has four distinct segments, **Compressed Natural Gas (CNG)** predominantly used as **auto-fuel**, and **Piped Natural Gas (PNG)** used in **domestic, commercial and industrial segments**.
- **Related Government Initiatives:**
 - **Natural Gas Marketing Reforms:** Recently, the Cabinet Committee on Economic Affairs (CCEA) has approved the **Policy framework on reforms in the exploration and licensing sector** for enhancing domestic exploration and production of oil and gas.
 - **Indian Gas Exchange:** India's first automated **national-level gas trading platform** was unveiled in June 2020, to promote and sustain an efficient and robust gas market and foster gas trading in the country
 - **Pradhan Mantri Ujjwala Yojana:** It aimed to provide **free cooking gas connections** to poor families.

Note:

- **Gas4India Campaign:** It is a multimedia, multi-event campaign to communicate to people, the national, social, economic and ecological benefits of using natural gas as the fuel.
- **Hydrocarbon Exploration and Licensing Policy (HELP):** It is a **contractual and fiscal model** for the award of hydrocarbon acreages towards exploration and production (E&P). It provides a **single, or uniform, license** for the exploration and production of all conventional and unconventional hydrocarbons from an entire contract area.
- Promotion to **Compressed Natural Gas based Public Transport**.
- **Transnational Gas Pipelines:**
 - **Turkmenistan-Afghanistan-Pakistan-India (TAPI)** pipeline.
 - The **Middle East to India Deepwater Pipeline**.

Natural Gas

- It is mainly extracted from the **petroleum deposits deep beneath the earth**. It occurs **just above the layer of crude oil**, as gases are lighter than oil.
- **High temperatures and pressure** lead to the conversion of the **remains of plants and animals buried under the earth** into naturally occurring gas along with petroleum and coal.
- In India, **Jaisalmer, Krishna Godavari delta, Tripura** and some areas offshore in **Mumbai** have natural gas resources.
- The **Gas Authority of India Limited** was set up in 1984 as a public sector undertaking (PSU) to transport and market natural gas.
- **Need for Gas-based Economy:**
 - **Energy-efficient:**
 - Natural gas produces more energy than any of the fossil fuels in terms of **calorific value**.
 - **Cleaner fuel:**
 - Natural gas is a superior fuel as compared with coal and other liquid fuels; being an **environment-friendly, safer and cheaper fuel**.
 - **Emission commitments:**
 - India made a commitment to **COP-21 Paris Convention** in December 2015 that by 2030, it would reduce carbon emission by 33%-35% of 2005 levels.
- **Diverse applications:**
 - Natural gas can be used as **domestic kitchen fuel**, fuel for the **transport sector** as well as a fuel for fertilizer **industries** and commercial units.
- **Pacing up the progress line:**
 - On the global front, switching to natural gas is bringing commendable results. The latest report released by the **International Energy Agency** shows that the electricity produced by natural gas worldwide was more than that of coal for the first time ever.

Catch the Rain: National Water Mission

Why in News

Recently, the **National Water Mission (NWM)**, **Ministry of Jal Shakti** in collaboration with **Nehru Yuva Kendra Sangathan (NYKS)**, **Ministry of Youth Affairs and Sports** have launched the 'Catch the Rain' Awareness Generation Campaign.

Key Points

- **Tag line:** Catch the rain, where it falls, when it falls.
- **Aims:**
 - To nudge all stake-holders to create **Rain Water Harvesting Structures (RWHS)** suitable for the climatic conditions and subsoil strata to store rainwater.
 - To **engage people at the grassroots through effective campaigning and Information, Education and Communication (IEC) activities** for implementation of the campaign.
- **Activities:**
 - **Drives** to make water harvesting pits, rooftop RWHS and check dams.
 - **Removal of encroachments and desilting of tanks** to increase their storage capacity.
 - **Removal of obstructions** in the channels which bring water from the catchment areas.
 - **Repairs to traditional WHS** like step-wells and using defunct bore-wells and old wells to put the water back to aquifers.

Note:

Steps Taken for Water Conservation

- **Mahatma Gandhi National Rural Employment Guarantee Act:**
 - Aims to improve groundwater harvesting, build water conservation and storage mechanisms and has enabled the government to introduce water conservation as a project under the Act.
- **Jal Kranti Abhiyan:**
 - Active efforts to revolutionise villages and cities through block-level water conservation schemes.
 - For example, the **Jal Gram Scheme** under it aimed at developing two model villages in water-starved areas for water conservation and preservation.
- **National Water Mission:**
 - Aims to conserve water, minimise wastage and ensure more equitable distribution both across and within states through integrated water resources development and management.
- **NITI Aayog's Composite Water Management Index:**
 - Aims to achieve effective utilization of water.
- **Jal Shakti Ministry and Jal Jeevan Mission:**
 - Jal Shakti Ministry was formed to tackle water issues holistically.
 - Jal Jeevan mission aims to provide piped water to all rural households by 2024.
- **Atal Bhujal Yojana:**
 - Central sector scheme for sustainable management of groundwater with community participation through the formation of **Water User Associations**, water budgeting, preparation and implementation of Gram-panchayat-wise water security plans, etc.
- **Jal Shakti Abhiyan:**
 - Launched in July 2019 as a campaign for water conservation and water security in the country.
- **National Water Awards:**
 - Organised by the **Department of Water Resources, River Development and Ganga Rejuvenation**, Ministry of Jal Shakti.
 - Focus on the good work and efforts made by individuals and organisations across the country, and the government's vision for the path to **Jal Samridh Bharat**.
- As a preparatory phase of **Jal Shakti Abhiyan** (JSA) II, NYKS will undertake an **awareness campaign** through various IEC activities, to cover 623 districts from December 2020 to March 2021.

- IEC activities will include conducting education and motivational programs, mass awareness campaigns, environment building including wall writing, etc.

- States have been requested to **open Rain Centers in each district**, which will act as a **technical guidance centre** to all in the district.

➤ Significance:

- Emphasized focus on water conservation and rainwater harvesting will make **youngsters understand the importance of water**.
- **Highest priority to the issue of water conservation** will lead to the adoption of an integrated approach towards water management.
- The idea of "No or only limited will water to flow out of the compound" will help in **improving soil moisture and rising groundwater table**.
- In urban areas it will **reduce water gushing onto roads**, damaging them and will prevent urban flooding.

Governor's Role in Calling an Assembly Session

Why in News

Recently, the Kerala **Governor** has turned down a request of the state **Cabinet** to **summon a special sitting of the Assembly** to debate the new **three central farm laws**.

Key Points

- Constitutional Provisions Related to Governor's Role in Calling an Assembly Session:
 - **Article 174:** Says that the **Governor shall from time to time summon the House** or each House of the Legislature of the State to meet at such time and place as he thinks fit.
 - The provision also puts on the Governor the **responsibility of ensuring that the House is summoned at least once every six months**.
 - **Article 163:** Although it is the Governor's prerogative to summon the House, according to Article 163, the Governor is required to **act on the "aid and advice" of the Cabinet**.

Note:

- So when the Governor summons the House under Article 174, this is not of his or her own will but on the **aid and advice of the Cabinet**.

○ **Exception:**

- When the **Chief Minister appears to have lost the majority and the legislative members of the House propose a no-confidence motion** against the Chief Minister, then **the Governor can decide on his or her own on summoning the House**.
- The **actions of the Governor**, when using his **discretionary powers** can be **challenged in court**.

➤ **Supreme Court's (SC) Ruling Related to Governor's Role:**

- In **2016**, the **SC** looked into the constitutional crisis in Arunachal Pradesh after the Governor had imposed **President's Rule** in the state. The SC ruled
 - In **ordinary circumstances** during the period when the Chief Minister and his council of ministers enjoy the confidence of the majority of the House, the **power vested with the Governor under Article 174** to summon, prorogue and dissolve the house(s) must be **exercised in consonance with the aid and advice of the chief minister and his council of ministers**.
 - **Summon:** Summoning is the process of **calling all members of the Parliament/Assembly to meet**.
 - **Prorogue:** Prorogation means the **termination of a session** of the House.
 - **Dissolve:** A dissolution **ends the very life of the existing House**, and a new House is constituted after general elections are held.
 - The court read the **power to summon** the House as a **"function"** of the Governor and **not a "power"** he enjoys.
- Sarkaria Commission (1983) on Governor's Role:
 - So long as the **Council of Ministers enjoys the confidence of the Assembly**, its **advice** in these matters, unless patently unconstitutional, must be deemed as **binding on the Governor**.
 - It is only where such advice, if acted upon, would lead to an infringement of a constitutional provision, or **where the Council of Ministers has**

ceased to enjoy the confidence of the Assembly, that the question arises whether the **Governor may act in the exercise of his discretion**.

➤ **Consequences in Kerala Case:**

- If the Kerala government insists on holding the special session, there can be **no legal ground to deny** a request for summoning the session as:
 - The Governor's powers are limited with regard to summoning the House.
 - If the Governor refuses, the Governor's refusal can also be **challenged in court**.

Governor

- The Governor's appointment, his powers and everything related to the office of Governor have been discussed under **Article 153 to Article 162 of the Indian Constitution**.
 - One person can be appointed as Governor for two or more States.
- The **role** of the Governor is quite **similar** to that of the **President of India**.
 - The Governor performs the **same duties as the President**, but for the State.
 - The Governor stands as **executive head of a State** and the **working remains the same as that of the office of President of India**.
- It is stated that the Governor has a dual role.
 - He is the **constitutional head of the state**, bound by the advice of its council of ministers.
 - He functions as a **vital link between the Union Government and the State Government**.
- **Eligibility:**
 - **Article 157 and Article 158** of the Constitution of India specify eligibility requirements for the post of governor. They are as follows:
 - **A governor must:**
 - Be a citizen of India.
 - Be at least 35 years of age.
 - Not be a member of the either house of the Parliament or house of the state legislature.
 - Not hold any office of profit.
- **Appointment:**
 - He is **appointed by the President** by warrant under his hand and seal.

Note:

➤ Term:

- The **term** of governor's office is **normally 5 years** but it can be terminated earlier by:
 - **Dismissal by the President** on the advice of the council of ministers headed by the Prime Minister of the country.
 - Dismissal of governors without a valid reason is not permitted.
 - However, it is the duty of the President to **dismiss a governor whose acts are upheld by courts as unconstitutional and malafide**.
 - **Resignation** by the governor.

➤ Discretionary Powers:

- **Appointment of the Chief Minister:** Generally, the leader of the party with majority is appointed as the Chief Minister. But in a situation where no party gets an absolute majority, the Governor exercises his discretionary powers in appointing the Chief Minister.
- **Dismissal of a Ministry:** A minister holds offices during the pleasure of the Governor. When the ministry loses support of the house, the governor will dismiss the ministry. But he cannot dismiss it until it loses majority support.
- **Advising the President for proclamation of Emergency:** The Governor advises the President to proclaim emergency when he is satisfied that the Government cannot carry on in accordance with the provisions of the constitution, under Article 356.
- **Reservation of a bill for the consideration of the President:** However, situations are mentioned in Article 200, when he will reserve the bill, yet he can use discretion regarding this matter.
- **Dissolution of Legislative Assembly:** The Governor summons, prorogues and dissolves the Legislative Assembly, according to Article 174. When the ministry loses the majority and the Governor is satisfied, he may dissolve the House.

Inner-Line Permit in Manipur

Why in News

Recently, the Union Home Minister has highlighted the importance of **Inner-Line Permit (ILP)** system in

Manipur, while inaugurating several development projects in Manipur.

- The projects include **Thoubal Multipurpose Project** (Thoubal Dam), **Integrated Command and Control Center** at Imphal, etc.
 - Thoubal multipurpose project was first considered by the **Planning Commission in 1980** and the original cost of the project was ₹47.25 crores.
 - A scheme for it was **launched in 2004** but **nothing happened till 2014** and the project remained on paper.
 - It is **located on river Thoubal**, a tributary of Manipur river and will irrigate **35,104 hectares**.

Key Points

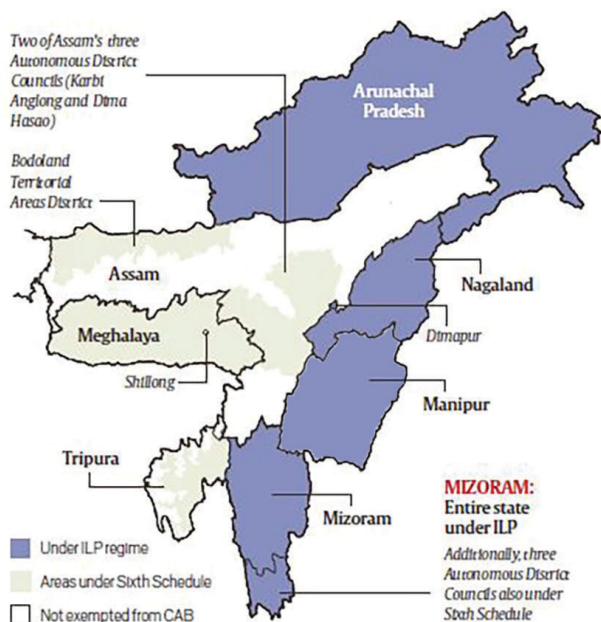
- ILP was a **long-standing demand** of the people of Manipur and **denying it would have been an injustice to the indigenous people**.
- Hence, **Manipur, along with Dimapur district of Nagaland**, was brought under the purview of the ILP System in **December 2019**.
 - Dimapur was the only place in Nagaland which was not under the ILP system because the district is a commercial hub and has a mixed population (often referred to as 'Mini India').
- Pressure groups in the northeast **view this permit as a shield against the entry of illegal immigrants**.
- **Nagaland, Arunachal Pradesh, Manipur and Mizoram** were **exempted from the provisions of the Citizenship Amendment Act (CAA) 2019** due to the ILP.
 - The provisions on citizenship for illegal migrants **would not apply to tribal areas of Assam, Meghalaya, Mizoram or Tripura as included in the Sixth Schedule** to the Constitution and the area covered under the ILP system.
 - In **December 2019**, the **Meghalaya Assembly adopted a resolution for implementing the ILP regime** in the state and **urged the centre to include it in the ILP system**.

Inner Line Permit System

- Implemented under the **Bengal Eastern Frontier Regulation (BEFR) 1873**, the ILP is an **official travel document** which **allows inward travel of an Indian citizen into a protected/restricted area** for a limited period.

Note:

- This Act was enacted during the British era to **protect the Crown's own commercial interests** by preventing 'British subjects' (Indians) from trading within these regions.
 - In 1950, the Indian government replaced 'British subjects' with 'Citizen of India'.
 - An **imaginary line known as the inner-line** was created to divide between the two communities so that neither party could go beyond the line without a permit from the appropriate authorities.
 - Under **Section 2 of the Regulation of 1873**, the ILP was **only applicable to the three North-Eastern States viz. Mizoram, Arunachal Pradesh and Nagaland**.
 - On **11th December 2020**, the President signed the order **extending ILP to Manipur**, which became the fourth state where the ILP regime is applicable.
- It is a **special permit obligatorily required by "outsiders"** from other regions of the country to enter the notified states.



ARUNACHAL PRADESH: Entire state under ILP regime

NAGALAND: Entire state under ILP regime

TRIPURA: Sixth Schedule covers 70% of geographical area

MEGHALAYA: Almost entire state covered under Sixth Schedule, except a part of Shillong

ASSAM: 3 Autonomous District Councils under Sixth Schedule

MANIPUR: Entire state under ILP regime

- It is **issued by the concerned State Government** and can be issued **for travel purposes solely**.

- Foreigners need a **Protected Area Permit (PAP)** to **visit tourist places** which are different from ILPs needed by domestic tourists.
- Under the **Foreigners (Protected Areas) Order 1958**, all areas falling between the 'Inner Line', as defined in the said order, and the International Border of the State have been declared as a Protected Area.
 - A **foreign national is normally not allowed to visit a Protected/Restricted Area unless** it is established to the satisfaction of the Government that there are **extraordinary reasons to justify such a visit**.

Merger of Manipur with India

- **Before 15th August 1947**, by peaceful negotiations, the **rulers of most of the states signed** the '**Instrument of Accession**' which meant that their state agreed to become a part of the Union of India.
- The **Maharaja of Manipur, Bodhachandra Singh**, **signed** the Instrument of Accession with the Indian government **on the assurance that the internal autonomy of Manipur would be maintained**.
- Under the pressure of public opinion, the Maharaja held **elections in Manipur in June 1948** and the state **became a constitutional monarchy**.
- Thus, **Manipur was the first part of India to hold an election based on universal adult franchise**.
- The Government of India succeeded in **pressuring the Maharaja into signing a Merger Agreement in September 1949**, without consulting the popularly elected Legislative Assembly of Manipur.
- On **21st January 1972**, **Manipur along with Meghalaya and Tripura became full-fledged states** under the **North Eastern Region (Reorganisation) Act, 1971**.
- The political map of Northeast India underwent a major change and the two **Union Territories of Manipur and Tripura** and the **Sub-State of Meghalaya** got statehood.

Ayushman Bharat PM-JAY SEHAT: J&K

Why in News

Recently the Prime Minister has launched the **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)** **Social Endeavour for Health and**

Note:

Telemedicine (SEHAT) scheme via video-conferencing to extend **health insurance coverage** to all residents of **Jammu and Kashmir (J&K)**.

Key Points

➤ AB-PMJAY SEHAT Scheme:

- The Scheme provides free of cost insurance cover. It provides financial cover upto ₹5 lakh per family on a floater basis to all residents of J&K.
 - Floater basis, means that it can be used by **one or all members** of the family. The whole family is insured under one plan.
- The scheme **would work in convergence with Pradhan Mantri Jan Arogya Yojana (PMJAY)**.

➤ Benefits:

- **Full coverage to residents of J&K:**
 - At present, about 6 lakh families of J&K are getting the benefit of the **Ayushman Bharat Scheme**. After the health plan, all **21 lakh families** will get the same benefit.
- **Portability of Treatment:**
 - Treatment will not be limited to government and private hospitals in J&K only. Rather, various hospitals are connected under this scheme in the country.
 - The hospitals empanelled under PM-AY scheme shall provide services under this scheme as well.
- **Universal Health Coverage:**
 - The scheme will ensure Universal Health Coverage (UHC) and focus on providing financial risk protection and ensuring quality and affordable essential health services to all individuals and communities.
 - UHC includes the full spectrum of **essential, quality health services, from health promotion to prevention, treatment, rehabilitation, and palliative care**.
 - UHC enables everyone to access the services, protecting people from the **financial consequences of paying for health services** out of their own pockets and reducing the risk that people will be pushed to poverty.
- **Ayushman Bharat PMJAY Yojana:**
 - The PMJAY, world's largest health insurance/assurance scheme **fully financed by the**

government, provides a cover of **₹5,00,000 per family per year** for **secondary and tertiary care hospitalisation across public and private empanelled hospitals** in India.

- Pre-hospitalisation and post-hospitalisation expenses such as diagnostics and medicines are also included in the scheme.

'Adopt a Heritage: Apni Dharohar, Apni Pehchaan' Project

Why in News

Recently, a review meeting of the "**Adopt a Heritage: Apni Dharohar, Apni Pehchaan**" project has been held.

Key Points

- **Launch:** 27th September, 2017 (**World Tourism Day**).
- **Ministries/Agencies Involved:** Ministry of **Tourism**, Ministry of **Culture** and **Archaeological Survey of India (ASI)**, **State/UTs Governments**.
- **Aim:** To **develop tourism amenities** at heritage/natural/tourist sites spread across India for making them tourist friendly, in a planned and phased manner.
- **Implementation:**
 - The **sites/monuments** are **selected on the basis of tourist footfall and visibility** and can be **adopted by** private and public sector companies and individuals, known as **Monument Mitras**, for an initial period of **five years**.
 - The **Monument Mitras** are **selected by the 'oversight and vision committee'**, co-chaired by the Tourism Secretary and the Culture Secretary, on the **basis of the bidder's 'vision' for development of all amenities** at the heritage site.
 - There is **no financial bid involved**.
 - The **corporate sector** is expected to use **Corporate Social Responsibility (CSR)** funds for the upkeep of the site.
- **Amenities:**
 - **Basic Facilities:** Clean drinking water facility, illumination, ease of access, aesthetics and cleanliness of site, installation of digi kiosk and ticketing kiosk, signage-descriptive and directional and Wi-Fi.

Note:

- **Advanced Amenities:** Visitor Facility Centre, Sound and Light Show, Snack Counter and Souvenir Shop, Augmented Reality Experience and Virtual Reality (360-degree experience).
- **Benefits to Monument Mitras:**
 - They will get **limited visibility on the site premises and on the Incredible India website.**
- **Status:**
 - Under the project, 27 Memorandum of Understandings (MoUs) have been awarded to 12 Monument Mitras for 25 sites and 2 technological interventions across India.
- **Other Schemes for Promoting Tourism:**
 - DekhoApnaDesh
 - Iconic Tourist Sites
 - Swadesh Darshan
 - Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive (PRASHAD)

Assam's Bill on Madrasa Conversion

Why in News

The Assam Assembly has recently passed a Bill to **convert state-run madrasas** into regular schools - removing them from the status of centres for religious education.

- The Cabinet has also decided that the existing provincialised Sanskrit tols will be converted to "study centres, research centres and institutions to study the Certificate/ Diploma/ Degree courses" to be started by Kumar Bhaskar Varma Sanskrit and Ancient Studies University, Nalbari with effect from 1st April 2022.

Key Points

- The **Assam Repealing Bill, 2020** was brought to repeal two existing Acts:
 - The Assam Madrassa Education (Provincialisation) Act, 1995.
 - The Assam Madrassa Education (Provincialisation of Services of Employees and Re-Organisation of Madrassa Educational Institutions) Act, 2018.
- The new legislation also covers private-run madrasas that are run under the state boards although private-run madrasas which are not under any state board will remain outside its purview.

- In English, the term madrasah or "madrasa" usually refers more narrowly to Islamic institutions of learning.
- Historians and other scholars also employ the term to refer to historical madrasah institutions throughout the Muslim world, which is to say a college/school where Islamic law was taught along with other secondary subjects.
- The Madrasas run by the Board of Secondary Education, Assam (SEBA) will have 'madrasa' dropped from their names and function as regular schools.
 - The staff of the madrasas, especially those teachers teaching religious subjects, will be retained. They will be either trained to teach other subjects or in some other capacity.
- It is said to be a move to empower the Muslim community.
- The bill is being said to follow the ideals of **B R Ambedkar**. He had said that religious instruction should have no place in curriculum.
 - The Quran should not be taught on government expenditure because the Bible or the Bhagavad Gita or texts of other religions are not taught on it.
 - The government spends ₹260 crore on madrasas and the Sanskrit "tols" (sanskrit learning centres) annually.
- Further, secularism is one of the 'basic features' of the Constitution.
- The government aspires that in the future a law is made to make private madrasas teach science, maths and other subjects along with religious subjects.

National Summit on Good, Replicable Practices & Innovations

Why in News

The Union Minister of Health and Family Welfare digitally inaugurated the **7th National Summit on Good, Replicable Practices & Innovations** through a video conference.

- The **New Health Management Information System (HMIS)** along with the **Operational Guidelines for Tuberculosis services at Ayushman Bharat-Health**

Note:

and Wellness Centres and the Operational Guidelines 2020 on Active Case Detection and Regular Surveillance for Leprosy was launched at the Summit.

Key Points

➤ About the Summit:

- The **Ministry of Health & Family Welfare** holds the **National Summit on Good, Replicable Practices and Innovations in Public Healthcare Systems in India**.
- The **first such summit was held in 2013 at Srinagar** to recognize, showcase and document **various best practices and innovations in the public healthcare system**.
- The practices and innovation presented in these summits span across programmatic areas ranging from **RMNCH+A (Reproductive, Maternal, Neonatal, Child Health and Adolescent Health)** to **communicable diseases** (including Tuberculosis, **Malaria** and other vector borne diseases and Leprosy) to new areas of **Non-Communicable Disease** control programmes.
- They also include innovations that apply systems thinking to health problems such as the use of information technology to strengthen continuum of care, and to address human resource shortages and challenges in capacity building.

➤ Highlights of the 7th National Summit:

- In the year 2020, 210 new initiatives were uploaded by the States and UTs in the **National Healthcare Innovation Portal**.
 - National Health Innovation Portal was launched to serve as a platform in the public domain to facilitate **collection and dissemination of good practices and innovations** that are found to be replicable.
- The **Covid-19 pandemic** has made the country **self-reliant** in the area of manufacturing of **PPE kit, Ventilator, mask, vaccine** etc.
- More than **1 million tele-consultations** have been done on the **e-Sanjeevani digital platform of the Health Ministry**.
 - e-Sanjeevani is a **doctor to doctor telemedicine system**, being implemented under the **Ayushman Bharat Health and Wellness Centre (AB-HWCs)** programme.

- **Department of Health and Family Welfare** has won the **Digital India award 2020** under the **Open Data Champion** category for the **e-Sanjeevani digital platform**.

- The **National Informatics Centre (NIC)**, under Ministry of Electronics and IT (MeitY), has been conducting the **biennial Digital India Awards** to promote innovation in **eGovernance and digital transformation of government service delivery mechanism**.

- Digital transformation has enabled the country to develop a national digital health ecosystem that supports **Universal Health Coverage** in an **efficient, accessible, inclusive, affordable, timely and safe manner**.

- There is a need to **involve and integrate the grassroots healthcare workers** for brainstorming on the innovations in the healthcare ecosystem, and benefit from the collective wisdom which emanates from **years of experience and expertise** of working with people's health delivery systems.

➤ Recent Examples of Health Digitisation:

- **National Digital Health Mission (NDHM)**:

- The **NDHM** is a **complete digital health ecosystem**. The digital platform will be launched with **four key features**: health ID, personal health records, Digi Doctor and health facility registry.

- **Aarogya Setu App**:

- It has an objective of enabling bluetooth based contact tracing and mapping of likely hotspots and dissemination of relevant information about Covid-19.

Health Management Information System

- It is a **Government to Government (G2G) web-based Monitoring Information System** to monitor the **National Health Mission** and other Health programmes and provide key inputs for policy formulation and appropriate programme interventions.
- HMIS was launched in **October 2008**. Currently, around 2 lakh health facilities (across all States/UTs) upload facility wise **service delivery data** on monthly basis, **training data** on quarterly basis and **infrastructure related data** on annual basis on HMIS web portal.

Note:

- HMIS has been utilised in **Grading of Health Facilities, identifications of aspirational districts, review of State Programme Implementation Plan (PIPs)**, etc.
- The analytical reports generated through HMIS also **provide gap analysis and evidence based course correction**.
- HMIS **captures facility-wise information** as follows:
 - **Service Delivery** (Reproductive, Maternal and Child Health related, Immunisation, family planning, Vector borne disease, Tuberculosis, Morbidity and Mortality, OPD, IPD Services, Surgeries etc.) data on a monthly basis.
 - **Training Data** (Trainings imparted to Medicals and Paramedics staff at District and State level data) on quarterly basis.
 - **Infrastructure** (Manpower, Equipment, Cleanliness, Building, Availability of Medical Services such as Surgery etc., Super Specialties services such as Cardiology etc., Diagnostics, Para Medical and Clinical Services etc.) data on annual basis.
- The HMIS Portal facilitates the flow of physical performance from the Facility level to the **Sub-district, District, State and National level** using a web based Health Management Information System (HMIS) interface.
- The new HMIS provides a **seamless online platform** through the provision of a wide range of data, information and infrastructure services, duly leveraging **open, interoperable, standards-based digital systems**.

Digital India Awards 2020

Why in News

Recently, the **President of India** has conferred **Digital India Awards 2020**.

Key Points

- **About the Awards:**
 - Digital India Awards have been institutionalized under the ambit of **National Portal of India** to honor exemplary initiatives/**practices in Digital-Governance**.
 - **National Portal of India:** It is a **Flagship Project** to facilitate single window access to Government Information and Services in cyberspace.

- **Digital-Governance:** It is a framework for establishing accountability, roles, and decision-making authority for an organization's digital presence.
 - These are **conducted by the National Informatics Centre (NIC)** under the Ministry of Electronics & Information Technology (MeitY).
 - The Awards **have been held for 5 seasons earlier**, in 2009, 2012, 2014, 2016 & 2018. The Awards were initially known as **Web Ratna Awards until 2014** and were **re-named Digital India Awards from the 2016 season**.
- **Awards 2020:**
 - **22 digital governance initiatives/** products by Government entities **under seven categories** received Digital India Awards 2020 for designing and implementing innovative citizen-centric digital solutions and improving the ease of living for all citizens.
 - **'Innovation in Pandemic award'** was introduced this year.
 - The award **also acknowledges States and Union Territories** that display exemplary initiative in establishing a comprehensive digital presence in sectors like health, labour, finance, social justice and environment, leading to the accomplishment of **Sustainable Development Goals (SDG)**.
- **Notable Winners:**
 - **E-committee of Supreme court of India:**
 - **E-Courts project** visioned and implemented by the e-Committee along with Department of Justice and NIC is a Mission Mode Project of Government of India.
 - Citizens can access case status, causelist court orders anywhere, any time through e-courts services website, mobile app, sms email services from the 3,293 court complexes.
 - **Arogya Setu:**
 - It is a **mobile application** developed by the Government of India to connect essential health services with the people of India in a fight against Covid-19.
 - The App is **aimed at augmenting the initiatives of the Government of India**, particularly the Department of Health, in proactively reaching out to and informing the users of the app

Note:

regarding risks, best practices and relevant advisories **pertaining to the containment of Covid-19.**

○ **eOffice:**

- It is a **Mission Mode Project under the National E-Governance Plan**, developed and implemented by NIC.
- It is a **digital workplace solution**. The vision of eOffice is to achieve a simplified, responsive, **effective and transparent working of all government offices.**

○ **eSanjeevani:**

- It is a **digital platform** of the Ministry of Health & Family Welfare.
- It has enabled **two types of telemedicine services** viz. Doctor-to-Doctor (eSanjeevani) and Patient-to-Doctor (eSanjeevani OPD) Tele-consultations.

○ **Bihar Sahayata Mobile App:**

- It was an innovative initiative **to transfer money directly to the bank accounts of 21 lakh stranded migrant workers outside the state.**

○ **Madhya Pradesh Labour Department's Pravasi Shramik and Rojgar Setu Portals:**

- These **gateways** have been recognised for facilitating identification, registration, skilling plus **employment of migrants and other workers** during the novel coronavirus pandemic.

○ **States:**

- **Haryana, Tamil Nadu, Uttar Pradesh and West Bengal** won the Award under 'Excellence in Digital Governance - State / UT' category.

India's First Fully Automated Metro

Why in News

Recently, the Prime Minister has inaugurated the **country's first fully automated Metro**, (Driverless Metro) on **Delhi Metro's Magenta Line**.

- He also extended the **fully operational National Common Mobility Card** (NCMC) to the Airport Express Line of the **Delhi Metro Rail Corporation** (DMRC).

Key Points

➤ **Driverless Metro:**

- With this achievement, DMRC has entered the **elite league of 7% of the world's Metro networks** where such a facility is available.
 - In **2014**, **only five cities had Metro** rail and **currently**, it is **present in 18 cities** and the number of Metro users has also increased manifold.
- The driverless trains will be **fully automated, eliminating the possibility of human error.**
- The technology has **different levels or Grades of Automation (GoA)**:
 - In GoA 1, trains are run by one driver.
 - In GoA 2 and GoA 3, the role of the driver is reduced to operating doors and for taking over in case of emergencies and the starting and halting of trains is automated.
 - In GoA 4, trains are set on a completely unattended operations mode.

➤ **Significance:**

- It uses a **braking system** in which **50% of the energy goes back into the grid** when the brakes are applied, which will save a considerable amount of energy making it an **energy-efficient system**.
- In a **boost to Make in India**, various big companies are involved in the manufacturing of Metro coaches and dozens in the manufacture of Metro components.
- **130 MW of solar power** is **currently being used** in the operations of Metro rail, which the government **intends to increase to 600 MW**.
- The **Regional Rapid Transit System** (RRTS) and **Metro Lite models** will **reduce the distance** between major cities and within them.

➤ **National Common Mobility Card:**

- It will give **access to all modes of transportation** and will do away with commuters having to wait in long queues for tokens.
- It **allows users to pay for** travel, toll charges and retail shopping, and permits them to withdraw money at the same time.
- It will **enable anyone carrying a RuPay-Debit Card issued in any part of the country to travel on the route.**

Note:

- This will not only help provide a common platform for people but will also allow better research data. **Researchers will be able to better assess the travelling patterns of people** and accordingly suggest the best plan for development
- **Other Developmental Works in Delhi:**
 - Incentivizing **electric vehicles** (EVs) by giving **tax rebates**. The old infrastructure of the capital is being **transformed into environment-friendly infrastructure based on modern technology**.
 - **Provision of better living conditions** to slum dwellers through **regularization of hundreds of colonies**.
 - **Opening up of new tourist destinations** and generation of employment.
 - Work for the new Parliament building under the **Central Vista Redevelopment Project** will not only **give employment to thousands** of people from Delhi but will also **change the face of the city**.



Note:

Economic Scenario

Highlights

- US Puts India on Currency Watchlist
- RBI Working Paper on Asset Quality and Credit Channel
- Loan Pact with NDB
- Bitcoins
- Fraud Cases in Public Sector Banks
- India to Become Fifth Largest Economy in 2025
- PCA Ruling on Retrospective Taxation
- Digital Lending
- GST Revenue Gap: NIPFP
- National Institute for Public Finance and Policy
- New Rule in GST
- 100% FDI in DTH Services
- Special Zero Coupon Recapitalisation Bonds
- 100th Kisan Rail
- Dedicated Freight Corridor

US Puts India on Currency Watchlist

Why in News

Recently, the US treasury has placed India on its currency manipulator watch list. Vietnam and Switzerland have been labelled as currency manipulators.

- In 2019, the US Treasury Department had removed India from its currency manipulator watch list of major trading partners.

Key Points

- **Currency Manipulators:**
 - This is a label given by the US government to countries it feels are engaging in “unfair currency practices” by deliberately devaluing their currency against the dollar.
 - The practice would mean that the country in question is artificially lowering the value of its currency to gain an unfair advantage over others. This is because the devaluation would reduce the cost of exports from that country and artificially show a reduction in trade deficits as a result.
- **Currency Manipulator Watch List:**
 - The US Department of Treasury releases the semi-annual report where it has to track developments in international economies and inspect foreign exchange rates.
 - **Criteria:** An economy meeting two of the three criteria in the Trade Facilitation and Trade

Enforcement Act of 2015 is placed on the Watch List. This includes:

- A “significant” bilateral trade surplus with the US — one that is at least USD 20 billion over a 12-month period.
- A material current account surplus equivalent to at least 2% of gross domestic product (GDP) over a 12-month period.
- “Persistent”, one-sided intervention — when net purchases of foreign currency totalling at least 2% of the country’s GDP over a 12 month period are conducted repeatedly, in at least six out of 12 months.
- **Consequence:** Inclusion in the list does not subject to any kind of penalty and sanctions but it deteriorates the global financial image of the country in the financial markets in terms of foreign exchange policies including undervaluation of currencies to gain export advantages.
- **India’s Status:**
 - India, Taiwan and Thailand have been added to seven others already in the watch list.
 - Others on the list include China, Japan, Korea, Germany, Italy, Singapore and Malaysia.
 - As per the report by the US Treasury, India and Singapore had intervened in the foreign exchange market in a “sustained, asymmetric manner” but did not meet other requirements to warrant designation as manipulators.
 - India, which has for several years maintained a “significant” bilateral goods trade surplus with the US, crossed the USD 20 billion mark, according to the latest report.

Note:

- Bilateral goods trade surplus totalled USD 22 billion in the first four quarters through June 2020.
- Further, **India's net purchases of foreign exchange** accelerated notably in the second half of 2019. Following sales during the initial onset of the pandemic, India sustained net purchases for much of the first half of 2020, which pushed net purchases of foreign exchange to USD 64 billion—or 2.4% of GDP—over the four quarters through June 2020.
- According to some experts, the tag could **lead to the rupee appreciating** as the Reserve Bank of India (RBI) might step back from its dollar purchases.
 - **Currency appreciation** is an increase in the value of one currency in relation to another currency. A currency is **strong** if it is becoming more valuable relative to another country's currency.

WHAT IT MEANS...

For India | There will be **pressure on RBI to cut down intervention**, allow the rupee to appreciate

In terms of restrictions | The tag **does not involve any** kind of trade restrictions

For economy | A stronger rupee would **partially offset the impact of rising oil prices** on imports

For RBI | The central bank can **increase diversification of its reserves** to include non-dollar assets



RBI Working Paper on Asset Quality and Credit Channel

Why in News

Recently, a **Reserve Bank of India (RBI)** working paper on 'Asset quality and credit channel of monetary policy transmission in India' has been released.

- **RBI introduced the RBI Working Papers series in March 2011.**

Key Points

➤ Credit Channel:

- The credit channel of monetary policy transmission is **robust in India** and **operates through changes in lending**.
- There are **two ways** the credit channel can work: by affecting overall bank lending (the **bank lending channel**) and by affecting the allocation of loans (the **balance sheet channel**).

➤ Credit Deceleration:

- Credit growth deceleration in India **since 2013** is explained by **asset quality stress** in the banking system, **slowdown** in economic activity and **moderation in bank deposits**.
- The **growth rate in credit offtake** has steeply **declined to 5.8% in November 2020**, as against **14.2% in 2013**.
- A **wide divergence** has also been observed in **credit growth of public and private sector banks**.

➤ Potential Determinants of Credit Growth:

○ Asset Quality Stress:

- Since the **early 2010s**, asset quality of banks in India **has worsened gradually**, impacting their profitability.
- Asset quality of Scheduled Commercial Banks (SCBs) is **measured as a ratio of gross non-performing assets (GNPAs) to gross advances**.

○ Nominal GDP Growth:

- **Higher growth** in nominal Gross Domestic Product (GDP) **increases the demand for credit**.
- The decline in credit growth post 2013 was mainly due to a surge in bad loans, accentuated by a slowdown in GDP.
- Nominal GDP is an assessment of economic production in an economy that includes current prices in its calculation.
 - Nominal **differs from real GDP** in that it includes changes in prices due to inflation, which reflects the rate of price increases in an economy.

○ Deposit Growth:

- Deposit growth has **remained highly volatile**, especially from the second half of 2015.
- It needs to be noted that a **financial institution with a greater availability of funds** will be in a better position to provide **more credit to borrowers**.

○ Investment Growth:

- The **surge in investment growth** has also added to the **slowdown in credit growth**.
- To the extent **banks invest in securities**, **lower resources** would be available for **extending as credit**.

Note:

- In India, **investments by banks** include both investment in government securities as prescribed under the statutory obligations (**statutory liquidity ratio** or SLR) and voluntary investments held in government securities and bonds/debentures/shares of corporate bodies.
- **Interest Rates:**
 - **Higher** the interest rates, **higher will be the cost of borrowing** and hence, **lower would be the demand for credit**.
- **Other Bank-specific Characteristics:**
 - Such as the **size of the bank and capitalisation** (an estimation of the value of a business).
- **Measures Taken:**
 - The **accommodative stance of monetary policy** and **reduction in the policy repo rate** (starting from 2019) helped cushion the credit deceleration.
 - An accommodative stance means **a central bank will cut rates to inject money** into the financial system whenever needed.
 - **Repo Rate**, or repurchase rate, is the key monetary policy rate of interest at which the central bank or the Reserve Bank of India (RBI) lends short term money to banks.
 - Everything from interest rates on loans to returns on deposits is influenced by this crucial rate set by the RBI.
 - The central bank **has slashed policy repo rate by 350 basis points to 4%** now from 7.50% in March 2013.
 - After the Asset Quality Review (AQR), since 2015, many hidden bad loans had surfaced, forcing the government to enact the **Insolvency and Bankruptcy Code (IBC)** for resolution of bad loans.
 - Despite the lockdown, layoffs and closure of many units in the wake of the **Covid-19 pandemic**, **gross NPAs of 31 banks witnessed a decline of 5.25%** in absolute terms as the **RBI allowed relaxation in the computation of bad loans** and announced a **loan restructuring scheme**.

Loan Pact with NDB

Why in News

Government has recently announced a **1 billion USD loan pact** with **New Development Bank** (NDB) to boost rural employment and infrastructure.

Key Points

- The government and the **New Development Bank** (NDB) signed a loan agreement worth **1 billion USD** to help India's **economic recovery from Covid-19** by supporting:
 - **Spending** on rural infrastructure related to natural resource management (NRM) and
 - **Rural employment generation** under **MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme)**.

New Development Bank

- It is a multilateral development bank **jointly founded by the BRICS countries** (Brazil, Russia, India, China and South Africa) at the 6th **BRICS** Summit in Fortaleza, Brazil in 2014.
- It was formed to support infrastructure and sustainable development efforts in BRICS and other underserved, emerging economies for faster development through innovation and cutting-edge technology.
- It's ownership structure is unique, as the **BRICS countries have an equal share and no country has any veto power**.
- It is headquartered at **Shanghai, China**.
- In 2018, the NDB received **observer status** in the **United Nations** General Assembly, establishing a firm basis for active and fruitful cooperation with the United Nations.
- All members of the United Nations could be members of the Bank, however **the share of the BRICS nations can never be less than 55% of voting power**.
- The loan has a tenor of **30 years, including a 5-year grace period**.
- The funding comes under **NDB's Policy on fast-track emergency response to Covid-19**.
- The loan would specially help **migrant workers** who have returned from urban areas and have lost their livelihoods due to the pandemic.
- Economic activity slowed down post lockdowns to contain the **spread of virus**, resulting in loss of employment and income of workers especially those employed in the informal sector, including rural areas.
- The **World Bank** has also approved four projects worth over 800 million USD for strengthening **India's social protection architecture**, promoting nutrition-

Note:

supportive agriculture for tribal households in **Chhattisgarh**, enhancing quality education in **Nagaland** and improving safety and performance of existing **dams** across states.

Bitcoins

Why in News

Recently, **Bitcoin**, the **cryptocurrency**, has crossed **20,000 US dollars** in value.

- Bitcoin's price has **always been volatile**, and there is **no clear explanation** for its current rise.
- **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.

Key Points

- **Introduction:**
 - Bitcoin is a type of digital currency that enables instant payments to anyone. Bitcoin was **introduced in 2009**. Bitcoin is based on an open-source protocol and is **not issued by any central authority**.
- **History:**
 - The origin of Bitcoin is unclear, as is who founded it. A person, or a group of people, who went by the identity of **Satoshi Nakamoto** are said to have conceptualised an accounting system in the aftermath of the **2008 financial crisis**.
- **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**.
 - It gives central banks **greater control over the economy** because they can control how much money is printed.
 - Most modern paper currencies, such as the **US dollar and Indian Rupee are fiat currencies**.

➤ Record of Bitcoins (Blockchain):

- All the transactions ever made are contained in a **publicly available, open ledger**, although in an anonymous and an encrypted form called a **blockchain**.
 - Transactions can be denominated in **sub-units of a Bitcoin**.
 - **Satoshi** is the smallest fraction of a Bitcoin.
- **Blockchain** is a **shared, immutable ledger** that facilitates the **process of recording transactions and tracking assets in a business network**.
 - An asset can be **tangible** (a house, car, cash, land) or **intangible** (intellectual property, patents, copyrights, branding).
- Virtually **anything of value can be tracked and traded on a blockchain network**, reducing risk and cutting costs for all involved.
 - A simple **analogy for understanding blockchain technology** is a **Google Doc**.
 - When one creates a document and shares it with a group of people, the document is distributed instead of copied or transferred.
 - This creates a **decentralized distribution chain that gives everyone access to the document at the same time**.
- It needs to be noted that **other usage and applications of Blockchain technology** have emerged in the last few years.
 - The government of Andhra Pradesh and Telangana have **put the land records on the blockchain technology** owing to its easy traceability feature.
 - Election Commission (EC) officials are exploring the **potential of using blockchain technology to enable remote voting**.
- **Acquiring Bitcoins:**
 - One **can either mine a new Bitcoin** if they have the computing capacity, **purchase them via exchanges**, or **acquire them in over-the-counter, person-to-person transactions**.
 - **Miners** are the people who validate a Bitcoin transaction and secure the network with their hardware.
 - The Bitcoin protocol is designed in such a way that new Bitcoins are created at a fixed rate.
 - No developer has the power to manipulate the system to increase their profits.

Note:

- One unique aspect of Bitcoin is that only **21 million units** will ever be created.

- A **Bitcoin exchange** functions like a bank where a person **buys and sells Bitcoins with traditional currency**. Depending on the demand and supply, the **price of a Bitcoin keeps fluctuating**.

➤ **Bitcoin Regulation:**

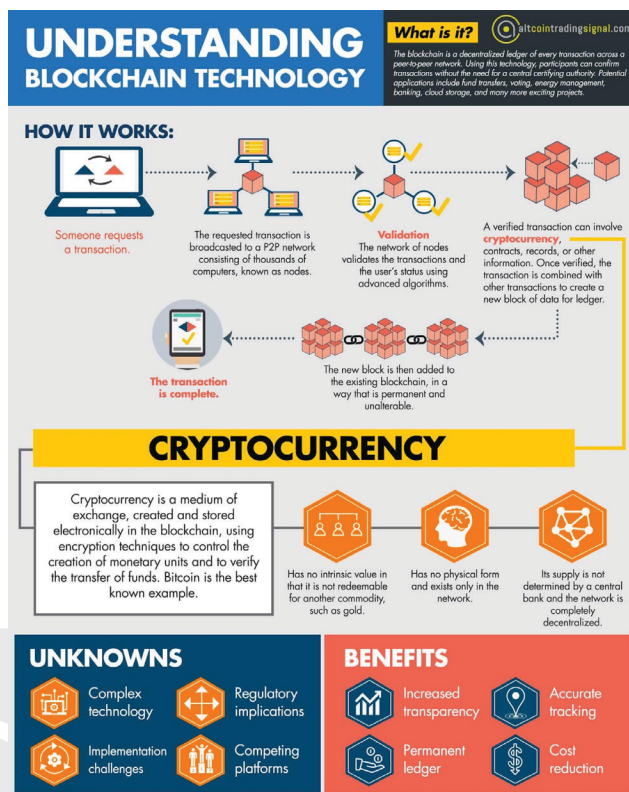
- The supply of bitcoins is **regulated by software and the agreement of users of the system** and cannot be manipulated by any government, bank, organisation or individual.
- Bitcoin was intended to come across as a **global decentralised currency**, any central authority regulating it would effectively defeat that purpose.
- It needs to be noted that multiple governments across the world are **investing in developing Central Bank Digital Currencies (CBDCs)**, which are digital versions of national currencies.

➤ **Legitimacy of Bitcoins (or cryptocurrencies) in India:**

- In the **2018-19 budget speech**, the Finance Minister announced that the **government does not consider cryptocurrencies as legal tender** and will take all measures to eliminate their use in financing illegitimate activities or as a part of the payment system.
- In **April 2018**, **Reserve Bank of India (RBI)** notified that entities regulated by it should not deal in virtual currencies or provide services for facilitating any person or entity in dealing with or settling virtual currencies.
 - However, the **Supreme Court struck down the ban** on trading of virtual currencies (VC) in India, which was imposed by the RBI.
- The **Supreme Court** has held that **cryptocurrencies** are in the nature of commodities and hence they **can not be banned**.

➤ **Possible Reasons for the Rise in the Value of the Bitcoin:**

- Increased acceptance during the **pandemic**.
- Global **legitimacy from large players** like payments firm PayPal, and Indian lenders like State Bank of India, ICICI Bank, HDFC Bank and Yes Bank.
- Some **pension funds** and **insurance funds** are **investing in Bitcoins**.



Fraud Cases in Public Sector Banks

Why in News

Public Sector Banks (PSBs) have been **reviewing loan accounts** and are expected to report more fraud cases in accounts which have earlier been put under their **Early Warning Signals (EWS)** system.

- The **Reserve Bank of India (RBI)** developed the EWS framework as it noticed a delay in the detection and reporting of banking frauds.
- The **objective of the EWS framework** is to prevent and detect these offences, to provide timely reporting to regulators and to initiate staff accountability proceedings thereby ensuring that the operations and risk-taking ability of the banks is not impacted.

Key Points

- **Data Analysis:**
 - The **total cases of frauds** (involving ₹1 lakh and above) reported by banks and financial institutions

Note:

shot up by 28% by volume and 159% by value during 2019-20 despite the Reserve Bank of India (RBI) tightening the supervision and vigilance.

- While there were 6,799 frauds involving ₹71,543 crore as of March 2019, the number of frauds jumped to 8,707 involving Rs.1,85,644 crore, says the **RBI's Annual Report 2020**.
- **PSBs topped the fraud table** with 4,413 cases involving ₹1,48,400 crore.
- **Private banks** reported 3,066 frauds involving ₹34,211 crore.

➤ **Current Scenario:**

- Banks are **going through their accounts which were put on alert earlier**. They will **report fraud** wherever such instances are found in case of large accounts, and **make 100% provision against them**.
 - These are being reviewed thoroughly to **ensure that banks have adequately provisioned balance sheets**.
- The RBI also indicated that the **frauds registered during 2019-20 actually occurred in the loans sanctioned during 2010-2014**.
 - The **average lag between the date of occurrence of frauds and their detection** by banks and financial institutions was 24 months during 2019-20.
 - In **large frauds**, of ₹100 crore and above, the **average lag was 63 months**.
- After **forensic audit and investigation** into these accounts, **diversions and other issues** were found.
 - RBI defines **diversion of funds** as utilisation of short-term working capital funds for long-term purposes not in conformity with the terms of sanction; deploying borrowed funds for purposes/activities other than those for which the loan was sanctioned; and transferring borrowed funds to subsidiaries/group companies or other corporates by whatever modalities.

➤ **Reasons:**

- Weak implementation of EWS by banks.
- Non-detection of EWS during internal audits.
 - **Internal audits evaluate a company's internal controls, including its corporate governance and accounting processes**.
 - They ensure compliance with laws and regulations, help maintain accurate and timely financial reporting and data collection.

- **Non-cooperation of borrowers during forensic audits**.

- **Forensic audit** is an **examination and evaluation of a firm's or individual's financial records** to derive evidence that can be used in a court of law or legal proceeding.

- Inconclusive audit reports.
- Lack of decision making in Joint Lenders' meetings account.

➤ **Overcoming Measures:**

- The EWS mechanism is getting **revamped alongside the strengthening of the concurrent audit function**, with **timely and conclusive forensic audits** of borrower accounts under scrutiny.
- RBI is engaged in **interlinking various databases and information systems** to improve fraud monitoring and detection.
- Online reporting of frauds by the **Non-Banking Financial Companies** (NBFC) and the **Central Fraud Registry** (CFR) portal of **Scheduled Commercial Banks** (SCBs) augmented with new features, are **likely to be operational by January 2021**.
 - RBI has put in place CFR, which is a **searchable database to help banks detect instances of fraud** by borrowers early on.

India to Become Fifth Largest Economy in 2025

Why in News

A recent report published by the **Centre for Economics and Business Research** (CBER) has predicted that India will again overtake the UK to become the **fifth largest economy in 2025** and race to the **third spot by 2030**.

- CBER is a **UK based company** that gives **independent economic forecasts** for public and private firms.

Key Points

➤ **Findings:**

- The Indian economy will **expand by 9% in 2021 and by 7% in 2022**.
- This growth trajectory will see India become the world's **third largest economy by 2030**,

Note:

overtaking the UK in 2025, Germany in 2027 and Japan in 2030.

- **China in 2028 will overtake the USA** to become the **world's biggest economy, five years earlier** than previously estimated due to the contrasting recoveries of the two countries from the **Covid-19 pandemic**.
- **Japan** would remain the world's **third-biggest economy, until the early 2030s** when it would be overtaken by India, pushing **Germany down from fourth to fifth**.
- **Current Scenario:**
 - Previously, **India had overtaken the UK in 2019 to become the fifth largest economy** in the world but has been relegated to **6th spot in 2020**.
 - The five economies ahead are the **United States, China, Japan, Germany and the United Kingdom** respectively.
 - India's economy had been losing momentum **even ahead of the shock delivered** by the **Covid-19** crisis.
 - The **rate of Gross Domestic Product (GDP) growth sank to** a more than ten-year low of **4.2% in 2019**.
 - Slowing growth has been a consequence of a confluence of **factors** including **fragility in the banking system, adjustment to reforms (Demonetisation, GST)** and a **deceleration of global trade**.
 - **GDP in Q2 (April-June) 2020 was 23.9%** below its 2019 level, indicating that nearly a quarter of the country's economic activity was wiped out by the drying up of **global demand** and the **collapse of domestic demand** that accompanied the series of strict **national lockdowns**.
- **Suggestions:**
 - The **pace of the economic recovery** will be indistinguishably **linked to the development of the Covid-19 pandemic**, both domestically and internationally.
 - As the manufacturer of the majority of the world's vaccines and with a 42-year-old vaccination programme (**Universal Immunisation Programme**) that targets 55 million people each year, **India is better placed than many other developing countries to roll out the vaccines successfully** and efficiently next year.

- In the medium to long term, **reforms such as the 2016 demonetisation** and more recently the **controversial efforts to liberalise the agricultural sector** can deliver economic benefits.
 - However, with the majority of the Indian workforce employed in the agricultural sector, the **reform process requires a delicate and gradual approach** that **balances** the need for **longer-term efficiency gains** with the need to **support incomes in the short-term**.
- The **infrastructure bottlenecks** that exist in India mean that investment in this area has the potential to unlock significant productivity gains.
 - Therefore, the outlook for the economy going forwards will be closely related to the **government's approach to infrastructure spending**.

PCA Ruling on Retrospective Taxation

Why in News

Recently, the **Permanent Court of Arbitration (PCA)** has ruled that the **Indian government was wrong in applying a retrospective tax on energy giant Cairn Plc**.

- The verdict comes barely three months after **India lost arbitration to Vodafone Plc** over the retrospective tax legislation amendment.

Key Points

- **Background:**
 - In **2006-07**, **Cairn UK transferred shares** of Cairn India Holdings to Cairn India on which **Income Tax authorities** slapped a **tax demand of ₹24,500 crore** as it contended that Cairn UK had made capital gains.
 - Owing to different interpretations of capital gains, the **company refused to pay the tax**, which prompted **cases being filed at the Income Tax Appellate Tribunal (ITAT)** and the **Delhi High Court**.
 - In **2012**, Indian government's budget **retrospectively amended the tax code**, giving itself the power to go after **mergers and acquisitions (M&A) deals all the way back to 1962** if the underlying asset was in India.

Note:

- In **2015**, Cairn Energy Plc **commenced international arbitration** proceedings against the Indian government.

Retrospective Taxation

- It **allows a country to pass a rule on taxing certain products, items or services** and deals and charge companies from a time behind the date on which the law is passed.
- Countries **use this route to correct any anomalies in their taxation policies** that have, in the past, allowed companies to take advantage of such loopholes.
- Retrospective Taxation **hurts companies that had knowingly or unknowingly interpreted the tax rules differently**.
- Apart from India, many countries including **the USA, the UK, the Netherlands, Canada, Belgium, Australia and Italy** have retrospectively taxed companies.

Permanent Court of Arbitration

- It was **established in 1899** and is **headquartered in The Hague, Netherlands**.
- **Purpose:** It is an **intergovernmental organization** dedicated to serve the international community in the field of dispute resolution and to facilitate arbitration and other forms of dispute resolution between States.
- It has a **three-part organizational structure** consisting of:
 - **Administrative Council**- to oversee its policies and budgets,
 - **Members of the Court**- a panel of independent potential arbitrators, and
 - **International Bureau**- its Secretariat, headed by the Secretary-General.
- **Funds:** It has a **Financial Assistance Fund** which aims at helping developing countries meet part of the costs involved in international arbitration or other means of dispute settlement offered by the PCA.
- **PCA Ruling:**
 - The **Indian government must pay roughly ₹8,000 crore in damages** to Cairn.
 - Cairn Tax Issue was **not just a tax-related issue but an investment-related dispute**, and therefore the issue comes under its jurisdiction.
 - The Indian government's **retrospective demand was in breach of the guarantee of fair and equitable treatment**.

- The Centre had **failed to uphold its obligations under the UK-India Bilateral Investment Treaty** and international laws in seeking tax payments from the company for its business reorganisation in the country.

India's Stand:

- The government **will study the award and all its aspects** carefully in consultation with its counsel.
- After such consultations, the government will **consider all options and make a decision on the further course of action**, including legal remedies before appropriate fora.

Suggestions

- An investment-friendly business environment would increase economic activity and help raise more revenue over time for the government. It is to be hoped that tax officials' desire to deny their defeat and to try and hang on to legally untenable revenue finds an unsympathetic hearing from politicians in the finance ministry.
- India needs to craft meaningful and clear dispute resolution mechanisms in cross-border transactions to prevent the disputes from going to international courts, and save the cost and time expenditure. Improving the arbitration ecosystem will have a positive impact on the **ease of doing business**.

Digital Lending

Why in News

Recently, the **Reserve Bank of India (RBI)** cautioned individuals and small businesses against falling prey to the growing number of **unauthorised digital lending platforms and mobile applications** on promises of getting loans in quick and hassle-free manner.

Key Points

- **Digital Lending:**
 - It consists of lending **through web platforms or mobile apps**, by taking advantage of technology for authentication and credit assessment.
 - **India's digital lending market has seen a significant rise** over the years. The digital lending value increased from USD 33 billion in FY15 to USD 150 billion in FY20 and is expected to hit the USD 350-billion mark by FY23.

Note:

- Banks have launched their **own independent digital lending platforms** to tap in the digital lending market by leveraging existing capabilities in traditional lending.
- **Significance of Digital Lending:**
 - **Financial Inclusion:** It helps in meeting the huge unmet credit need, particularly in the **microenterprise and low-income consumer segment in India.**
 - **Reduce Borrowing from informal channels :** It helps in reducing informal borrowings as it **simplifies the process of borrowing.**
 - Indians continue to borrow from family and friends, and moneylenders, sometimes at unreasonably high interest rates, primarily because these loans are more flexible and convenient.
 - **Time Saving:** It decreases time spent on working loan applications in-branch. Digital lending platforms have also been known to **cut overhead costs by 30-50%.**
- **Issues with Digital Lending Platforms:**
 - Growing number of **unauthorised digital lending platforms** and mobile applications as:
 - They charge **excessive rates of interest and additional hidden charges.**
 - They adopt **unacceptable and high-handed recovery** methods.
 - They **misuse agreements** to access data on **mobile phones** of borrowers.
- **Steps Taken by RBI:**
 - **Non-Banking Financial Companies (NBFCs)** and **banks** need to **state the names of online platforms** they are working with.
 - RBI has also **mandated that digital lending platforms which are used on behalf of Banks and NBFCs should disclose the name of the Bank(s) or NBFC(s)** upfront to the customers.
 - The central bank had also **asked lending apps to issue a sanction letter to the borrower on the letter head of the bank/ NBFC concerned** before the execution of the loan agreement.
 - Legitimate public **lending activities can be undertaken by banks, NBFCs registered with the RBI** and other entities who are regulated by state governments under statutory provisions.

➤ India's Digital Ecosystem:

- Banks have partnered with **Fintechs** to serve their customers better.
- Government of India has taken many initiatives such as **Unified Payments Interface, Jan dhan yojana , Aadhaar enabled Payment System**, etc. to promote digital environment in the country especially after demonetization.

Suggestions

- India is on the verge of a **digital lending revolution** and **making sure that this lending is done responsibly** can ensure the fruits of this revolution are realized.
- As several players have access to sensitive consumer data, **there must be clear guidelines around, for example, the type of data that can be held, the length of time data can be held for, and restrictions on the use of data.**
- Digital lenders should proactively develop and commit to a **code of conduct that outlines the principles of integrity, transparency and consumer protection**, with clear standards of disclosure and grievance redressal.
- An **agency can be created that tracks all digital loans and consumer/lender credit history.**
- Apart from establishing technological safeguards, **educating and training customers to spread awareness about digital lending is also important.**

GST Revenue Gap: NIPFP

Why in News

According to the **National Institute for Public Finance and Policy (NIPFP)**, the revenue shortfall for the **Goods and Services Tax (GST) compensation** payable to States in 2020-21 could be about ₹1.95 lakh crore in the best-case scenario.

- The amount is **significantly lower than ₹2.35 lakh crore estimated by the GST Council.**

Key Points

- **GST Compensation:**
 - According to the **Goods and Services Tax (Compensation to States) Act 2017**, states will receive GST compensation during the transition period of GST (first five years of GST introduction),

Note:

if **State GST** (SGST collection including receipts of Integrated GST settlement on account of SGST) **revenue falls short of the projected revenue collection.**

- The projection of state revenue in GST is **based on the revenue that is subsumed in GST** (also known as revenue under protection in GST) **in the base year 2015-16 and 14% annual growth rate** (year-on-year) in the revenue under protection during the GST transition period.
- GST compensation is paid using funds specifically collected as **compensation cess.**
 - Compensation cess is **levied on products considered to be sin or luxury goods.**
- **Findings of NIPFP:**
 - The **revenue gap in state GST collection** is expected to **vary between 2.85 lakh crore to ₹3.27 lakh crore.** **GST compensation cess collection in 2020-21** is expected to **vary between ₹82,242 crore to ₹90,386 crore.**
 - Therefore, **revenue to the tune of ₹1.95 lakh to ₹2.45 lakh crore** may require in providing full GST compensation to states in 2020-21.
 - **Maximum revenue gaps** are expected for **Goa, Punjab, Chhattisgarh, Kerala and Chhattisgarh.**
- **Step Taken by the Government:**
 - Recently, the **Ministry of Finance** has released the eighth weekly instalment of ₹6,000 crore to the states to meet the GST compensation shortfall, taking the total amount released so far under this window to ₹48,000 crore.
 - The **Central government borrows the funds under a special window and passes it on to states** in a back-to-back loan arrangement.
 - The interest rate for the latest loan instalment was 4.19%, while the average rate for the entire borrowing so far is at 4.7%.

National Institute for Public Finance and Policy

- **Formation:** NIPFP is an **autonomous body** set up jointly by the Ministry of Finance, the erstwhile Planning Commission, and several state governments. It was founded in 1976. It is registered under the Societies Registration Act, 1860.

- **Functions:**
 - It undertakes research, policy advocacy and capacity building in areas related to public economics.
 - One of the major mandates of the institute is to **assist the Central, State and Local governments** in formulating and reforming public policies by providing an analytical base.
- **Funding:** It receives **an annual grant from the Ministry of Finance and various State governments.** However, it **maintains an independent non-government character.**
- **Governing Body:**
 - It includes the Revenue Secretary, Economic Affairs Secretary and the Chief Economic Advisor from the **Ministry of Finance** and representatives from **NITI Aayog, Reserve Bank of India (RBI)** and three state governments.
 - It also includes three distinguished economists, members of sponsoring agencies and other invitees.
 - It is **involved in appointing the Chairman and the Director.**
 - The usual **tenure of a chairman is four years**, which can be extended.
 - At present, **Dr Urjit Patel**, former Governor of the RBI, is the Chairman.
- **Location:** New Delhi.

New Rule in GST

Why in News

Recently, the **Central Board of Indirect Taxes and Customs (CBIC)** has made it mandatory for **businesses with a monthly turnover of more than ₹50 lakh** to pay **at least 1% of their Goods and Services Tax (GST) liability in cash.**

- It will be effective from **1st January 2021.**

Key Points

- The new rule **restricts use of Input Tax Credit (ITC)** for discharging GST liability to 99%.
- The CBIC has booked **about 12,000 cases of ITC fraud** and arrested 365 persons in such cases so far.

Note:

- The move will **curb tax evasion by way of fake invoicing**.
- ITC is provided to set off tax paid on the purchase of raw materials, consumables, goods or services that were used in the manufacturing of goods or services. This **helps in avoiding double taxation and the cascading effect of taxes**.
- **However, this restriction will not apply in cases:**
 - Where the managing director or any partner has paid more than ₹1 lakh as income tax, or
 - The registered person has received a refund amount of more than ₹1 lakh in the preceding financial year on account of unutilised input tax credit.
- **This comes to only 0.37% of the total businesses registered in the GST system.**
 - Of the total GST taxpayer base of 1.2 crore, only about 4 lakh have monthly supply value greater than ₹50 lakh.
 - Of these, only about 1.5 lakh pay less than 1% of their GST liability in cash and when exclusions in the rule are applied, around 1.05 lakh taxpayers get further excluded.
 - Thus, the rule would **apply only to 40,000 to 45,000 taxpayers**.
- **Criticism:**
 - It is feared that the mandatory cash payment will **adversely affect small businesses, increase their working capital requirement and make GST a more complex indirect tax system**.

Central Board of Indirect Taxes and Customs

- It is a part of the **Department of Revenue** under the Ministry of Finance.
- The **Central Board of Excise and Customs (CBEC)** was **renamed as the CBIC in 2018** after the roll out of the GST.
- It deals with the tasks of formulation of policy concerning levy and collection of customs, central excise duties, Central GST (CGST) and Integrated GST (IGST).
- **Government's Stand:**
 - The Department of Revenue has held that these **fears are misplaced** and **"only risky or suspicious dealers and fly-by-night operators" will be affected** by the move.

- Government has arrived at this rule **after detailed deliberations** in the **GST Council's Law Committee** to identify and control only fraudsters involved in fake invoices and input tax credits.

100% FDI in DTH Services

Why in News

The **Ministry of Information and Broadcasting (I&B)** has recently approved revised guidelines for **Direct-to-Home (DTH)** broadcasting services, allowing **100% Foreign Direct Investment (FDI)** as well as increasing the licence period to **20 years**.

- DTH Broadcasting Service refers to the **distribution of multi channel TV programmes** in Ku Band by using a **satellite system by providing TV signals direct to subscribers' premises**.
- Ku-band is a portion of the **electromagnetic spectrum**. It is best known for its use in **satellite broadcast communications**. Ku-band falls in the middle in terms of frequency, utilizing the approximate range of **12-18 GHz of radiofrequency**.

Key Points

- **License Duration:**
 - The licenses will be issued for a **period of 20 years**, compared to **10 years** at present and will be renewed for a **10-year period**.
- **License Fee:**
 - The license fee has been revised **from 10% of Gross Revenue (GR) to 8% of Adjusted Gross Revenue (AGR)**, which will be calculated by deduction of GST from GR.
 - AGR is the **usage and licensing fee** that telecom operators are charged by the **Department of Telecommunications (DoT)**.
 - It is divided into **spectrum usage charges and licensing fees**.
 - Further, broadcasting firms will have to pay the license fee on a **quarterly basis**, rather than the **annual basis as of now**.
- **Infrastructure Sharing:** The government has also allowed DTH operators to **share infrastructure**.
 - Distributors of TV channels will be permitted to share the common hardware for their **Subscriber Management System (SMS)** etc.
 - SMS is a server important for cable TV digital systems.

Note:

➤ **Benefits:**

- The revised guidelines may also enable DTH service providers **to invest for more coverage** leading to **increased operations and higher growth** and thereby enhanced and regular payment.
- Sharing of infrastructure by the DTH operators, may bring in **more efficient use of scarce satellite resources** and reduce the costs borne by the consumers.

➤ **Background:**

- The **Ministry of Commerce and Industry** had previously spoken of 100% FDI in the DTH sector, but because of the guidelines issued by the I&B Ministry, the FDI was limited to 49%.
- Recently, the **Telecom Regulatory Authority of India (TRAI)** has also recommended that all **Set Top Boxes (STBs) in the country must be made interoperable** in order to promote overall sector growth.
- The reduction in the licence fee was recommended by TRAI in 2014.
- The DTH operators have been arguing that, since TRAI issued the **New Tariff Order (NTO)** for television in 2019, they have become mere carriers of channels and bouquets, with no pricing powers for these.
- The **rise of Over The Top (OTT) services** also seems to have impacted the DTH subscription numbers. With high competition in the segment, OTT service providers give consumers a combination of both attractive content and subscription packages.

Foreign Direct Investment

- It is an investment from a party in **one country into a business or corporation in another country** with the intention of establishing a **lasting interest**.
- Lasting interest **differentiates FDI from foreign portfolio investments**, where investors passively hold securities from a foreign country.
- Foreign direct investment can be made by expanding one's business into a foreign country or by becoming the owner of a company in another country.

DTH v/s OTT➤ **Decline in DTH Services:**

- According to a recent report by the TRAI, the average active subscriber base of **DTH services**

has seen a sharp decline of **25%** coming down to 54.26 million in April to June quarter in comparison to 72.44 million in January to March of 2020.

- A recent survey suggests that **almost 55% Indians prefer OTT over DTH services** and almost **87% of Indians use mobile** to watch videos these days.

➤ **Convenience of OTT:**

- The convenience and ease with which OTT platforms can be watched makes it more attractive. Mobile phones can be carried anywhere and the user can watch anything of the choice anywhere, anytime given the data availability.
- OTT platforms seem a better option in comparison to high tariffs and the tedious process of choosing the channel combinations in the DTH.

➤ **Economical Data Services:**

- The cost of data services have gone down drastically in the last few years which has raised the number of average users including the rural areas as well.
- Because of the **availability of internet and ease of carrying** smartphones, tablets or laptops, there is consumption irrespective of relatively higher charges for OTT platforms like Netflix and Amazon Prime which shows people's demand and interest in them.

DTH	OTT
<ul style="list-style-type: none"> • DTH is an acronym for 'Direct To Home' service. It is a digital satellite service that provides television viewing services directly to subscribers through satellite transmission anywhere in the country. • The signals are digital by nature and are received directly from the satellite. 	<ul style="list-style-type: none"> • An 'Over The Top' media service is any online content provider that offers streaming media as a standalone product. The term is commonly applied to video-on-demand platforms, but also refers to audio streaming, messaging services, or internet-based voice calling solutions. • It needs access to the internet and smartphones, tablets, laptop/computers.

Special Zero Coupon Recapitalisation Bonds

Why in News

Recently, the government has used **financial innovation** to **recapitalise Punjab and Sind Bank** by issuing the bank ₹5,500 crore worth **Special Zero Coupon Recapitalisation Bonds**.

- Punjab and Sind Bank is a **Government of India undertaking**.

Note:

Key Points

➤ Bank Recapitalisation:

- It means **infusing more capital in state-run banks** so that they meet the capital adequacy norms.
 - Indian public sector banks are emphasized to maintain a **Capital Adequacy Ratio (CAR) of 12%**.
 - CAR is the ratio of a bank's capital in relation to its risk weighted assets and current liabilities.
- The government, **using different instruments**, infuses capital into banks facing shortage of capital. As the government is the biggest shareholder in public sector banks, the responsibility of bolstering banks' capital reserves lies with the government.
- The government infuses capital in banks **by either buying new shares or by issuing bonds**.

➤ Reason for Recapitalisation:

- In compliance with **Reserve Bank of India (RBI)** guidelines which are based on **Basel norms** requiring banks to maintain certain amounts of capital reserves.

➤ Recapitalisation Bonds:

- The government **issues bonds which are subscribed by banks**. The money collected by the government goes to banks in the form of equity capital as the government increases its share of equity holding, thereby shoring up banks' capital reserves.
- The money invested by banks in recapitalisation bonds is classified as an investment which earns them an interest. This **helps the government in maintaining its fiscal deficit target** as no money directly goes out from its coffers.

➤ Special Zero Coupon Recapitalisation Bonds:

- These are special types of bonds **issued by the Central government specifically to a particular institution**.
- **Only those** banks, whosoever is **specified**, can invest in them, **nobody else**.
- It is **not tradable**, it is **not transferable**. It is **limited** only to a **specific bank**, and it is for a **specified period**.
- There is **no coupon**, it is zero coupon, it is **issued at par** and will be **paid at the end of the specified period**.

- **Coupon** is the interest which the Investor gets on a bond.

- It is held at the **Held-To-Maturity (HTM)** category of the bank as per the RBI guidelines.

- **HTM securities** are purchased to be **owned until maturity**.

- These are instruments which are a **variation of the recapitalisation bonds** but effectively meet the same purpose, and these are **issued in conformity with the RBI guidelines**.

- **Financial Innovation:** As the issuance of these special bonds will **not affect the fiscal deficit** while at the same time **provide much needed equity capital to the bank**.

➤ Difference Between Normal Zero Coupon Bonds and Special Zero Coupon Bonds:

○ Zero Coupon Bonds:

- **Zero-Coupon Bond**, also known as the **pure discount bond or deep discount bond**, is purchased at a discounted price and **does not pay any coupons or periodic interests to the fundholders**.
- The **difference** between the **purchase price** of a zero coupon bond and the **par value at the time of maturity**, indicates the **investor's return**.
- The Zero Coupon bonds **generally** come with a **time horizon of 10 to 15 years**.

- **Difference: Special Zero Coupon Bonds** are being **issued at par**, there is no interest however **Normal Zero Coupon Bonds** are **issued at discount** therefore they technically are interest bearing.

Bond

- It is a **fixed income instrument** that represents a loan made by an investor to a borrower. In simpler words, a bond acts as a **contract between the investor and the borrower**.
- Mostly companies and governments issue bonds and investors buy those bonds as a **savings and security option**.
- These bonds **have a maturity date** and when once that is attained, the issuing company needs to pay back the amount to the investor along with a part of the profit.

Note:

100th Kisan Rail

Why in News

Recently, the Prime Minister has flagged off the 100th "Kisan Rail" service from Sangola in Solapur district of Maharashtra to Shalimar in West Bengal via video-conferencing.

Key Points

- In August 2020, the first 'Kisan Rail' dedicated to agriculture and farmers was begun to connect farmers and markets across the country.
- The government has invested crores of rupees in modernising the country's supply chain, of which the Kisan Rail service is a new experiment.
 - Announcements regarding modernising agriculture were made in the Budget 2020-21 which had envisaged the Kisan Rail service and the Krishi Udaan scheme.
 - Krishi Udaan was launched by the Ministry of Civil Aviation on international and national routes to assist farmers in transporting agricultural products so that it improves their value realisation.
 - Under the scheme, financial incentives in terms of concessions from the Centre, state governments and airport operators are extended to selected airlines to encourage operations from unserved and underserved airports, and keep airfares affordable.
- Despite the challenges posed by the Covid-19 pandemic, the 'Kisan Rail' network has expanded in the past four months.
- Earlier, the Kisan Rail was being run only once a week but now, due to increased demand, it is being run thrice a week currently.
- Significance:
 - This experiment will prove especially beneficent for the country's 80% small and marginal farmers.
 - The service would transform the economics of Indian agriculture while strengthening the country's cold supply chain.
 - The lack of cold storage facilities had often resulted in losses for farmers.

- Indian farmers can now transport their produce to far-flung places within the country as well as gain access to international markets.
- According to the government, the Kisan Rail service along with the amended farm laws would help protect farmers against the fluctuations in demand and supply.

Dedicated Freight Corridor

Why in News

Recently, the Prime Minister of India has inaugurated a 351-km section of the Eastern Dedicated Freight Corridor (EDFC) and an Operation Control Centre (OCC) between Khurja and Bhaupur in Uttar Pradesh.

- EDFC is a 1,839-km project billed as the largest rail infrastructure being built in independent India and has been in the making since 2006.

Key Points

- 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.
 - DFC involves the seamless integration of better infrastructure and state of the art technology.
- DFC consists of two arms:
 - Eastern Dedicated Freight Corridor (EDFC):
 - It starts at Sahnewal (Ludhiana) in Punjab and ends at Dankuni in West Bengal.
 - The EDFC route has coal mines, thermal power plants and industrial cities. Feeder routes are also being made for these.
 - The EDFC route covers Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand and West Bengal
 - The World Bank is funding a majority of the EDFC.
 - The 351-km-long 'New Bhaupur-New Khurja section' will decongest the existing Kanpur-Delhi main line and double the speed of freight trains from 25 kmph to 75 kmph.
 - Western Dedicated Freight Corridor (WDFC):
 - The other arm is the around 1,500-km WDFC from Dadri in Uttar Pradesh to Jawaharlal Nehru Port Trust in Mumbai, touching all major ports along the way.

Note:

- The WDFC covers Haryana, Rajasthan, Gujarat, Maharashtra and Uttar Pradesh.
- It is **being funded by the Japan International Cooperation Agency**.
- **Connecting Link for Eastern and Western Arm:** It is under construction between **Dadri and Khurja**.
- The **industrial corridor of Delhi-Mumbai and Amritsar-Kolkata** are also being developed around both these DFCs.



➤ **Significance:**

- **Increased Capacity:**
 - The DFC shall reform the transportation sector and will **create more capacity on trunk routes of Indian Railways** as goods trains shall be able

to run freely on DFC without any restrictions imposed by movement of passenger trains.

○ **Decongestion:**

- Around **70% of the freight trains** currently running on the Indian Railway network are slated to **shift to the freight corridors**, leaving the **paths open for more passenger trains**.

○ **Business Generation:**

- Tracks on DFC are designed to carry heavier loads than most of Indian Railways. DFC will get track access charge from the parent Indian Railways, and also **generate its own freight business**.

○ **Punctuality :**

- The new section means on the Indian Railway main line, **more passenger trains** can be pumped in and those trains can, in turn, achieve **better punctuality**.

➤ **Benefits:**

- Logistics costs will be reduced.
- Higher energy efficiency.
- Faster movement of goods.
- It is environmentally friendly.
- It will provide **ease of doing business**.
- Helps in generating more employment.

Dedicated Freight Corridor Corporation of India Ltd.

- DFCCIL under the **Ministry of Railways** is a **special purpose vehicle** tasked with **planning and completion of 3,306 kms of DFCs**.
- It is **headquartered in New Delhi** and is a **Public Sector Undertaking (PSU)**.
- It engages in the **planning and development, deployment of monetary resources, building, upkeep, and the operation** of the DFCs.

Note:

International Relations

Highlights

- CAATSA Sanctions on Turkey
- India-Bangladesh Virtual Summit
- India-Vietnam Virtual Summit
- Indian Diaspora in the United Kingdom
- Post-Brexit Trade Deal
- Mission Sagar-III
- India-Qatar
- India-Sri Lanka Joint Working Group on Fisheries

CAATSA Sanctions on Turkey

Why in News

Recently, the USA administration has imposed **sanctions on Turkey** for its purchase of the **S-400 missile system** from Russia.

- The issue of **sanctions under Section 231** of the **Countering America's Adversaries Through Sanctions Act (CAATSA)** for purchase of Russian arms is of **particular interest to India**, which is also in the process of buying the **S-400 from Russia**.

Key Points

- **Background:**
 - Previously, the USA had made it clear to Turkey that its purchase of the S-400 system would **endanger the security of the USA**.
 - The procurement will provide substantial funds to **Russia's defence sector**, as well as Russian access to the **Turkish armed forces** and defence industry.
 - Turkey moved ahead with the procurement and testing of the S-400, despite the availability of alternatives such as **NATO-interoperable systems** (such as **USA's Patriot** missile defence system), to meet its defence requirements.
 - Turkey is a **North Atlantic Treaty Organization (NATO) ally** of the USA.

- In 2019, the USA had removed Turkey from its **F-35 jet program** over concerns that **sensitive information could be accessed by Russia** if Turkey used Russian systems along with the USA jets.

➤ S-400 Missile System:

- The **S-400 Triumf air defence system** integrates a **multifunction radar, autonomous detection and targeting systems, anti-aircraft missile systems, launchers, and command and control centre**. It is capable of firing **three types of missiles** to create a layered defence.
- It is a mobile, **surface-to-air missile system (SAM)**. It is the most dangerous operationally deployed **modern long-range (MLR) SAM** in the world, considered **much ahead of** the USA-developed **Terminal High Altitude Area Defense (THAAD)** system, which is an **anti-ballistic missile defence system**.

➤ Sanctions on Turkey:

- Imposed on Turkey's main defence procurement agency, the **Presidency of Defense Industries (SSB)**.
- These comprise a ban on granting **specific USA export licenses and authorisations for any goods or technology**.
- Also, a **ban on loans or credits by USA** financial institutions totalling more than **USD 10 million in any 12-month period**.
- A **ban on USA Export-Import Bank** assistance for exports and mandated USA opposition to loans by international financial organisations to SSB.

Note:

Concerns for India

- India, inked ₹39,000 crore deal to buy the **S-400 Triumf long-range surface-to-air missile** systems from **Almaz-Antey Corporation of Russia** in October 2018 and the **delivery is expected to start in 2021**.
- Apart from the S-400 air defence system, **Project 1135.6 frigates** and **Ka226T helicopters** will also be affected. Also, it will impact joint ventures, like **Indo-Russian Aviation Ltd, Multi-Role Transport Aircraft Ltd and Brahmos Aerospace**. It will also affect India's purchase of **spare parts, components, raw materials and other assistance**.
 - As per the **Stockholm International Peace Research Institute (SIPRI) Arms Transfer Database**, during the period 2010-17, Russia was the **top arms supplier** to India.
- **Russian Origin Indian Weapon:**
 - Nuclear submarine **INS Chakra**, the Kilo-class conventional submarine, the supersonic **Brahmos cruise missile**, the **MiG 21/27/29** and **Su-30 MKI** fighters, **IL-76/78** transport planes, **T-72** and **T-90 tanks**, Mi-series of helicopters, and **Vikramaditya** aircraft carrier.
- The CAATSA contains 12 types of sanctions. Of these, **10 will have very little or no impact** on India's current relations with either Russia or the USA. There are only **two sanctions** that may impact either **India-Russia relations or India-USA relations**.
 - The **first** of these, which is likely to have an impact on India-Russia relations, is the **"Prohibition of Banking transactions"**.
 - This would mean difficulties for India in making payments in USD to Russia for the purchase of the S-400 systems.
 - The **second sanction** will have greater consequences for India-USA relations.
 - This is the **"export sanction"** which has the potential to completely derail the **India-USA Strategic and Defence partnership**.
 - It will deny the license for, and export of, any items controlled by the USA to the sanctioned person such as all dual-use high technology goods and technology, defence related items, nuclear-related items and all other items from the USA requiring prior review and approval of the Government.

- It will effectively **bar India from buying any major defence equipment from the USA**, putting a stop to any defence and strategic partnership between India and the USA. The **Major Defence Partner (MDP)** designation would lose its relevance in that context.

Countering America's Adversaries Through Sanctions Act

- Enacted in **2017**, it is a USA federal law that **imposed sanctions on Iran, North Korea and Russia**.
- Includes sanctions **against countries that engage in significant transactions with Russia's defence and intelligence sectors**.
- The Act empowers the President of the USA to impose at least five of the 12 listed sanctions on persons engaged in a **significant transaction with Russian defence and intelligence sectors**.
- Its ultimate goal is to prevent **revenue from flowing to the Russian Government**.

India-Bangladesh Virtual Summit

Why in News

Recently, **India and Bangladesh** have held a **virtual summit** covering comprehensive discussions on all aspects of bilateral relations and exchanged views on regional and international issues.

- Bangladesh also invited India for the celebration of **50th anniversary of Bangladesh's Independence** in **1971** and **50 years of India-Bangladesh diplomatic relations**, to be held in **March 2021**.



Note:

Key Points

➤ Signing of Bilateral Documents and Inauguration of Projects:

- Sealed **seven agreements** to expand cooperation in **diverse areas** viz. hydrocarbons, elephant conservation, sanitation, and agriculture, and **restored a cross-border rail link** which was in operation till 1965.
- Inaugurated a **digital exhibition on Mahatma Gandhi and Bangladesh's founder, Sheikh Mujibur Rehman**.

➤ Cooperation in Health Sector:

- Reiterating the highest priority India attaches to Bangladesh under India's **Neighbourhood First** policy, India assured that **vaccines for Covid-19 would be made available to Bangladesh** as and when produced in India.
- India also **offered collaboration in therapeutics and partnership in vaccine production**.
- Bangladesh **appreciated India's conducting capacity building courses** for medical professionals in Bangla language.

➤ Cultural Cooperation:

- Jointly unveiled a **commemorative postal stamp issued by the Government of India on the occasion of birth centenary of Bangabandhu Sheikh Mujibur Rahman**.
- India thanked Bangladesh for **issuing a stamp in honour of Mahatma Gandhi** on the occasion of his **150th birth anniversary** celebrations.
- Bangladesh requested India to consider **Bangladesh's proposal to name** the historic road from Mujib Nagar to Nodia on Bangladesh-India border as "**Shadhinota Shorok**" commemorating the historic significance of the road during Bangladesh's Liberation War.

➤ Border Management and Security Cooperation:

- Agreed to hold an early meeting of the **Joint Boundary Conference** to prepare a new set of strip maps with a view to finalizing the delineation of the boundaries.
- It was agreed to carry out necessary work to convert the **International Boundary along Kuhsiyara river** into a fixed boundary.
 - Kuhsiyara river (known as **Barak river in India**) is **one of the transboundary rivers** between India-Bangladesh.

- Bangladesh reiterated the request for **1.3 km Innocent Passage through river route along River Padma** (main **channel of Ganga in Bangladesh**) near Rajshahi district (Bangladesh). India assured to consider the request.
- Stressed on the full implementation of the ongoing **Coordinated Border Management Plan**.
- Expressed satisfaction on **efforts against smuggling of arms, narcotics and fake currency and to prevent trafficking**, particularly of women and children.
- Directed officials to expeditiously conclude the Memorandum of Understanding (MoU) in the area of **disaster management cooperation** as both countries are prone to frequent natural disasters.
- Bangladesh requested for early implementation of **India's commitment to remove remaining restrictions on entry/exit from land ports in India** for Bangladeshis travelling on valid documents in a phased manner.

➤ Trade Partnership for Growth:

- Bangladesh has appreciated the **Duty-Free and Quota Free access** given to Bangladeshi exports to India under **South Asian Free Trade Area (SAFTA)** since 2011.
- Emphasized on addressing issues of **non-tariff barriers and trade facilitation** including port restrictions, procedural bottlenecks and quarantine restrictions so that both countries can take full advantage of SAFTA flexibility.
- Directed the officials to expeditiously conclude the ongoing joint study on the **prospects of entering into a bilateral Comprehensive Economic Partnership Agreement (CEPA)**.
- Welcomed the **first meeting of the India-Bangladesh Textile Industry Forum** and directed the officials to conclude the ongoing negotiations on various MoUs on increased linkages and collaboration in the textile sector.

➤ Connectivity for Prosperity:

- Jointly inaugurated the **newly restored railway link between Haldibari** (India) and **Chilahati** (Bangladesh) and noted that this rail link will further strengthen trade and people to people ties between the two sides.
- Welcomed the signing of the second addendum to the **Protocol on Inland Water Transit and Trade (PIWTT)**.

Note:

- Agreed to an early operationalization of the **Bangladesh-Bhutan-India-Nepal (BBIN) initiative Motor Vehicles Agreement** through the expeditious signing of the Enabling MoU for Bangladesh, India and Nepal to commence the movement of goods and passengers, with provision for Bhutan to join at a later date.
- Bangladesh expressed keen interest in the ongoing **India Myanmar Thailand trilateral highway project** and sought the support of India for enabling Bangladesh to connect with this project.
- Satisfaction on commencement of a temporary **Air Travel Bubble** to facilitate the urgent requirements of travellers on both sides.
- **Cooperation in Water Resources, Power and Energy:**
 - Bangladesh highlighted the need for **early signing of an interim agreement for sharing of the Teesta waters**, as agreed upon by both the governments in 2011.
 - Underscored the need for early conclusion of **Framework of Interim Agreement** on sharing of waters of six joint rivers, namely, Manu, Muhuri, Khowai, Gumti, Dharla and Dudhkumar.
 - Recalled the positive contribution of the **Joint Rivers Commission (JRC)** and looked forward to the next round of Secretarial level JRC meeting at the earliest.
 - Agreed to expedite implementation of projects including **India-Bangladesh Friendship Pipeline, Maitree Super Thermal Power Project** as well as other projects.
 - Welcomed the signing of the **Framework of Understanding on Cooperation in the Hydrocarbon Sector** which would further augment energy linkages by streamlining investments, technology transfer, joint studies, training and promoting **hydrocarbon** connectivity.
 - Agreed to enhance cooperation in energy efficiency and clean energy, including in **biofuels**.
- **Forcibly Displaced Persons from the Rakhine State of Myanmar (Rohingya):**
 - India appreciated the generosity of Bangladesh in **sheltering and providing humanitarian assistance** to the 1.1 million forcibly displaced **persons from the Rakhine State of Myanmar**, in the **Rohingya Crisis**.

➤ **Partners in the Region and the World:**

- India thanked Bangladesh for supporting India in its election to the **United Nations Security Council**.
- Both countries agreed to continue working together towards achieving early reforms of the UN Security Council, combating **climate change**, attainment of the **Sustainable Development Goals (SDGs)** and protection of the rights of migrants.
- Highlighted that regional organisations such as the **South Asian Association for Regional Cooperation (SAARC)** and the **Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)** have an important role to play.
- Bangladesh thanked India for convening the **SAARC leaders Video Conference in March 2020** and for creation of the **SAARC Emergency Response Fund** to counter effects of the global pandemic in the South Asian region.
- Bangladesh will assume chairmanship of the **Indian Ocean Rim Association (IORA)** in **2021** and requested the support of India for working towards greater maritime safety and security.
- Bangladesh appreciated the work of the **New Development Bank** and thanked India for inviting Bangladesh to join the institution.

India-Vietnam Virtual Summit

Why in News

Recently, **India and Vietnam** have signed **seven pacts** during their virtual summit, in areas such as defence, petrochemicals, and nuclear energy, and have agreed to **intensify their development partnership** that will enable achievement of **Sustainable Development Goals (SDGs)**, and develop capabilities to address **climate change**.

Key Points

- **Memorandums of Understanding (MoU)/Agreements:**
 - Agreements covered diverse areas such as **IT, UN peacekeeping and cancer research**.
 - **USD 5 million Indian Grant Assistance for Army Software Park** at National Telecommunications University, Nha Trang, Vietnam.

Note:

- Committed to promoting bilateral cooperation between the “regulatory bodies in the **fields of radiation protection and nuclear safety.**”



➤ Defence and Security:

- It is an important factor of stability in the **Indo-Pacific region.**
- Step up **military-to-military exchanges, training and capacity building programmes** across the **three services and coast guards** and intensify defence industry collaboration **building on India's defence credit lines extended to Vietnam.**
 - **VINBAX** is the **military exercise** between the armies of India and Vietnam.
- **More close engagement through institutionalized dialogue mechanisms** in dealing with traditional and non-traditional security threats in **cyber and maritime domains, terrorism, natural disasters, health security, water security, transnational crimes** etc, including through enhanced legal and judicial cooperation.
 - One such example is the successful implementation of the **High-Speed Guard Boat (HSGB) Manufacturing Project** for Vietnam Border Guard Command under the **US dollar 100 million Defence Line of Credit extended by the Government of India** to Vietnam.

➤ Terrorism:

- Step up joint efforts in building a strong consensus for early adoption of the **Comprehensive Convention on International Terrorism (CCIT).**

➤ South China Sea:

- Reaffirmed the importance of maintaining **peace, stability, security and freedom of navigation and overflight in the South China Sea**, while pursuing

the peaceful resolution of disputes in accordance with international law, particularly the **1982 United Nations Convention on the Law of the Sea (UNCLOS).**

- Called for the full and effective implementation of the **Declaration on the Conduct of Parties in the South China Sea (DOC)** in its entirety.

➤ Cooperation at Various Forums:

- Strengthen multilateral and regional cooperation, including in the **United Nations, ASEAN-led mechanisms** and **Mekong sub-regional cooperation.**
- Foster practical cooperation between **ASEAN** and India in the key areas and in line with the objectives and principles as stated in the **ASEAN Outlook on Indo-Pacific (AOIP)** and India's **Indo-Pacific Oceans Initiative (IPOI).**
- Actively **promote reformed multilateralism to make international organizations**, including the **UN Security Council**, more representative, contemporary and capable of dealing with current challenges.

➤ Management of Covid-19 Pandemic:

- Encourage experience-sharing and cooperation in the management of **Covid-19 pandemic**, support **on-line training of health professionals**, forge institutional cooperation in **vaccine development**, promote open supply chains, facilitate essential cross-border movement of people, and maintain close contact and coordination in multilateral bodies like the **World Health Organization (WHO).**
- **Cooperation in the Post Pandemic Era:**
 - Acknowledging the new challenges as well as opportunities brought upon by Covid-19 pandemic, the two sides will work towards reliable, efficient and **resilient supply chains**, and will promote **human-centric globalization.**

➤ Economic Cooperation:

- New horizons for partnership created by India's **goal to become a USD 5 trillion economy by 2024** and Vietnam's **ambition to become a high-income economy by 2045** will be fully explored for all segments of the economy, including **blue economy, MSMEs and farming communities of the two countries.**
- India and Vietnam share a **comprehensive strategic partnership.** One great example of economic

Note:

cooperation is the completion of the **Development Projects with Indian 'Grant-in-Aid' Assistance** of USD 1.5 million for the benefit of the local community in Vietnam's Ninh Thuan province.

➤ **Cooperation on Climate Change:**

- Partner in **new and renewable energy resources**, energy conservation and other climate-resilient technologies.
- India advocated that Vietnam's possible future participation in the **International Solar Alliance** would bring new opportunities for cooperation in large scale deployment of solar energy.
- India looks forward to Vietnam's joining the **Coalition for Disaster Resilient Infrastructure** in the near future.
- They agreed to expand the **Mekong-Ganga Quick Impact Projects**.

➤ **Cultural Cooperation and Links:**

- Actively cooperate to publish an **Encyclopedia of India-Vietnam Cultural and Civilizational Relations** to mark the 50th anniversary of India-Vietnam diplomatic relations in 2022.
- Promote understanding and research of shared cultural and civilizational heritage, including **Buddhist and Cham cultures, traditions and ancient scriptures**.
 - The traditional systems of medicine like **Ayurveda** and **Vietnam-Traditional Medicine** share many common threads of rich knowledge of health.
 - **Yoga** has emerged as a symbol of peace and harmony and shared pursuit of spiritual wellbeing and happiness.
- **New Development Partnership projects** in heritage conservation in Vietnam (F-block of Temple at My Son; Dong Duong Buddhist Monastery in Quang Nam and Nhan Cham Tower in Phu Yen) will be materialised.

➤ **People-to-People Exchange:**

- By **increasing direct flights**, providing ease of travelling through **simplified visa procedures** and facilitating **tourism**.

➤ **Education and Institutional Cooperation:**

- **Strengthen and institutionalize linkages** such as Parliamentary exchanges; relations between the Indian States and Vietnamese Provinces; exchanges between social organisations and youth organizations; etc.

- Facilitate cooperation between respective agencies on the two sides to promote contents related to India-Vietnam relations and **their historical links in each other's school textbooks**.

Indian Diaspora in the United Kingdom

Why in News

Recently, British Foreign Secretary has stated that "**India's politics**" is, in some sense, "**Britain's politics**" because of the **Indian diaspora in the United Kingdom (UK)**.

- The statement came as he discussed the situation arising out of the **farmers' protests** with the External Affairs Minister of India.
- British Prime Minister would be the **chief guest at Republic Day celebrations in January 2021**.
- Indian Prime Minister has been invited for **G7** summit in 2021.

Key Points

➤ **Indian Diaspora:**

- Indian Diaspora is a generic term used for addressing **people who have migrated from the territories that are currently within the borders of India**.
- The term "**diaspora**" is derived from the **Greek word diaspeirein**, which means "**dispersion**". Over time, the term evolved, and now loosely refers to **any person/s belonging to a particular country with a common origin or culture, but residing outside their homeland for various reasons**.

➤ **Indian Diaspora in the UK:**

○ **Historical Background:**

- The **incorporation of the British Empire in India** can be linked to the existence of modern Indian Diaspora all over the world.
- Dating back to the nineteenth century, **Indian indentured labor was taken over to the British colonies** in different parts of the world.

○ **Population:**

- The Indian Diaspora in the UK is **one of the largest ethnic minority communities in the country**, with the 2011 census recording approximately **1.5 million people of Indian origin in the UK** equating to almost **1.8%** of Britain's population.

Note:

- **Economy:** Indians contribute **6% of the UK's GDP**.
 - **Indian diaspora-owned companies** with a combined revenue of 36.84 billion pounds **employ over 1,74,000 people** and pay over 1 billion pounds in Corporation Tax.
- **Culture:**
 - There has been a gradual mainstreaming of Indian culture and absorption of Indian cuisine, cinema, languages, religion, philosophy, performing arts, etc.
 - **The Nehru Centre** is the cultural wing of the High Commission of India in the UK which was **established in 1992**.
 - 2017 was celebrated as the **India-UK year of Culture** to mark the 70th anniversary of Indian independence.
- **Politics:**
 - In 2019, the British House of Commons had **15 members of parliament of Indian origin**.

Significance of Indian Diaspora

- **Huge Number:**
 - According to **Global Migration Report 2020**, India continues to be the **largest country of origin of international migrants** with a **17.5 million-strong diaspora** across the world, and it received the **highest remittance of USD 78.6 billion** (this amounts to a whopping **3.4% of India's GDP**) from Indians living abroad.
 - It contributes by way of **remittances, investment, lobbying for India, promoting Indian culture abroad and for building a good image of India** by their intelligence and industry.
- **Economic Front:**
 - Indian diaspora is **one of the richest minorities in many developed countries**, this helps them to lobby for favourable terms regarding India's interests.
 - The migration of less-skilled labour (especially to West Asia) has also helped in **bringing down disguised unemployment in India**.
 - In general, migrants' **remittances have positive systemic effects on the balance of payments**.
 - Remittances of USD 70-80 billion help to bridge a wider trade deficit.

- By weaving a web of cross-national networks, the migrant workers facilitated the **flow of tacit information, commercial and business ideas, and technologies into India**.

➤ **Political Front:**

- Many people of Indian origin hold **top political positions in many countries**, in the USA itself, they are now a significant part of Republicans and Democrats, as well as the government.
 - India's diaspora played an important role in the **India-U.S. nuclear deal**.
- Indian diaspora is not just a part of **India's soft power**, but a fully transferable **political vote bank** as well.

Related Government Initiatives

➤ **Pravasi Bharatiya Divas (PBD):**

- It is celebrated once in every two years to strengthen the engagement of the overseas Indian community with the Government of India and reconnect them with their roots.

➤ **UMANG International App:**

- It would help all Indian international students, NRIs, and Indian tourists abroad to avail themselves of the services of the government of India anytime they want.
- The app would be helpful in creating awareness about India in the world through 'Indian Culture' services available on it.

➤ **VAJRA Faculty Scheme:**

- The Scheme enables NRIs and the overseas scientific community to participate and contribute to research and development in India.

➤ **Know India Programme:**

- It is a three-week orientation programme for diaspora youth conducted with a view to promote awareness on different facets of life in India and the progress made by the country in various fields.

Shaheen-IX

Why in News

China has recently asked India to "**objectively**" view the on-going **month-long military exercises** taking place between the **Chinese** and **Pakistani** air forces, amid **increasing tensions** with India.

Note:

Key Points

- “Shaheen-IX” or Eagle-IX exercise, is an exercise between the **Pakistan Air Force** and the **People’s Liberation Army Air Force**.
- Shaheen-IX is the **ninth in the series** which is conducted **each year in both countries on alternate basis**.
- The first such drill was held in **Pakistan in 2011**.
- **Other exercises between Pakistan and china:**
 - **Sea Guardians:** Bilateral Naval exercise
- **India China exercises:**
 - **Hand In Hand:** Bilateral Army exercise

Post-Brexit Trade Deal

Why in News

Recently, the **UK and the European Union (EU)** have published the full text of the **post-Brexit trade agreement** aimed at governing their relationship when the **UK definitively leaves the bloc’s single market on 31st December 2020**.

Key Points

- The document lays out **detail on trade, law enforcement, and dispute settlement among other arrangements**. Despite the complexity of the document, which includes explanatory notes and side **agreements on nuclear cooperation and the exchange of classified information**, both sides have indicated they will rush through the adoption.
- The deal ensures the two sides can **continue to trade in goods without tariffs or quotas** but despite the breakthrough, **key aspects of the future relationship** between the 27-nation bloc and its former member remain uncertain.
- The two sides held extensive **negotiations on three key issues:**
 - **Level Playing Field:** It essentially means that in order to trade with the EU’s single market, the **UK will have to follow the same rules and regulations** to ensure that it **does not have an unfair advantage** over other EU businesses.
 - **Rules of Governance:** These will **dictate how any deal is enforced** as well as the **penalties** that will be imposed if one party violates the terms of a mutually-approved agreement.

- **Fishing Rights:** The agreement gives **free access to EU fleets to fish in UK waters**, including up to six miles off the shoreline **for a five-year transition period**. At the end of the transition, everything will return to normal arrangements and the UK will have full control over its waters.

- However, the **UK’s fishing industry has expressed disappointment** on the agreement on fishing rights.

- Despite the deal, there are still **unanswered questions about huge areas**, including **security cooperation and access to the EU market for Britain’s huge financial services sector**.
- The **European Commission (EC)** has proposed the **agreement be applied on a provisional basis until 28th February 2021**.
 - EC is the **executive branch of the EU**, which brings together the executives of all 27 member states.
- The **European Parliament** will be asked for its **consent to the deal in 2021** and **for the process to be concluded**, the EC must adopt the decision.

Opportunities for India

- India should **aggressively pursue free trade agreements (FTAs)** separately with both the EU and the UK.
- Although it is **premature to assess the gains for India** from the agreement, India can **explore opportunities in service sectors like IT, architecture, research and development and engineering** in both the markets as the EU-UK pact does not cover the services sector.
 - Indian competitors like **Vietnam have greater duty advantage** in sectors like apparel and marine goods.
- India had a lot of **contentious issues while negotiating FTA with the EU**. However, after Brexit, the **UK could have a different stand on those issues** and so India should continue pursuing FTA talks.
- The **Apparel Export Promotion Council (AEPC)** held that India-UK FTA would help in removing the customs duty disadvantages faced by domestic players in Britain.
 - However, **Federation of Indian Export Organisations (FIEO)** highlighted that there are no specific customs duty benefits for domestic goods from this agreement.
- The **bilateral trade** between India and the UK **dipped to USD 15.5 billion in 2019-20** from USD 16.9 billion in 2018-19.

Note:

Mission Sagar-III

Why in News

Recently, the **Indian Naval Ship (INS) Kiltan** has arrived at **Sihanoukville Port, Cambodia** as part of ongoing **Mission Sagar-III**.

Key Points

- The ship will deliver 15 tons of **Humanitarian Assistance and Disaster Relief (HADR)** stores for the flood-affected people of Cambodia, which will be handed over to Cambodia's **National Disaster Management Committee (NDMC)**.
 - Earlier, the ship delivered 15 Tons of HADR stores for the flood-affected people of Central **Vietnam**.

INS Kiltan

- It is a **Kamorta-class anti-submarine warfare corvette**.
- It is part of the **Indian Navy's Eastern Naval Command**, based at **Visakhapatnam**.
- INS Kiltan, along with the **INS Sahyadri**, is the latest, **indigenously designed and built multi-role ships** of the Indian Navy.
 - The two ships are equipped with a versatile array of weapons and sensors and can carry multi-role helicopters representing the 'coming of age' of India's warship building capabilities.

Security and Growth for All in the Region

- Launched in **2015**, it is India's strategic vision for the **Indian Ocean Region (IOR)**.
- Through SAGAR, India seeks to **deepen economic and security cooperation** with its maritime neighbours and assist in building its maritime security capabilities.
- Further, India seeks to safeguard its national interests and ensure the IOR to become inclusive, collaborative and respect international law.
- The key relevance of SAGAR emerges when seen in conjunction with India's other policies impacting the maritime domain like **Act East Policy**, **Project Sagarmala**, **Project Mausam**, focus on **Blue Economy** etc.

- Mission Sagar-III is part of **India's HADR assistance to friendly foreign countries** during the ongoing **Covid-19 pandemic**.
 - In **November 2020**, as part of **Mission Sagar-II**, **INS Airavat** delivered food aid to Sudan, South Sudan, Djibouti and Eritrea.

- Launched in May 2020, '**Mission Sagar**' was India's initiative to deliver Covid-19 related assistance to the countries in the Indian Ocean Littoral states. The countries included were Maldives, Mauritius, Madagascar, Comoros and Seychelles.

- This Mission is being undertaken in accordance with the **Security And Growth for All in the Region (SAGAR)** vision and reiterates India's position as a dependable partner, and the **Indian Navy as the Preferred Security Partner and First Responder**.
- The Mission also highlights the **importance accorded to the Association of Southeast Asian Nations (ASEAN)** countries and further **strengthens the existing bonds**.
 - **Cambodia and Vietnam** are member nations of the **ASEAN**.

India-Qatar

Why in News

Recently, India's External Affairs Minister **met the top leaders of Qatar** and discussed **strengthening the economic and security cooperation** between the two countries.

- The visit is **part of India's ongoing outreach to West Asia**, which the country sees as part of its extended neighbourhood.
- Qatar is a member of the **Gulf Cooperation Council**.



Key Points

- **India and Qatar** agreed to maintain **regular consultations and coordination** on all issues of mutual interest at multilateral fora.
 - Issues of mutual interest include energy, power, petrochemicals, investments, infrastructure, development, project exports and education.

Note:

- Discussed ways to strengthen the multifaceted bilateral relationship in areas such as **energy, trade, investment, food processing, healthcare, education, culture, defence and security.**
 - Bilateral trade was worth **USD 10.95 billion in 2019-20.**
- India **thanked** Qatar for **taking care** of people from the **Indian community** during the **Covid-19 pandemic.**
 - India and Qatar have maintained close **high-level contacts** during the pandemic.
- India appreciated **Qatari Businessmen Association's** commitment for business partnerships with India and briefed them about new opportunities flowing from **Atmanirbhar Bharat.**
- Qatar's leader **appreciated the contribution of the Indian community** in Qatar and recalled his visits to India.
- **Recent Developments:**
 - Both the countries have decided to set up a **special task force** to facilitate investments by the **Qatar Investment Authority**, part of India's ongoing outreach to key West Asian states to overcome the economic impact of the **Covid-19 pandemic.**
 - The two sides have agreed on **institutionalising measures to promote and protect the rights of workers**, including settling labour issues and facilitating the movement of people between the two countries in a safe and secure manner.

India-Qatar Relation

- **Economic Relations:**
 - **Trade volume:**
 - The last few years witnessed a palpable **decline in the trade volume** between the two countries due to the **decline in the rates of gas and oil** in the international market.
 - **India** is considered to be the **fourth largest export destination for the State of Qatar.**
 - Both India and Qatar also have a **good relation in the banking sector.**
 - **Exports:**
 - **Qatar's key exports to India** include LNG, LPG, chemicals and petrochemicals, plastics, and aluminium articles.
 - **India's key exports to Qatar** include cereals, copper articles, iron and steel articles, vegetables,

plastic products, construction material, textiles & garments, etc.

- **Cooperation in the Field of Energy:**
 - Qatar is the **largest supplier of liquefied natural gas (LNG) to India.**
 - India **imports around 70%** of its needs for the **natural gas from Qatar.**
- **Defence:**
 - India's defence cooperation with Qatar has so far been limited to training, participation in each other's conferences/events and visits by ships of Indian Navy and Coast Guard.
 - **Za'ir-Al-Bahr** (Roar of the Sea) is the **naval exercise** between Indian and Qatar Navy.
- **Cultural Relations:**
 - **Cultural exchange:**
 - There is a regular flow of Indian artists performing in Qatar at events organised by community organizations affiliated to the **Indian Cultural Centre (ICC).**
 - **ICC** is an **apex body of associations of the Indian community** functioning under the aegis of Embassy of India, Doha, and private sponsors.
 - **Yoga:**
 - India **appreciated** Qatar's support, as a co-sponsor, to its Resolution at the **United Nations General Assembly**, adopted unanimously with a record 177 co-sponsors, declaring **21 June as the International Day of Yoga (IDY).**
 - **Education:**
 - There are **14 Indian schools in Qatar**, offering CBSE curricula to over 30,000 students, most of whom are the children of Indian nationals working in Qatar.
- **Indian Community:**
 - Indian community is the **largest expatriate group** in Qatar which is estimated to be around **700 million people.**
 - They are making their **contribution in different sectors.** Indians are **highly respected** in Qatar for their **sincerity, hard work, technical expertise and law-abiding nature.**
 - Indians are **employed in almost every local establishment, governmental or private, in various capacities.**

Note:

○ **Remittances:**

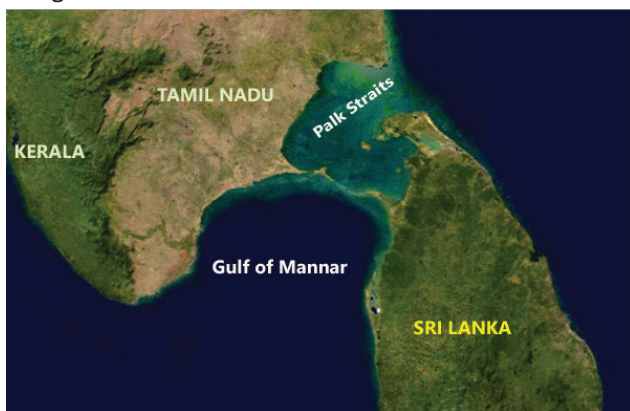
- The remittances which the Indian expatriate community in Qatar send to India are **estimated to be around 750 million dollar per annum.**

India-Sri Lanka Joint Working Group on Fisheries

Why in News

Recently, the Fourth Meeting of the **India-Sri Lanka Joint Working Group (JWG) on Fisheries** was held through virtual mode.

- **Palk Strait** and **Gulf of Mannar** are major fishing grounds for both the countries.



Key Points

➤ **The Fourth Meeting:**

- The two sides exchanged views on the status of **cooperation between Navy & Coast Guard** of both countries in patrolling, existing hotline between the Coast Guards and related operational matters, cooperation in **preservation of marine environment as well as the schedule for the fifth meeting of the JWG.**
- Sri Lanka also sought a **safe passage for Sri Lankan fishermen to enter the Arabian Sea.**
- **India's Stand:**
 - India **reiterated the need for releasing all fishing boats in Sri Lankan custody** in line with the **commitment given by the Sri Lankan President** during his state visit to India in **November 2019.**
 - India highlighted the initiatives being taken under the new **Pradhan Mantri Matsya Sampada Yojana** and **other schemes** of Government of

India and governments of Tamil Nadu and Puducherry to diversify and reduce fishing pressure in the Palk Bay.

- India also informed of **initiatives taken for diversification into deep-sea fishing** especially by fishermen of the Palk Bay area, **infrastructure** created to **facilitate deep-sea fishing**, promotion of **alternative livelihood** through **seaweed cultivation**, **mariculture** and **varieties of aquaculture** activities.

- **Mariculture** is the **farming of marine organisms** for food and other products such as pharmaceuticals, food additives, jewelry etc.

➤ **Joint Working Group:**

- India and Sri Lanka agreed to set up a **Joint Working Group (JWG) on Fisheries** in **2016** between the **Ministry of Agriculture and Farmers Welfare of India** and **Ministry of Fisheries and Aquatic Resources Development of Sri Lanka** as the **mechanism to help find a permanent solution** to the fishermen issue.
- The JWG also **includes representatives from the Ministries of Foreign Affairs, the Coast Guards and Navies** of both countries.
- **Terms of reference of the JWG:**
 - Expediting the transition towards **ending the practice of bottom trawling** at the earliest.
 - **Bottom trawling** is an industrial fishing method where a large net with heavy weights is dragged across the seafloor.
 - When the weighted nets and trawl doors are dragged along the seafloor, **everything in their path is disturbed or destroyed**, including seagrasses, coral reefs or rock gardens where fish hide from predators.
 - Framing **procedures for returning fishermen** arrested by both sides.
 - Possibility of **joint patrolling.**

Fisherman Issue

- Given the **proximity of the territorial waters of both countries**, especially in the **Palk Strait** and the **Gulf of Mannar**, incidents of straying of fishermen are common.
- **Indian boats** have been fishing in the troubled waters for centuries and **had a free run of the Bay of**

Note:

Bengal, Palk Bay and the Gulf of Mannar until 1974 and 1976 when treaties were signed between the two countries to demarcate **International Maritime Boundary Line (IMBL)**.

- However, **the treaties failed** to factor in the hardship of thousands of traditional fishermen who were forced to restrict themselves to a meagre area in their fishing forays.
- The **small islet of Katchatheevu**, hitherto used by the Indian fishermen for sorting their catch and drying their nets, **fell on the other side of the IMBL**.



- Fishermen often risk their lives and cross the IMBL rather than return empty-handed, but the **Sri Lankan Navy** is on alert, and **have either arrested or destroyed fishing nets and vessels of those who have crossed the line**.

➤ **Steps Taken:**

- The IMBL is **imaginary**, but it was **geo-tagged** and is visible to the fishermen, due to **Global Positioning System (GPS) sets**.
- **Deep Sea Fishing Scheme:**
 - Promoted as an **alternative to bottom trawling by Tamil Nadu's fishermen** off the Palk Bay, the scheme envisages the provision of 2,000 deep sea fishing boats in place of trawlers by 2019-20, which will be the third and final year of implementation of the scheme.
 - It aims to put an end to disputes arising between the two countries.
 - It has been taken up under the **'Blue Revolution'** scheme.

Note:

Social Issues

Highlights

- India's Stabilising Population: NFHS-5
- Data Related to Women: NFHS-5
- World Minorities Rights Day
- Data on Police Organisations: BPRD

India's Stabilising Population: NFHS-5

Why in News

Recent data from **National Family Health Survey-5 (NFHS-5)** shows that India's **population is stabilising** as the **Total Fertility Rate (TFR)** is on **decline**.

Key Points

➤ Background:

- During **NFHS-3 and 4**, conducted between **2005 and 2016**, there was a **decline in the use of modern methods of contraception** (oral pills, condoms, intrauterine devices) **across 12 of 22 States and UTs**.
 - While, in **NFHS-5**, **11 of 12 States** where there was a slump earlier, saw an increase in their use.

➤ NFHS- 5 Data:

- **Total Fertility Rate (TFR)**: The total fertility rate in a specific year is defined as the **total number of children that would be born to each woman if she were to live to the end of her child-bearing years** and give birth to children in alignment with the prevailing age-specific fertility rates.
 - **TFR** indicates the **average number of children expected to be born** to a woman during her reproductive span of **15-49 years**.
 - The TFR across **most Indian states declined** in the past half-a-decade, more so among urban women. This implies that **India's population is stabilizing**.
 - **Sikkim** recorded the **lowest TFR**, with one woman bearing 1.1 children on average. **Bihar** recorded the **highest TFR** of 3 children per woman.

- In 19 of the 22 surveyed states, TFRs were found to be **'below-replacement level'**.

- **Replacement level fertility** is the total fertility rate that is the average number of children born per woman at which a **population exactly replaces itself from one generation to the next, without migration**.

- This rate is **roughly 2.1 children per woman** for most countries, although it may modestly vary with mortality rates.

○ Contraception:

- Overall **Contraceptive Prevalence Rate (CPR)** has **increased substantially** in most States/UTs and it is the **highest in Himachal Pradesh and West Bengal (74%)**.
- **Female sterilization** continues to dominate as the **modern method of contraception** in states like Andhra Pradesh (98%), Telangana (93%), Kerala (88%), Karnataka (84%), Bihar (78%) and Maharashtra (77%).

➤ Implications:

- The data implies that most States have attained **replacement level fertility**.
- NFHS-5 provides evidence of an **increase in the use of modern contraceptives in rural and urban areas**, an improvement in these demands being met, and a **decline in the average number of children borne by a woman**.

➤ 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 has launched Mission Parivar Vikas in **2017** for

Note:

substantially increasing **access to contraceptives and family planning services in 146 high fertility districts with TFR of 3 and above** in seven high focus states.

- **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**.
- **Compensation scheme for sterilization acceptors** - Under the scheme **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**.
- **Contradiction :**
 - As the data from **NFHS-5** prove that the **country's population is stabilising**, the government's appeal for population reduction and fears over a "**population explosion**" and calls for a "**two child policy**" appears to be misguided.

National Family Health Survey

- **NFHS is a large-scale, multi-round survey** conducted in a representative sample of households throughout India.
 - The **Phase-I** provides data for 22 states/UTs and the fieldwork in the remaining 14 (**Phase-II**) States/UTs is under progress.
- All NFHSs have been conducted under the stewardship of the **Ministry of Health and Family Welfare**, Government of India, with the **International Institute for Population Sciences (IIPS) Mumbai**, serving as the nodal agency.

Suggestions

- India's population has **already crossed 125 crores** and **India is expected to surpass the world's most populous nation-China** in the next couple of decades.
- However, **restricted child policy will create a shortage of educated young people** needed to carry on India's technological revolution.
 - The problems like **gender imbalance, undocumented children, etc.** faced by China (as a result of the one-child policy) might be experienced by India as well.
- The data in NFHS-5 gives **requisite input for strengthening existing programmes and evolving new strategies for policy intervention**.

- The government and authorities should make required changes to the current policies and programs in accordance with the data given by NFHS-5.

Data Related to Women: NFHS-5

Why in News

Recently, the first-phase data of the **National Family Health Survey-5 (NFHS-5) 2019-20** has been released by the **Ministry of Health and Family Welfare**, which provided data on various issues related to women in India.

Key Points

- **Anaemia among Women:**
 - More than half of the children and women are anaemic in **13 of the 22 States/UTs**.
 - It has also been observed that **anaemia among pregnant women has increased** in half of the States/UTs compared to NFHS-4.
 - In all the states, anaemia is **much higher among women** compared to men.
- **Child Marriages:**
 - There has been an **increase in child marriages** in Tripura, Manipur and Assam.
 - States like **West Bengal (41.6%) and Bihar (40.8%) still have a high prevalence** of child marriages.
 - States such as **Tripura, Manipur, Andhra Pradesh, Himachal Pradesh and Nagaland** have also shown an **increase in teenage pregnancies**.
- **Domestic/Spousal Violence:**
 - It has **generally declined** in most of the states and UTs.
 - However, it has witnessed an **increase** in five states, namely **Sikkim, Maharashtra, Himachal Pradesh, Assam and Karnataka**.
 - **Karnataka witnessed the largest increase** in spousal violence, from 20.6% in NFHS-4 to 44.4% in NFHS-5.
 - **Sexual violence has increased** in five states (Assam, Karnataka, Maharashtra, Meghalaya and West Bengal).
- **Institutional Births:**
 - Institutional delivery is **over 90% in 14** out of the total 22 States and UTs.

Note:

- Increased substantially with over **four-fifth of the women** delivering in institutions in 19 States and UTs.

➤ **Caesarean Section Deliveries:**

- There has been an **increase in the number of Caesarean section** (C-section) deliveries in a majority of states.
- The international healthcare community has considered the **ideal rate** for caesarean sections to be **between 10% and 15%**.
- States such as **Telangana, West Bengal, Himachal Pradesh**, and some in the **northeast**, have shown a jump in C-section deliveries, especially at private healthcare facilities, in the last five years.
 - In some states like **Telangana and West Bengal**, the **C-section deliveries, at private healthcare facilities rose up** to 81% and 82%.

➤ **Sex Ratio at Birth:**

- **SRB** has remained **unchanged or has increased** in most States/UTs.
- Majority of the states has a **normal sex ratio of 952 or above**.
- SRB is **below 900** in Telangana, Himachal Pradesh, Goa, Dadra and Nagar Haveli and Daman and Diu.

➤ **Child Nutrition:**

- **Child nutrition** indicators show a **mixed pattern across states**. While the situation improved in many States/UTs, there has been a **minor deterioration** in others.
- Drastic **changes in stunting and wasting are unlikely in a short period**.

➤ **Financial Inclusion:**

- Considerable progress has been recorded between NFHS-4 and NFHS-5 in regard to **women operating bank accounts**.

➤ **Sanitation and Clean Air:**

- The percentage of households with improved sanitation facilities and clean fuel for cooking has **increased** in almost all the 22 States/UTs.
- The Government of India has made concerted efforts to provide toilet facilities to maximum households through the **Swachh Bharat Mission**, and improved household environment through the **Pradhan Mantri Ujjwala Yojana** in the country.

World Minorities Rights Day

Why in News

The **National Commission for Minorities** celebrated **World Minorities Rights Day** on **18th December 2020**.

- The **United Nations**, on 18th December 1992, adopted the Statement on the individual's **Rights belonging to religious or Linguistic National or Ethnic Minorities**.

Key Points

- The **National Commission for Minorities (NCM) Act, 1992** in its Section 2(c) defines a minority as "a community notified as such by the Central government".
 - In India, this applies to **Muslim, Christians, Sikhs, Buddhist, Parsis (Zoroastrian)** and Jain religions.
- As per **TMA Pai Foundation versus State of Karnataka case 2002** in the Supreme Court (SC), a minority, either linguistic or religious, is determinable only by reference to the demography of the State and not by taking into consideration the population of the country as a whole.
- **Constitutional Provisions Related to Minorities:**
 - The term "**Minority**" is **not defined** in the Indian Constitution. However, the Constitution recognises religious and linguistic minorities.
 - **Article 29:** It provides that any section of the citizens residing in any part of India having a distinct language, script or culture of its own, shall have the right to conserve the same.
 - However, the SC held that the scope of this article is not necessarily restricted to minorities only, as use of the word '**section of citizens**' in the Article **includes minorities as well as the majority**.
 - **Article 30:** All minorities shall have the right to establish and administer educational institutions of their choice.
 - The protection under Article 30 is confined **only to minorities** (religious or linguistic) and does not extend to any section of citizens (as under Article 29).
 - **Article 350-B:** Originally, the Constitution of India did not make any provision with respect to the Special Officer for Linguistic Minorities. However, the **7th Constitutional Amendment Act, 1956** inserted Article 350-B in the Constitution.

Note:

- It provides for a **Special Officer for Linguistic Minorities** appointed by the President of India.

National Commission for Minorities

➤ Genesis:

- In 1992, with the enactment of the **NCM Act, 1992**, NCM was formed.
- In 1993, the first **Statutory National Commission** was set up and five religious communities viz the **Muslims, Christians, Sikhs, Buddhists and Zoroastrians** (Parsis) were notified as minority communities.
- In 2014, **Jains** were also notified as a **minority community**.

➤ Composition:

- NCM consists of a **Chairperson, a Vice-Chairperson and five members** and all of them shall be from amongst the **minority communities**.
- Total of **7 persons to be nominated by the Central Government** should be from amongst persons of eminence, ability and integrity.
- **Tenure:** Each Member holds office for a **period of three years** from the date of assumption of office.

➤ Functions:

- **Evaluation of the progress** of the development of minorities under the Union and States.
- Monitoring of the working of the **safeguards for minorities** provided in the Constitution and in laws enacted by Parliament and the state legislatures.
 - For example, the **National Commission for Minority Education Institution (NCMEI) Act, 2004**, which gives the minority status to the educational institutions on the basis of six religious communities notified by the government.
- It ensures that the **Prime Minister's 15-point programme** is implemented and the programmes for minority communities are actually functioning.
- Looking into **specific complaints regarding deprivation of rights and safeguards of minorities** and taking up such matters with the appropriate authorities.
- It investigates **matters of communal conflict and riots**.

Data on Police Organisations: BPRD

Why in News

Recently, the **Bureau of Police Research and Development** (BPRD) has released **data on police organisations**.

- It shows **different aspects of policing** in the country like woman police, police expenditure, constabulary ratio, transport facilities, communication facilities, representation of various castes and police training centres.

Key Points

➤ General Data:

- The government has spent **₹1,566.85 crore** in **2019-20** for expenditure and police training.
- It highlights that **Backward Classes, Dalits and Tribals** constitute almost **67%** of India's population, but their **representation in police forces** in the country is **only at 51%**.

- The goal of **proportionate representation has remained unfulfilled despite** all state governments providing **reservation** to these categories.

➤ Vacant Posts:

- Over 5.31 lakh posts in police forces of different states and 1.27 lakh posts in **Central Armed Police Forces** (CAPF) are lying vacant.
 - The figures include civil police, district armed police, special armed police and India Reserve Battalions.

➤ Scheduled Tribes:

- They form 8.6% of the population and have 12% representation in the police forces, placing them at a comparatively better position.
- Only **STs have better representation** in police forces in comparison to their share in population while all other backward classes fare poorly.

➤ Dalits:

- 14% of all positions in police forces across the country were represented by Dalits at the end of 2019.
- According to **Census 2011**, Dalits make up 16.6% of India's population.

Note:



drishti

- **Other Backward Classes:**
 - OBCs fare the **worst on the representation front** as, despite their 41% share in the population, they constitute only 25% of the police forces.
- **Women:**
 - Women are **highly under-represented** with 10% share in the actual strength of the police in the country, even though their share in population is 48%.
 - However, their situation has improved considerably over the past years as the actual strength of **women in police forces** has almost doubled since 2014.
 - **Women population per woman police ratio** stands at 3,026 nationally which is very low.
 - Poor representation of women in the police is posing **serious challenges in dealing with crimes against women and women criminals**.
- **Other Ratios:**
 - Sanctioned **Population Per Police Person (PPP)** is 511.81.
 - Sanctioned **Police Population Ratio (PPR)** is 195.39.
 - It is the number of police personnel per one lakh of the population which has declined from 198 in 2018.
 - The **UN-mandated police-population ratio** is over 220.

- Sanctioned **Police Area Ratio (PAR)** per 100 sq km is 79.80.

POLICE-POPULATION RATIO

BEST STATES/UTs

Nagaland

1,300.9

A&N Islands

1080.9

Manipur

943.9

WORST STATES/UTs

Bihar

76.2

Daman & Diu

98.6

West Bengal

100.5

Note: Police includes civil police + district armed reserve + special armed police + India Reserve Battalions
(Figures in police per lakh population)

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Bureau of Police Research and Development

- The Government of India established it **under the Ministry of Home Affairs in 1970**.
- It replaced the **Police Research and Advisory Council (1966)**, with the primary **objective of modernization of the police force**.
- In **1995**, the Government **decided to entrust issues relating to Correctional Administration Work** to the BPR&D.
 - Thereby BPRD has to **ensure the implementation of prison reforms** as well.
- The Government of India decided to create a **National Police Mission** under the administrative control of BPR&D to transform the police forces in the country.
- In **August 2020**, it observed its **50th foundation day**.
- It has been **publishing the data on police organisations since 1986**.



Note:

Science and Technology

Highlights

- Covid in Antarctica
- Aquifer Mapping and Management
- Digital Ocean
- BBX11 Gene: Greening of Plants
- ISRO's Satellite Launch: CMS-01
- Mock Egg
- Data from Chandrayaan-2 Released: ISRO
- Covid-19 Vaccine Hesitancy
- Mutated Novel Coronavirus
- Mystery Illness of Eluru
- Nanotechnology and Health
- Intentional Genomic Alteration
- Indigenous Vaccine Pneumasil
- TiHAN-IIT: Testbed for Autonomous Navigation Systems

Covid in Antarctica

Why in News

36 people at a Chilean research station in Antarctica have been found infected with the **novel coronavirus**. This is the **first instance of the virus** in Antarctica.

Key Points

- Antarctica is uninhabited except for those manning the nearly **60 permanent stations** established by **several countries**, including India, for carrying out scientific research.
- Antarctica is **Earth's southernmost continent**. It contains the geographic South Pole and is situated in the **Antarctic region of the Southern Hemisphere**.
 - At 14,000,000 square kilometres, it is the **fifth-largest continent**.
- The **Indian Antarctic Programme** is a multi-disciplinary, multi-institutional programme under the control of the **National Centre for Antarctic and Ocean Research, Ministry of Earth Sciences**.
- India officially acceded to the **Antarctic Treaty System** in August **1983**.
- **Research Stations in the Antarctic:**
 - **Dakshin Gangotri:**
 - Dakshin Gangotri was the **first Indian scientific research base station** established in Antarctica, as a part of the Indian Antarctic Program.
 - It has weakened and become **just a supply base**.

○ Maitri:

- Maitri is India's second **permanent research station** in Antarctica. It was built and finished in 1989.
- Maitri is situated on the rocky mountainous region called **Schirmacher Oasis**. India has also built a freshwater lake around Maitri known as **Lake Priyadarshini**.

○ Bharti:

- Bharti, India's latest research station operational **since 2012**. It has been constructed to help researchers work in safety despite the harsh weather.
- It is India's first committed research facility and is located about **3000 km east of Maitri**.

○ Other Research Facilities:

- Sagar Nidhi:
 - In 2008, India commissioned the Sagar Nidhi, for research.
 - As an ice-class vessel, it can cut through the thin ice of 40 cm depth and is the first Indian vessel to **navigate Antarctic waters**.

Antarctic Treaty System

- Antarctic Treaty and related agreements are collectively known as the Antarctic Treaty System.
- It regulates **international relations with respect to Antarctica**.
- Antarctica is defined as all of the land and ice shelves **south of 60°S latitude**.
- Antarctic Treaty Secretariat Headquarters is in **Buenos Aires, Argentina**.

Note:

➤ **Antarctic Treaty:**

- Entered into force in **1961**.
- Currently has **53 parties**.
- Sets aside Antarctica as a **scientific preserve**.
- **Provisions:**
 - Antarctica shall be **used for peaceful purposes only**.
 - Freedom of scientific investigation in Antarctica and cooperation toward that end shall continue.
 - Scientific observations and results from Antarctica shall be exchanged and **made freely available**.

National Centre for Polar and Ocean Research

- National Centre for Polar and Ocean Research (NCPOR) was established as an autonomous research and development institution of the **Ministry of Earth Sciences in 1998**.
- It is located in **Goa**.
- It is the **nodal agency** for planning, promotion, coordination and execution of the **entire gamut of polar and southern ocean scientific research** in the country as well as for the associated logistics activities.
- Its **major responsibilities** include:
 - Management and upkeep of the Indian Antarctic Research Bases "**Maitri**" and "**Bharati**", and the Indian Arctic base "**Himadri**".
 - **Himadri:** India launched its **first scientific expedition to the Arctic Ocean in 2007** and opened a research base named "**Himadri**" at the **Svalbard, Norway** in July 2008 for carrying out studies in disciplines like Glaciology, Atmospheric sciences & Biological sciences.

Aquifer Mapping and Management

Why in News

A Memorandum of Agreement (MoA) has been recently signed between **Central Ground Water Board (CGWB)**, **Ministry of Jal Shakti** and **Council Of Scientific And Industrial Research–National Geophysical Research Institute**, for use of **advanced heliborne geophysical survey** (through helicopter) and other scientific studies under the **Aquifer Mapping Programme**.

- Geophysical data is used to provide information on the **physical properties** of the **Earth's surface and subsurface**. As a result, geophysical data can **help locate hydrocarbons, minerals, aggregate, and other natural resources**.
 - For example **groundwater mapping, mineral mapping**.

Key Points

➤ **Objectives of the study:**

- High resolution aquifer mapping using **heliborne geophysical studies**, including identification of sites for artificial recharge.
 - The main advantages of the **Heliborne geophysical survey** is that it is fast, highly data dense, precise and economical.
- Create **3D Geophysical model**, geophysical **thematic maps** at **horizontal and vertical plains**.
- **Aquifer Geometry** of principal aquifer with demarcation of de-saturated and saturated aquifers.
 - The rocks in which groundwater is stored are called aquifers. They are typically made up of **gravel, sand, sandstone or limestone**.
- Spatial and depth wise distribution of **paleochannel network** if any and its linkage with the aquifer system.
 - A palaeochannel, or paleochannel, is a remnant of an **inactive river or stream channel** that has been filled or buried by younger sediment
- Selecting suitable sites for groundwater withdrawal and water conservation through artificial or managed aquifer recharge.
- The study is likely to generate **groundwater data** in a very short time period helping in groundwater management by preparing **site specific plans** for improving ground water levels in water stressed areas.

India and Groundwater

- India is the **largest user of groundwater** in the world, extracting groundwater to the tune of **253 billion cubic meter (bcm)** per year.
 - It is about **25% of the global groundwater extraction**.
 - Out of the total of **6584** assessment units, **1034** have been categorized as '**Over-exploited**', **253** as '**Critical**', **681** as '**Semi-Critical**' and **4520** as '**Safe**'.

Note:

- The remaining **96** assessment units have been classified as '**Saline**' due to **non-availability of fresh groundwater** due to salinity problems.
- **Availability of Water:**
 - India has about **1123 billion m³** of water resources available, out of which **690 bcm** is surface water and rest **433 bcm** is groundwater.
 - Out of total groundwater available, **90% of it is used for irrigation purposes** which is mainly for agricultural purposes.
 - The remaining **10% accounts for domestic and industrial purposes combined**.

National Aquifer Mapping and Management Programme

- It is being implemented by the **Central Ground Water Board (CGWB)**.
- NAQUIM envisages **mapping of aquifers** (water bearing formations), their characterization and development of Aquifer Management Plans to facilitate **sustainable management of groundwater resources**.
- NAQUIM was initiated as a part of the **Ground Water Management and Regulation Scheme** to delineate and characterize the aquifers to develop plans for ground water management.

Central Ground Water Board

- It is a **subordinate office** of the **Ministry of Jal Shakti**, and is the National Apex Agency entrusted with the responsibilities of **providing scientific inputs for management, exploration, monitoring, assessment, augmentation and regulation of groundwater resources** of the country.

CSIR-National Geophysical Research Institute

- The National Geophysical Research Institute (NGRI) is a **geoscientific research organization** established in 1961 under the Council of Scientific and Industrial Research (CSIR).
- **HQ:** Hyderabad

- **Water Crisis in India:**
 - According to the **Composite Water Management Index (CWMI)** report released by the **NITI Aayog** in 2018, **21 major cities** (Delhi, Bengaluru, Chennai, Hyderabad and others) are racing to **reach zero groundwater levels by 2020**, affecting access for **100 million people**.

- The CWMI report also states that by 2030, the country's water demand is projected to be **twice the available supply**, implying **severe water scarcity** for hundreds of millions of people and an eventual **6% loss in the country's GDP**.
- Maharashtra and nearly half the country is facing an acute water shortage. Besides **Maharashtra, Tamil Nadu, Karnataka, Rajasthan, parts of Gujarat, Punjab and Haryana** are facing a water shortage of unprecedented levels.

Digital Ocean

Why in News

Recently, the **Ministry of Earth Sciences** has inaugurated the **web-based application Digital Ocean** developed by **Indian National Centre for Ocean Information Services (INCOIS)** in a Virtual Meeting held in New Delhi.

Key Points

- **About Digital Ocean:**
 - It is a new state of the art **data platform** for **Ocean Data Management**.
 - It is the **first such platform to provide ocean data related services at one place**.
 - It includes a set of **applications** developed to **organize and present heterogeneous oceanographic data by adopting rapid advancements in geospatial technology**.
 - It facilitates an online interactive web-based environment for **data integration, 3D and 4D (3D in space with time animation) data visualization**, data analysis to assess the evolution of oceanographic features, etc.
- **Significance:**
 - Digital Ocean is a big **step towards** the vision of **Digital India** and **Atmanirbhar Bharat**.
 - It will serve as a one-stop-solution for all the data related needs of a wide range of users including **research institutions, operational agencies, strategic users, the academic community, maritime industry, policymakers and the public**.
 - It will play a **central role in the sustainable management of the oceans** and expanding the government's **Blue Economy** initiatives.

Note:

- It will be promoted as a **platform for capacity building** on Ocean Data Management for all **Indian Ocean Rim countries**.

Indian National Centre for Ocean Information Services

- It is an **autonomous organization** under the **Ministry of Earth Sciences (MoES)**.
- It is located in Hyderabad and was **established in 1999**.
- It is a **unit of the Earth System Science Organization (ESSO)**, New Delhi.
 - The **ESSO** operates as an **executive arm of the MoES** for its policies and programmes.
 - **ESSO's** aim is to **develop and improve the capability to forecast weather, climate and hazard related phenomena** for social, economic and environmental benefits including addressing aspects relating to **climate change** science, and climate services.
- It is mandated to **provide the best possible ocean information and advisory services** to society, industry, government agencies and the scientific community through sustained ocean observations and constant improvement through systematic and focused research.
- It has adopted and developed various state-of-the-art technologies and tools that includes **Potential Fishing Zone (PFZ)** advisories, **Ocean State Forecast (OSF)**, **High Wave Alerts**, **Tsunami early warnings**, **Storm Surge** and **Oil-Spill** advisories, etc.
- It has been serving as the National Argo Data Centre and Regional Argo Data Centre of the **International Argo Programme**.
- **Other Related Initiative:**
 - **Deep Ocean Mission:**
 - Launched in **2018**, it proposes to **explore the deep ocean**.
 - Focus: **Deep-sea mining, ocean climate change advisory services, underwater vehicles and underwater robotics-related technologies**.
 - Two key projects planned in the Mission are:
 - A **desalination plant** powered by **tidal energy**.
 - A **submersible vehicle** that can explore depths of at least 6,000 metres.
 - **Significance:** It will enable India to **develop capabilities to exploit resources in the Central Indian Ocean Basin (CIOB)**.

BBX11 Gene: Greening of Plants

Why in News

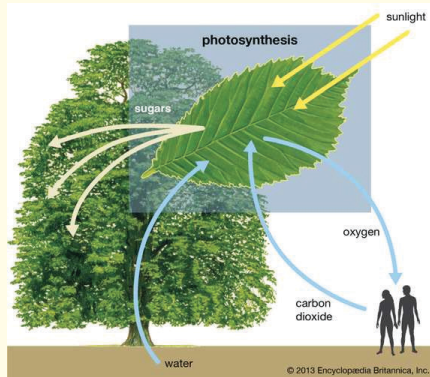
Recently, the **Indian Institute of Science Education and Research (IISER)** has recognized the **BBX11 gene** that facilitates the greening of crops.

Key Points

- **About BBX11 Gene:**
 - The researchers discovered a mechanism where two proteins oppositely regulate the BBX11 gene to maintain optimum ranges of BBX11.
 - **BBX11** plays a vital role in regulation of the amount of **protochlorophyllide** synthesized by the plant.
 - **Protochlorophyllide** is an intermediate in the synthesis of chlorophyll.
 - If it is **less**, plants are **unable to efficiently green in order to harvest sunlight** and if the amount of **protochlorophyllide** is more, then **photobleaching occurs**.
 - **Photobleaching** is **loss of colour** by a pigment.
 - The quantity of **protochlorophyllide** synthesised needs to be **proportional** to the **variety of enzymes** available to transform them to chlorophyll.
 - It is very **important to regulate the amount of protochlorophyllide** synthesized by the plant.
- **Synthesis of Chlorophyll:**
 - **Chlorophyll** is the **green pigment** in **plants, algae, and cyanobacteria** that **absorbs sunlight** and uses its energy to **synthesise carbohydrates from Carbon-di-Oxide (CO₂) and water**.
 - The synthesis of chlorophyll in plants is a **lengthy, multi-step process**.
 - When a seedling emerges from under the soil it **must quickly synthesise chlorophyll to start supporting its own growth**.
 - In order to facilitate quick synthesis of chlorophyll, plants make a precursor of chlorophyll called '**protochlorophyllide**' in the dark, which **glows red in blue light**.
 - As soon as the plant comes out into the light from under the soil, light-dependent enzymes convert **protochlorophyllide to chlorophyll**.

Note:

Photosynthesis



- Photosynthesis is the process by which **green plants and certain other organisms transform light energy into chemical energy.**
- During photosynthesis in green plants, **light energy is captured and used to convert water, carbon dioxide, and minerals into oxygen and energy-rich organic compounds.**
- **Factors Affecting Photosynthesis:** Photosynthesis is under the influence of several factors, both **internal (plant)** and **external**.
 - **Internal:** Number, size, age and orientation of leaves, mesophyll cells and chloroplasts, internal CO_2 concentration and the amount of chlorophyll.
 - **External:** Availability of sunlight, temperature, CO_2 concentration and water.
 - For example, despite the presence of a green leaf and optimal light and CO_2 conditions, the plant may not photosynthesise if the temperature is very low.
- **Importance:**
 - It would be impossible to overestimate the importance of photosynthesis in the **maintenance of life on Earth.**
 - If **photosynthesis ceased**, there would soon be **little food or other organic matter on Earth.**
 - **Most organisms would disappear**, and in time **Earth's atmosphere would become nearly devoid of gaseous oxygen.**
 - Energy produced by photosynthesis carried out by plants millions of years ago is responsible for the **fossil fuels (i.e., coal, oil, and gas) that power industrial society.**

Implications:

- This discovery has **many implications within the agriculture sector in tropical nations like India** and can **assist present results in optimising plant progress** in frequently **changing weather conditions.**
 - Due to the quickly altering weather conditions, **farmers in a number of states in India, particularly in Maharashtra, are struggling with large losses in crop yields.**
 - This often leads to **severe distress among the farming community as indicated by the high number of farmer suicides** in Maharashtra for the past several years.
 - **Major Reasons for Crop Failure:** Severe **drought**, high temperature and high light.
- Young seedlings emerging out of the soil are extremely sensitive to high irradiance of light. This study can **provide leads to optimise plant growth under these stressful conditions.**

ISRO's Satellite Launch: CMS-01

Why in News

Recently, the **Indian Space Research Organisation (ISRO)** has launched CMS-01 onboard the **Polar Satellite Launch Vehicle (PSLV) C50** launched from the **Satish Dhawan Space Centre, Andhra Pradesh.**

- In November 2020, ISRO launched India's **Earth Observation Satellite, EOS-01**, and nine other customer satellites.

Key Points

- **CMS-01** is a **communications satellite** envisaged for providing services in extended **C Band frequency spectrum.**
 - The C band is a designation for a portion of the **electromagnetic spectrum in the microwave range of frequencies ranging from 4.0 to 8.0 gigahertz (GHz).**
- Its **coverage** will include the Indian mainland, and the Andaman and Nicobar Islands and Lakshadweep Islands.
- The satellite is expected to have a **life of more than seven years.**

Note:

Polar Satellite Launch Vehicle

- India's PSLV is the **third generation** launch vehicle and the **first launch vehicle which is equipped with liquid stages**.
- PSLV's first successful launch was in October 1994. PSLV was used for two of the most important missions. These are **Chandrayaan-1** in 2008 and **Mars Orbiter Spacecraft** in 2013.
- **Geosynchronous Satellite Launch Vehicle (GSLV) Mark II** and **GSLV MkIII** are the other two launch vehicles.
 - **GSLV Mk II** is the largest launch vehicle developed by India, which is currently in operation. This **fourth-generation launch vehicle** is a three-stage vehicle with four liquid strap-ons. The **indigenously developed cryogenic Upper Stage (CUS)**, which is flight-proven, forms the third stage of GSLV Mk II.
 - **GSLV MkIII**, chosen to launch Chandrayaan-2 spacecraft, is a **three-stage heavy-lift launch vehicle** developed by ISRO. The vehicle has two solid strap-ons, a core liquid booster and a cryogenic upper stage.
 - GSLV Mk III is designed to carry a 4 ton class of satellites into **Geosynchronous Transfer Orbit (GTO)** or about 10 tons to Low Earth Orbit (LEO), which is about twice the capability of the GSLV Mk II.

Geosynchronous Orbit

- A **geosynchronous orbit** is a high Earth orbit that allows satellites to match **Earth's rotation**. Located at 22,236 miles above Earth's equator, this position is a **valuable spot for monitoring weather, communications and surveillance**.

Geosynchronous Transfer Orbit

- To attain geosynchronous (and also geostationary) Earth orbits, a spacecraft is first launched into an **elliptical orbit**. This is called a **Geosynchronous Transfer Orbit (GTO)**.
- A GTO is **highly elliptic**. Its perigee (closest point to Earth) is typically as high as **low Earth orbit (LEO)**, while its **apogee** (furthest point from Earth) is as high as **geostationary** (or equally, a geosynchronous) orbit.
- The satellite was injected precisely into its predefined sub-**Geo-synchronous Transfer Orbit (GTO)**. Eventually,

it will be placed into its specified slot in the **Geo-Synchronous Orbit** after a series of manoeuvres.

- CMS-01 will **replace and enhance the services of GSAT-12**.
 - GSAT-12, a communication satellite built by ISRO, provides facilities for various communication services like **Tele-education, Tele-medicine** and for **Village Resource Centres (VRC)**.
 - To provide the space-based services **directly to the rural areas**, ISRO has launched the **Village Resource Centres (VRCs)** programme in association with NGOs/Trusts and state/central agencies.
- **Next Launch of ISRO:**
 - **PSLV-C51**, will be the next special mission for ISRO, as it will **be carrying the country's first satellite under the space reforms programme**.
 - The government had announced the opening up of the **space sector to private players** with the inception of **Indian National Space Promotion and Authorisation Centre (IN-SPACe)**.
 - The IN-SPACe is expected to **hand-hold, promote and guide the private industries** in space activities through encouraging policies and a friendly regulatory environment.
 - **Satellites to be onboard PSLV-C51:**
 - **Pixxel India** named '**Anand**', '**Satish Sat**' from Space Kidz India, '**Unity Sat**' from a consortium of universities.

Mock Egg

Why in News

Recently, a team of scientists from IIT Delhi has won an **innovation contest (Innovate 4 SDG)** organised by the **United Nation Development Programme (UNDP) Accelerator Lab India** for their innovation of a "**plant-based mock egg**".

- **UNDP Accelerator Lab India** seeks to address some of the most pressing issues facing India, such as **air pollution, sustainable water management and client-resilient livelihoods through innovation**.
- The team secured the **first prize** and won **USD 5,000** for their innovation.

Note:

Key Points

- **Mock Egg** has been developed from very simple farm-based crop proteins, which not only looks and tastes like an egg but is also very close in nutritional profile to poultry eggs.
- The development of the mock egg meets the protein needs of the diet-specific, health-conscious, vegan and vegetarian people.
- The team has also developed **meat analogues for chicken and fish from plant sources using fruits and vegetables**.
- The plant-based textured foods which resemble egg, fish and chicken have been developed with an aim **to address the longstanding battle for malnutrition and clean protein food for people**.

Data from Chandrayaan-2 Released: ISRO

Why in News

Recently, the **Indian Space Research Organisation (ISRO)** has released the first set of data from the country's second mission to the Moon, the Chandrayaan-2, for the general public.

- India launched **Chandrayaan-2**, its second lunar exploration mission after **Chandrayaan-1**, from Satish Dhawan Space Centre, Sriharikota on **22nd July 2019**.
- **ISRO** is planning mission **Chandrayaan-3** in late 2021 or early 2022.

Key Points

- Standard Requirement for Public Release of Data:
 - The **Chandrayaan-2 data** is required to be in the **Planetary Data System-4 (PDS4) standard**, and is **required to be peer reviewed scientifically and technically** before acceptance as PDS archives and declared ready for sharing with the global scientific community and the general public.
 - This **activity has been completed** and hence the first set of data from the Chandrayaan-2 mission is now **being released for the wider public use through the PRADAN portal hosted by Indian Space Science Data Centre (ISSDC)**.
 - **ISSDC** is the nodal centre of planetary data archive for the planetary missions of **ISRO**.

Current Data:

- The **ISRO Science Data Archive (ISDA)** currently holds data sets acquired by Chandrayaan-2 payloads from **September-2019 to February-2020** from seven instruments.
 - ISDA is the **long-term archive** for ISRO planetary missions.

Data Implies:

- All experiments have been performing well and the data received suggests excellent capability to deliver on the pre-launch promises.

Chandrayaan-2

- It is an integrated **3-in-1 spacecraft** of around 3,877 kg consisting of an **Orbiter** of the Moon, **Vikram** (after Vikram Sarabhai) - the lander and **Pragyan** (wisdom) - the rover, all equipped with scientific instruments to study the moon.
 - The Chandrayaan-2 was India's **first attempt to land on the lunar surface**.
 - ISRO had planned the **landing on the South Pole of the lunar surface**. However, the lander **Vikram hard-landed in September last year**. Its orbiter, which is still in the lunar orbit, has a **mission life of seven years**.
- **Objective:**
 - Try and build on the evidence of water molecules shown by Chandrayaan-1 and **study the extent and distribution of water on the Moon**.
 - Study **topography, seismography, composition of lunar surface and the lunar atmosphere**.
 - The study of **ancient rocks and craters** can offer indications of **origin and evolution of the Moon**.
 - The South Pole region of the Moon also contains clues to the fossil records of early solar systems. Thus, it can **improve our understanding of the early solar system as well**.
 - Map the lunar surface and prepare 3D maps of it.

Covid-19 Vaccine Hesitancy

Why in News

Recently, various online surveys have been conducted to check vaccine acceptance among the general population.

Note:

Key Points

- **Vaccine Hesitancy:**
 - It refers to **delay in acceptance or refusal of vaccines** despite the availability of vaccine services. It is complex and **context-specific** varying across time, place and vaccine. It is influenced by factors such as **complacency, convenience and confidence**.
- **Reasons for Vaccine Hesitancy:**
 - The main issue with **vaccine hesitancy** is **misinformation**.
 - **Religious propaganda** that the vaccine may contain microbes, chemicals and animal-derived products which are forbidden by religious laws.
 - **Social media** is used in stirring fear in people by falsely blaming vaccines for unrelated diseases. This is the bedrock of the vaccine hesitancy all across the globe.
 - For example, some sections in India have refrained from the polio vaccine. This is due to the misconception that the polio vaccine causes illness, infertility and is ineffective.
 - **Vaccine-derived diseases:** Oral Polio Vaccines (OPV) contains weakened but **live poliovirus**. This virus from the vaccine is excreted by **immunized children** which can move from one person to another.
 - This allows the virus to **stick around and mutate** to a more virulent form, raising the threat of **vaccine-derived poliovirus (VDPV)**.
 - **Inconvenience** in accessing vaccines is also the leading cause of vaccine hesitancy.
- **Covid-19 Vaccine Hesitancy:**
 - In an **online study** conducted by infectious diseases consultants at Apollo Hospital, Chennai, among 1424 health professionals, only 45% said they will take the **Covid vaccine** as soon as it becomes available.
 - **55% will either defer the vaccination** or are yet to decide what to do.
 - Another recent online survey by the agency Local Circles, where **59% of the public** surveyed said they prefer to defer vaccination.
- **Associated Issues:**
 - Can have a **negative consequence** on the efforts to control the pandemic.
 - May lead to a massive spread of the disease.

➤ **Public Awareness as Solution:**

- Give confidence to the public by discussing the **robustness** of various processes involved in drug/vaccine development, **clinical trial designs, monitoring, analysis and the regulatory reviews** that happen before it is approved.
- Use **Social Media Platforms** to counter any misinformation regarding vaccines and spread awareness.

Mutated Novel Coronavirus

Why in News

A **mutated variant** of the novel **Coronavirus** has been associated with recent infections in England.

- The virus has undergone **several mutations** since it first infected humans.

Key Points

- **The New Mutant Coronavirus:**
 - The mutant virus has been identified as **N501Y** and is likely to be a mutation in the **spike protein**.
 - It is the **coronavirus spike protein that binds to a human protein to initiate the process of infection**.
 - Changes here could possibly affect how the virus behaves in terms of its **ability to infect, or cause severe disease, or escape the immune response made by vaccines**.
 - There has been a single nucleotide change in one portion of the spike protein, so there would be **no bearing on the disease biology or even diagnostics**.
- **Effect on Infection and Vaccination:**
 - Several coronavirus vaccines are **designed to create antibodies targeting the spike protein**.
 - The vaccines **target multiple regions on the spike**, while a mutation refers to a change in a single point. If there is **one mutation, it does not mean vaccines would not work**.
 - All **SARS-CoV-2** strains are **genetically similar to one another**, and scientists do **not expect** these mutations to have a **significant impact** on their ability to cause more severe disease than what has been observed so far.

Note:

- Many mutations mean nothing at all, or at least are more successful for reasons not known.
 - For instance a different **strain may be more transmissible, but cause less disease.**
- Researchers need to monitor the mutations as there is **no evidence that the new strain in the UK is more transmissible or more severe/resistant to treatment or vaccination.**
- **Mutant Variant in India:** Researchers have **not seen this variant in India.**
- **Earlier Mutation:**
 - **D614G Mutation:** This particular mutation aided the virus in attaching more efficiently with the ACE2 receptor in the human host, thereby making it more successful in entering a human body than its predecessors.
 - **D614G** showed increased infectivity but it also displayed greater ability at attaching itself to the cell walls inside an individual's nose and throat, increasing the viral load.

Mutation

- A mutation means a change in the genetic sequence of the virus.
- In the case of **SARS-CoV-2**, which is an **Ribonucleic acid (RNA)** virus, a mutation means a **change in the sequence in which its molecules are arranged.**
 - **SARS-CoV-2** is the virus that causes **Covid-19.**
 - **RNA** is an **important biological macromolecule** that is **present in all biological cells.**
 - Principally **involved in the synthesis of proteins, carrying the messenger instructions from Deoxyribonucleic Acid (DNA)**, which itself contains the genetic instructions required for the development and maintenance of life.
 - **DNA** is an **organic chemical that contains genetic information and instructions for protein synthesis.** It is found in most cells of every organism.
- A mutation in an RNA virus often happens when the virus makes a **mistake while it is making copies of itself.**
 - Only if the mutation results in a **significant change in the protein structure** can the course of a disease be altered.

Mystery Illness of Eluru

Why in News

Recently, the Andhra Pradesh government has requested the **All India Institute of Medical Sciences (AIIMS), New Delhi** and the **Indian Institute of Chemical Technology (IICT), Hyderabad** to conduct a **long-term study** to determine the causes of the **mystery illness in Eluru** in West Godavari district.

Key Points

- Over **70%** of Eluru town, in Andhra Pradesh's West Godavari district, has been **affected by a mysterious illness.**
- **Symptoms of the Mystery Illness:**
 - Convulsions, seizures, dizziness and nausea.
 - **Convulsion** is a medical condition where **body muscles contract and relax rapidly and repeatedly**, resulting in uncontrolled actions of the body.
 - **A seizure** is a **sudden, uncontrolled electrical disturbance in the brain.** It can cause changes in behaviour, movements or feelings, and in levels of consciousness.
 - **Dizziness** is a term used to describe a range of sensations, such as **feeling faint, weak or unsteady.**
 - **Nausea** is **stomach discomfort** and the sensation of wanting to vomit.
 - The **seizures** last for 3 to 5 minutes **followed usually by vomiting or loss of consciousness.**
- **Possible Causes:**
 - The primary suspicion is on **water contamination by heavy metals.**
 - **Excessive use of bleaching powder and chlorine in sanitation programmes** as part of **Covid-19** prevention measures might have caused water contamination.
 - **AIIMS-New Delhi** found traces of **lead and nickel** in blood samples of 25 victims out of the 45 samples sent by the state government.
 - Scientists suspect that **pesticides or insecticides** have seeped into drinking water sources.
 - Eluru receives water through canals from both **Godavari and Krishna rivers.** The canals pass

Note:

through agricultural fields where runoff laced with pesticides mixes with water in the canals.

- **Victims:**
 - People of all age groups, **men, women and even small children are among the victims.**
- **Recovery:**
 - Most victims being treated are **getting fine within one or two hours and are discharged.**

Nanotechnology and Health

Why in News:

A team of scientists has created a **nanomicelle** that can be used for **effective drug delivery to treat various cancers** including breast, colon and lung cancer.

- Nanotechnology or nanotech is the technology that involves the **manipulation of matter on atomic, molecular, and supramolecular scales.** This includes particles of a scale of **1 to 100 nanometers.**

Key Points

- **Nanomicelles:**
 - **Formation:**
 - Nanomicelles are formed when **amphiphilic** molecules assemble themselves to create a globular structure that is only around **5 to 100nm** in diameter.
 - Different agents are used to create nanomicelles, however, they are usually made through surfactant molecules that may be **non-ionic, ionic, and cationic detergents.** Some nanomicelles may also be developed from a mixture of **lipids and detergents.**
 - **Use in Drug Delivery:**
 - They are amphiphilic, i.e. have a **hydrophilic outer shell** and a **hydrophobic interior.** This dual property makes them a **perfect carrier** for delivering **drug molecules.**
 - The **hydrophilic shell** makes the **micelle water soluble** that allows for intravenous delivery while the hydrophobic core carries a payload of drug for therapy.
 - Once injected intravenously, these nanomicelles can **easily escape the circulation** and enter the **tumours** where the blood vessels are found to be leaky. These leaky blood vessels are **absent in the healthy organs.**

➤ Importance of Targeted Delivery:

- The goal for cancer therapy is **destroying the cancer cells without harming healthy cells** of the body.
- Chemotherapeutics approved for treatment of cancer are **highly toxic with various side effects.**
- Thus the need arises for effective targeted drug delivery.

➤ Other Uses of Nanotechnology in Health Care:

- **Nanotech detectors** for **heart attack.**
- **Nanochips** to **check plaque in arteries.**
- **Nanocarriers** for eye surgery, chemotherapy etc.
- **Diabetic pads** for regulating blood sugar levels.
- Nanoparticles for **drug delivery to the brain** for therapeutic treatment of neurological disorders.
- **Nanosponges** are polymer nanoparticles coated with a red blood cell membrane, and can be used for **absorbing toxins and removing them from the bloodstream.**
- **NanoFlares** are used for detection of **cancer cells in the bloodstream.**
- **Nanopores** are used in making **DNA sequencing** more efficient.

➤ Recent Use of Nanotechnology:

- Antiviral nano coating on face masks and Personal Protection Equipment (PPE) kits.

➤ Risks of Nanotechnology:

- Since this field is still at its nascent stage, the likely risks are **contentious.**
- The regulatory authorities like the US Environmental Protection Agency and the Health and Consumer Protection Directorate of the European Commission have started **assessing the potential risks posed by the nanoparticles.**
- **Nanotoxicology** is the study of **potential health risks of nanomaterials.**
 - The human body can easily take up the nanomaterials as they are **small in size.** However, there is a need for detailed research on how it would behave inside an organism. The behaviour of nanoparticles based on their size, shape and surface reactivity must be **thoroughly analysed before launching them into the market.**
- **Nanopollution** is the generic term that is used to describe the waste generated by the nanodevices or nanomaterials during the manufacturing process.

Note:

Governmental Initiatives to Promote Nanotechnology

- **Nano Science and Technology Mission (NSTM):**
 - **NSTM**, launched in 2007, is an umbrella programme that aims to promote **research and development in nanotechnology**. The objectives include the promotion of research, infrastructure development to support the research, development of nanotechnology, human resources, and international collaborations.
- **Nano Science and Technology Initiative (NSTI):**
 - It was set up by the Department of Science and Technology (DST) in 2001 to focus on issues related to **infrastructure development**, research and application programmes related to nanomaterials including drugs, drug delivery, gene targeting and DNA chips.

Intentional Genomic Alteration

Why in News

Recently, the **US Food and Drug Administration (FDA)** has approved a **first-of-its-kind Intentional Genomic Alteration (IGA)** in a line of domestic pigs referred to as **GalSafe pigs**.

- This will be the **first time** that the regulator has approved an **animal biotechnology product for both food and biomedical purposes**.

Key Points

- **Intentional Genomic Alteration:**
 - IGA in animals means **making specific changes to the genome of the organism using modern molecular technologies** that are popularly referred to as **“genome editing” or “genetic engineering”**.
 - **Genome editing** is a group of technologies that give scientists the ability to change an organism's **Deoxyribonucleic Acid (DNA)**, which is the chemical name for the molecule that **carries genetic instructions in all living things**.
 - These technologies allow genetic material to be **added, removed, or altered at particular locations** in the genome.
 - One such technology is **Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)**, which replicates natural defence

mechanisms in bacteria to fight virus attacks, using a **special protein called Cas9**.

- **Emmanuelle Charpentier** of France and **Jennifer A Doudna** of the USA have been awarded the **2020 Nobel Prize in Chemistry** for developing CRISPR/Cas9 genetic scissors.
- A **Genetically Modified Organism (GMO)** is an animal, plant, or microbe whose DNA has been altered using genetic engineering techniques.
 - An IGA is inserted into an animal to **change or alter its structure and function**.
 - The difference between an animal with an IGA and one that does not have an IGA is that the IGA **gives them a new trait or characteristic, such as faster growth or resistance to certain diseases**.
- **Use of IGA:**
 - Changes in the **DNA** sequence of an animal may be carried out **for research purposes, to produce healthier meat** for human consumption and **to study disease resistance** in animals, among other reasons.
 - One example is of using IGAs to make an **animal more susceptible to certain diseases such as cancer**, which helps researchers **get a better understanding of the disease and develop new therapies** to treat it.
- **FDA's Approval:**
 - The FDA allowed IGA in GalSafe pigs to **eliminate a type of sugar found in mammals called alpha-gal**.
 - GalSafe pigs may potentially be used to produce human medical products, IGA will help eventually free these products from detectable alpha-gal sugar, thereby **protecting their human consumers from potential allergies**.
 - Sugar is present on the surface of GalSafe pigs' cells and when they are **used for products such as medicines or food** (the sugar is found in red meats such as beef, pork and lamb), the **sugar makes some people with Alpha-gal Syndrome (AGS) more susceptible to developing mild to severe allergic reactions**.

Legislation in India Related to GMO

- In India, GMOs and the products thereof are regulated under the **Rules for the manufacture, use, import, export and storage of hazardous microorganisms, genetically engineered organisms or cells, 1989**

Note:

(referred to as Rules, 1989) notified under the **Environment (Protection) Act, 1986**.

- The **Rules 1989** are supported by a series of guidelines on contained research, biologics, confined field trials, food safety assessment, environmental risk assessment etc.
- These rules are very broad in scope essentially **covering the entire spectrum of activities involving GMOs and products thereof**.
 - They also **apply to any substances, products, and foodstuffs, etc.**
 - **New gene technologies apart from genetic engineering** have also been included.
- Rules 1989 are implemented by the **Ministry of Environment, Forest and Climate Change (MoEFCC)** jointly with the **Department of Biotechnology (DBT)**, Ministry of Science and Technology and **state governments**.
- Six Competent Authorities and their composition have been notified under these Rules that include:
 - rDNA Advisory Committee (RDAC)
 - Institutional Biosafety Committee (IBSC)
 - Review Committee on Genetic Manipulation (RCGM)
 - Genetic Engineering Appraisal Committee (GEAC)
 - State Biotechnology Coordination Committee (SBCC)
 - District Level Committee (DLC)
 - While the RDAC is advisory in function, the IBSC, RCGM, and GEAC are responsible for regulating function. SBCC and DLC are for monitoring purposes.
- **Indian Initiatives Related to GMOs:**
 - **Indian GMO Research Information System:** It is a database on activities involving the use of GMOs and products thereof in India.
 - The primary purpose of this website is to make available objective and realistic scientific information relating to GMOs and products thereof under research and commercial use to all stakeholders including scientists, regulators, industry and the public in general. It is also expected to promote collaborations and avoid duplication of work.
 - **Bt cotton** is the only **Genetically Modified (GM) crop** that is allowed in India. It has alien genes from the soil bacterium *Bacillus thuringiensis* (Bt) that allows the crop to develop a protein toxic to the common pest pink bollworm.

- India is also a signatory of **Cartagena Protocol on Biosafety** which seeks to **protect biological diversity** from the potential risks posed by **Living Modified Organisms** resulting from modern biotechnology.

Indigenous Vaccine Pneumosil

Why in News

Recently, **India's first fully indigenously developed pneumococcal conjugate vaccine "Pneumosil"** has been launched.

Key Points

- **Developed by: Serum Institute of India (SII)**, through a collaboration with **PATH** and **Bill and Melinda Gates Foundation**.
 - **Serum Institute of India** is a **Pune based world's largest vaccine** manufacturer by number of doses produced and sold globally.
 - **PATH** is an **international, nonprofit global health organization** based in **Seattle (USA)**.
 - The **Bill & Melinda Gates Foundation (BMGF)** is an American private foundation, founded by Bill and Melinda Gates. Based in Seattle, Washington, the primary goals of the foundation are to **enhance healthcare** and **reduce extreme poverty** across the globe, and to expand **educational opportunities** and access to information technology in the USA.
- **Information about the Vaccine:**
 - The vaccine **targets the pneumococcal bacterium**, which causes pneumonia and other serious life-threatening diseases such as meningitis and sepsis, and is estimated to cause nearly four lakh deaths in children under five years of age each year worldwide.
 - It will be **available in the market at an affordable price in single dose and multidose presentations**.
 - While **pneumococcal conjugate vaccines (PCVs)** have helped reduce pneumococcal deaths, they are difficult for many countries to afford.
 - The **unique feature** of the vaccine is its composition, which is **specially tailored** to the **prevailing serotype prevalence of *S. Pneumoniae* in India** and other regions of the world.

Note:

- A serotype or serovar is a **distinct variation within a species of bacteria or virus or among immune cells of different individuals.**
- It was **licensed by the Drugs Controller General (India)** in July 2020.
- **Significance:**
 - It is an example of **India's capability in Research & Development & manufacturing high end sophisticated Vaccines.**
 - Till now, India was **fully dependent on Pneumococcal Conjugate Vaccine(PCV) manufactured by Foreign Manufacturers** which are available at very high prices.
 - The vaccine also makes SII the first **developing country vaccine manufacturer** to access the global PCV market.
 - SII is also the maker of **Covishield**, the Indian version of the **AstraZeneca-Oxford coronavirus vaccine.**

Pneumococcal Disease

- **About the Disease:**
 - Pneumococcal disease is a name for **any infection caused by bacteria called *Streptococcus pneumoniae*** or pneumococcus.
 - The bacteria is the most common **cause of bloodstream infections, pneumonia, meningitis, and middle ear infections in young children.**
 - **Pneumonia** is an infection of the lungs. Many different bacteria, viruses, and even fungi can cause pneumonia. **Pneumococcus is one of the most common causes of severe pneumonia.**
- **Doctors consider some of these infections "invasive".**
 - Invasive disease means that **germs invade parts of the body that are normally free from germs.**
 - For example, **pneumococcal bacteria can invade the bloodstream, causing bacteremia, and the tissues and fluids covering the brain and spinal cord, causing meningitis.** When this happens, disease is usually very severe, requiring treatment in a hospital and even causing death in some cases.
- **Disease Burden:**
 - Annually India witnesses an estimated **71% of pneumonia deaths** and **57% of severe pneumonia cases.**

- According to the **World Health Organisation(WHO)**, pneumonia accounts for **15% of all deaths of children under 5 years.**
- **Prevention:**
 - **Pneumococcal Conjugate Vaccine (PCV)** prevents pneumococcal disease.
 - The vaccine is a **mix of several bacteria of the pneumococci family**, which are known to cause pneumonia, hence 'conjugate' is included in the name of the vaccine.
 - **Conjugate vaccines** are made using a combination of two different components.
 - The Indian government has been ensuring **PCV under Universal Immunisation Programme (UIP)** to fight pneumococcal disease.

TiHAN-IIT: Testbed for Autonomous Navigation Systems

Why in News

The foundation stone of '**TiHAN-IIT Hyderabad**', India's **first Testbed for Autonomous Navigation Systems** (Terrestrial and Aerial) has been laid recently.

Key Points

- **Background:**
 - The Department of Science and Technology (DST) had sanctioned **₹135 crores** to **IIT Hyderabad (IIT-H)** under the **National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)** to set up a **Technology Innovation Hub on Autonomous Navigation and Data Acquisition Systems** (UAVs, RoVs, etc.)
 - The Technology Innovation Hub for **Unmanned Aerial Vehicles** (UAVs) and Remotely Operated Vehicles (RoVs) at IIT Hyderabad, known as '**TiHAN Foundation**' was incorporated as a **Section-8 company** by the institute in June 2020.
 - It is a multi-departmental initiative including researchers from electrical, computer science, mechanical and aerospace, civil, mathematics, and design at IIT-H with collaboration and support from reputed institutions and industry.

Note:

- It is a great step towards 'Atmanibhar Bharat', 'Skill India' and 'Digital India'.

➤ TiHAN-IIT:

- It will **facilitate research grounds** to investigate the **functioning of unmanned and connected vehicles** in a controlled environment by replicating different scenarios, ranging from frequently occurring to extreme cases that may ensue in real-life traffic operations.
- At present, there is **no such testbed facility in India** to evaluate the autonomous navigation of vehicles. Therefore, it is envisioned to address this gap by developing a fully functional and exemplary testbed facility dedicated to **connected autonomous vehicles (CAVs)**.
 - **Connected vehicles** use **technology to either communicate with each other**, connect with **traffic signals, signs, and other road items**, or **obtain data from a cloud**. This information exchange helps with **safety and improves traffic flow**.
- This hub focuses on addressing various challenges hindering the **real-time adoption of unmanned autonomous vehicles** for both **terrestrial and aerial applications**.
- **Primary focus includes:**
 - **Research & Technology development** in the area of Autonomous Navigation and Data Acquisition Systems (UAVs, RoVs).
 - **Industry Collaborations :**
 - Joint R&D Initiatives, Consultancy, Technology Outreach Schemes, Training of Industry Personnel, Continuing Education.
 - **Human resource & Skill development.**
 - **Innovation, Entrepreneurship & Start-up Ecosystem:**

- Start-ups and Incubation in the Technology Vertical, Attracting Private Funding (**Corporate Social Responsibility**, Voluntary Contributions and equity based), Technology Commercialization.

● **International Collaborations :**

- Academia & Industry, Faculty/Student Exchange Programs.

➤ **Features of TiHAN-IIT:**

○ **Total Area:**

- **2 Acres of land** has already been allocated in the IIT Hyderabad campus and the facilities are planned in phases.

○ **Facilities:**

- Test Tracks, Emulation of Real-World Scenarios, State of the Art Simulation Technologies, Road Infrastructure, Drone Runways and Landing Area, Mechanical Integration Facility, Centralized Control Room/Ground Control Station, Smart Poles etc.

○ **Promotion to research:**

- The developed test bed will be available for use **by all the industries, R&D labs, academia conducting research and development** in the broad areas of **autonomous navigation**.

WILL HELP REPLICATE REAL-LIFE SCENARIOS

- The new hub has been established in two acres of land within the campus and the facilities are planned in phases
- It will facilitate research grounds to investigate the functioning of unmanned and connected vehicles in a controlled environment
- It will help replicate different scenarios, ranging from frequently occurring to extreme cases that may ensue in real-life traffic operations
- All smart poles within the institute are enabled with communication providing technology with some poles designed with sprinklers to simulate rain scenario

National Mission on Interdisciplinary Cyber-Physical Systems

- The NM-ICPS is a comprehensive Mission aimed at **complete convergence with all stakeholders by establishing strong linkages between academia, industry, Government and International Organizations**. The Mission will work with all the concerned Ministries/Departments to identify their technology needs, develop solutions and technical support in CPS implementation.
- It will secure India's future by creation of a **Cyber-Physical System** ecosystem.
 - Cyber-Physical System (CPS) **combines digital/ cyber elements with physical objects** (e.g. machines, autonomous vehicles) and data with capabilities of communication, data collection & processing, computing, decision making and action.

Note:

- CPS is an integrated system involving **Sensors, Communication, Actuators, Control, interconnected computing networks and data analytics.**
- **Few Potential applications:** Driverless cars that communicate securely with each other on smart roads, Sensors in the home to detect changing health conditions, etc.
- **The Mission has four major activities:**
 - Technology Development,
 - Human Resource & Skill Development,
 - Innovation, Entrepreneurship & Start-Up Ecosystem and
 - International Collaborations.



Note:

Environment and Ecology

Highlights

- India Water Impact Summit 2020
- Problems of Punjab's Monoculture
- NGT Panel for Protection of Mahanadi Floodplain
- Himalayan Serow
- Young Champions of the Earth: UN
- Takachar: Harvesting Value from Agricultural Waste
- E20 Fuel
- Monkey Rehabilitation Centre
- Biodiversity Management Committees
- Rise in Leopard Population
- Firefly for Great Indian Bustard
- Satkosia Tiger Reserve
- Kolar Leaf-nosed Bat
- Yamuna's High Ammonia Level
- Ladakh's Tso Kar Wetland Complex: Ramsar Site
- Protests Against Eco-sensitive Zones in Narmada District

India Water Impact Summit 2020

Why in News

Recently, the 5th India Water Impact Summit (IWIS), organised by the **National Mission for Clean Ganga (NMCG)** and **Center for Ganga River Basin Management and Studies (cGanga)** has held virtually.

Key Points

➤ About the Summit:

- India Water Impact 2020 is a **five-day long summit**, hosting experts and academicians from all over the world to discuss and **debate issues related to water conservation, water security and river rejuvenation**.
- **Theme:** Comprehensive analysis and holistic management of local rivers and water bodies with focus on **Arth Ganga** - river conservation synchronised development.
- At the event, **Norwegian Institute of Bioeconomy Research** signed an MoU with cGanga for development of a **sludge management framework** in India.

➤ National Mission for Clean Ganga (NMCG):

- It is the implementation wing of the **National Council for Rejuvenation, Protection, and Management of River Ganga** also known as **National Ganga Council** (set in 2016; which replaced the NRGBA).
- NMCG was established in the year **2011** as a **registered society**.

- It has a **two-tier management structure** and comprises the **Governing Council** and **Executive Committee**.

- The aims and objectives of NMCG are:

- To ensure **effective control of pollution and rejuvenation of the river Ganga** by adopting a river basin approach to promote inter-sectoral coordination for comprehensive planning and management.
- To maintain **minimum ecological flows** in the river Ganga with the aim of ensuring water quality and environmentally sustainable development.

- In 2014, '**Namami Gange Programme**' was launched as an **Integrated Conservation Mission**, to accomplish the twin objectives of **effective abatement of pollution, conservation, and rejuvenation of National River Ganga**.

- The program is **being implemented by the NMCG**, and its state counterpart organization viz., **State Program Management Groups (SPMGs)**.

- It has a budget outlay of **₹20,000 crore**. The **main pillars** of the programme are:

- Sewerage Treatment Infrastructure & Industrial Effluent Monitoring,
- River-Front Development & River-Surface Cleaning,
- Bio-Diversity & Afforestation, and
- Public Awareness.

➤ Centre for Ganga River Basin Management and Studies (cGanga):

- It was established at the **Indian Institute of Technology, Kanpur (IITK)** in 2016.

Note:

- The Centre is a **Centre of Excellence** for data collection, the creation and dissemination of knowledge and information for the sustainable development of Ganga River Basin.
- The centre acts in the capacity of a **comprehensive think-tank to the National Mission for Clean Ganga (NMCG)**, in its stated goals and objectives vis-à-vis the Ganga River Basin.

Problems of Punjab's Monoculture

Why in News

Amidst the ongoing **farmer's protests**, questions are being raised on the sustainability of **paddy-wheat cultivation**, especially in Punjab.

Key Points

- **Monoculture in Punjab:**
 - Monoculture is the agricultural practise of growing **a single crop, plant, or livestock species, variety, or breed in a field or farming system** at a time.
 - Wheat and paddy constitute about **84.6% of the total area** planted to all crops compromising on pulses, maize, bajra and oilseeds cotton.
- **Problem of Monoculture:**
 - Growing the same crops year after year on the **same land increases vulnerability to pest and disease attacks**. The more the crop and genetic diversity, the more difficult it is for insects and pathogens to devise a way to pierce through plant resistance.
 - Wheat and paddy **cannot fix nitrogen from the atmosphere** unlike pulses and legumes. Their continuous cultivation without any crop rotation leads to **depletion of soil nutrients** and **growing dependence on chemical fertilisers and pesticides**.
- **Suggestions:**
 - **Reducing acreage area** for wheat and promoting the cultivation of **alternate crops** like coarse grains will lead to **crop diversification** in the region bringing in better soil resilience and added nutritional benefits to the locals.
 - **Shifting paddy cultivation** to eastern and southern states, planting of **only shorter-duration** varieties of paddy crop which mature early without any effect on production, **metering of electricity** and

direct seeding of paddy further address the issue of monoculture and depleting groundwater.

➤ Wheat versus Paddy:

○ Wheat:

- It is **naturally adapted** to Punjab's **soil and agro-climatic conditions**.
- It is a **cool-season crop** that can be grown only in regions particularly north of the Vindhyas where day temperatures are within the early-thirty degrees Celsius range right through March.
- Its cultivation is desirable for **national food security**.
- The state's wheat yields at **5 tonnes-plus per hectare**, as against the national average of **3.4-3.5 tonnes**.

○ Paddy:

- It requires a **huge amount of water**.
- Farmers usually irrigate wheat five times. In paddy, 30 irrigations or more are given.
- **Punjab's groundwater table** has been **declining by 0.5 meters per annum** on an average due to paddy and the state's policy of supplying **free power for irrigation**. It has encouraged farmers to grow long-duration water-guzzling varieties like **Pusa-44**.
- **Pusa-44** has high yield but a **long duration growth period**.
- **Long duration** means transplanting **by mid-May** (Peak Summer), to enable harvesting from October and timely planting of the next wheat crop. However, being peak summertime, it also translated into **very high water requirements**.
- Paddy, being a **warm-season crop** is not very sensitive to high-temperature stress thus can be grown in much of **eastern, central and southern India**, where **water is sufficiently available**.

➤ Punjab Preservation of Subsoil Water Act, 2009:

- It barred any **nursery-sowing** and **transplanting** of paddy before **15th May** and **15th June**, respectively and was passed for the **conservation of the groundwater**.
- If transplanting of paddy is permitted only after the monsoon rains arrived in mid-June, it also

Note:

pushed harvesting to October-end, leaving a narrow time window for sowing wheat before the 15th November deadline.

- Then, farmers have no option other than burning the paddy stubble left behind. Simply put, groundwater conservation in Punjab ends up causing air pollution in Delhi.

NGT Panel for Protection of Mahanadi Floodplain

Why in News

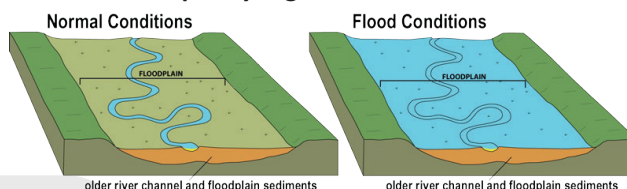
Recently, the **National Green Tribunal (NGT)** has constituted a high-level committee to identify floodplain zones of the Mahanadi, which is Odisha's largest river.

Key Points

- **Background:**
 - In **January 2020**, Chief Minister of Odisha announced that the **424 acres** reclaimed from the river Mahanadi would be utilised to add **ecological, recreational, sporting, cultural and technological value** in the lives of the people of Cuttack.
 - A local citizen approached the **NGT** against the state government's plan alleging that illegal construction activities will adversely **affect the river ecology and disturb the flow of the Mahanadi river**.
- **NGT's Order:**
 - The NGT has formed a **panel of experts** from the **Central Water Commission (CWC)**, **National Institute of Hydrology** and **state and central pollution control board** for laying down norms to ensure that the riverfront development takes place without **damage to the floodplains** of the river.
- **Legislation to Regulate the Flood Plains:**
 - There is **no central legislation** to regulate the flood plains, except a **2016 notification** issued by the **Ministry of Water Resources, River Development, and Ganga Rejuvenation**, with respect to **Ganga river**, under the **Environment (Protection) Act, 1986**, prohibiting any construction in the active floodplain area of **river Ganga or its tributaries**.
 - However, some states have laws to regulate the flood plains :
 - Manipur Flood Zoning Act, 1978
 - Uttarakhand Flood Plain Zoning Act, 2012

Floodplains

- Floodplain is an **area of low-lying ground adjacent to a river**, formed mainly by **flooding of rivers and deposition of sand sediments** on the riverbanks.
- These sandy floodplains are **exceptional aquifers** where any withdrawal is compensated by gravity flow from a large surrounding area.
- Some floodplains such as those of Himalayan Rivers contain up to **20 times more water than the virgin flow in rivers in a year**.
- Since **recharge is by rainfall and during late floods**, the **water quality is good**.



Mahanadi River

- It is the **third-largest of peninsular India** after **Godavari and Krishna**, and the **largest river of Odisha state**.
- It **rises from a place near Sihawa in Bastar hills** in the state of Chhattisgarh to the south of Amarkantak.
- **Major Tributaries:** Seonath, Hasdeo, Mand, Ib, Jonking and Tel Rivers
- **Mahanadi Basin:**
 - It 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**.
 - The Catchment area of the river extends to **Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and Maharashtra**.

Himalayan Serow

Why in News

A Himalayan serow has been **sighted for the first time** in the **Himalayan cold desert region** (Spiti, Himachal Pradesh).

Key Points

- **Description:**
Himalayan serow resembles a **cross between a goat, a donkey, a cow, and a pig**.

Note:



➤ Physical Features:

- It's a medium-sized mammal with a large head, thick neck, short limbs, long, mule-like ears, and a coat of dark hair.

➤ Species Type:

- There are **several species of serows**, and **all of them are found in Asia**.
- The Himalayan serow, or *Capricornis sumatraensis thar*, is restricted to the Himalayan region.
- Taxonomically, it is a subspecies of the mainland serow (*Capricornis sumatraensis*).

➤ Diet:

- Himalayan serows are **herbivores**.

➤ Geographical Location:

- They are typically found **at altitudes between 2,000 metres and 4,000 metres**. They are known to be found in **eastern, central, and western Himalayas**, but not in the **Trans Himalayan region**.
 - The Trans-Himalayas Mountain Region or Tibet Himalayan Region is located to the **north of the Great Himalayas** which consists of **Karakoram, Ladakh, Zaskar and Kailash mountain ranges**.

➤ Latest Sighting:

- The animal was spotted near **Hurling village in Spiti, Himachal Pradesh**.
 - Spiti lies in the **cold mountain desert region** of the western Himalaya, and its valley floor has an average elevation of **4,270 metres above sea level**, making the sighting special as Serows are generally **not found at this altitude**.
- This is the **first recorded human sighting of the serow in Himachal Pradesh**. The animal has been spotted a few times earlier in the state, but that has always been through camera traps.
- The animal has also been spotted in the **Rupi Bhaba Wildlife Sanctuary**, and in the higher reaches of Chamba.

- The Sanctuary is locally well known for its **extensive alpine pastures** as well as the numerous treks, trails and passes that connect it with the neighboring **Great Himalayan National Park** and **Pin Valley National Park**.

➤ Conservation Status:

- **IUCN Red List**: **Vulnerable**
- **CITES**: **Appendix I**
- **The Wildlife Protection Act, 1972**: **Schedule I**

Salient Features of Wildlife Protection Act, 1972

- The Act provides for the protection of a listed species of **animals, birds, and plants**, and also for the **establishment of a network of ecologically-important protected areas in the country**.
- The Act provides for the formation of **wildlife advisory boards, wildlife wardens, specifies their powers and duties**, etc.
- The Act prohibited the **hunting of endangered species**.
- The Act provides for licenses for the **sale, transfer, and possession of some wildlife species**.
- Its provisions paved the way for the formation of the **Central Zoo Authority**. This is the central body responsible for the **oversight of zoos** in India.
 - It was established in 1992.
- The Act created **six schedules which gave varying degrees of protection to classes of flora and fauna**.
 - **Schedule I and Schedule II (Part II)** get **absolute protection**, and offences under these schedules attract the maximum penalties.
 - The schedules also include species that **may be hunted**.
- The **National Board for Wildlife** was constituted as a statutory organization under the provisions of this Act.
 - It is chaired by the **Prime Minister**.
 - This is an **advisory board** that offers advice to the central government on issues of wildlife conservation in India.
 - It is also the apex body to **review and approve** all matters related to wildlife, projects of national parks, sanctuaries, etc.
 - The chief function of the Board is to promote the **conservation and development of wildlife and forests**.

Note:

Young Champions of the Earth: UN

Why in News

A 29-year-old Indian entrepreneur is among the **seven winners** of the prestigious “**Young Champions of the Earth**” 2020 prize given by the **United Nations Environment Programme (UNEP)** to global change-makers using innovative ideas and ambitious action to help solve some of the world’s most pressing environmental challenges.

Key Points

➤ About:

- Introduced in **2017**, **Young Champions of the Earth** aims to celebrate and support individuals aged between **18 and 30** who have outstanding **potential to create a positive environmental impact**.
- In 2020, seven Young Champions of the Earth will be selected from **each global region**: Africa, Europe, Latin America and the Caribbean, North America, West Asia and two from Asia and the Pacific.
- **Each winner will receive:**
 - USD 10,000 in seed funding,
 - Attendance at a high-level **UN** meeting,
 - An introduction to dignitaries at the **Champions of the Earth award** ceremony,
 - Publicity and recognition through interviews and online and global media.

➤ 7 Winners of 2020:

- **Fatemah Alzelzela, Kuwait: (Eco Star - Trees for waste)**. A non-profit recycling initiative that exchanges trees and plants for waste from homes, schools and businesses.
- **Lefteris Arapakis, Greece: (Mediterranean CleanUp)**. Trains, empowers and incentivises the local fishing community to collect plastic from the sea, allowing both fish stocks and the ecosystem to recover.
- **Max Hidalgo Quinto, Peru: (YAWA)**. Sustainable technology for access to water building portable wind turbines that harvest up to 300 litres of water per day from atmospheric humidity and mist.
- **Niria Alicia Garcia, United States of America: (Run4Salmon)**. An indigenous-lead conservation uses virtual reality to bring to life the historical

journey of the Sacramento chinook salmon along California’s largest watershed, raising awareness of this invaluable ecosystem, the species and people it supports.

- **Nzambi Matee, Kenya: (Building a Greener Kenya)**. Produces sustainable low-cost construction materials made of recycled plastic waste and sand.
- **Xiaoyuan Ren, China: (MyH₂O)**. A data platform for clean water that tests and records the quality of groundwater across a thousand villages in rural China into an app so residents know where to find clean water.
- **Vidyut Mohan, India: (Takachar)**. Harvesting value from agricultural waste.

Takachar: Harvesting Value from Agricultural Waste

➤ About:

- Takachar is a **social enterprise** founded by **Vidyut Mohan** in 2018.
- It enables farmers to prevent open burning of their waste farm residues and earn extra income by converting them into **value-added chemicals**.
- It is a meaningful and immediate solution to the **triple planetary crises** of **climate change, biodiversity loss and pollution**.

➤ Procedure:

- Takachar buys rice husks, straw and coconut shells from farmers and turns them into charcoal, saving the debris from the fires, which are also a driver of climate change.

➤ Benefits:

- Open burning of agricultural residues is a big source of air pollution in many parts of the world and this innovative technology can help farmers turn what is currently thought of as waste into a valuable resource while helping clean up our environment.
- Enables **rural farmers to earn 40% more** by converting their crop residues into fuels, fertilisers and value-added chemicals like activated carbon (AC) on-site.

➤ Potential:

- By 2030, Takachar will impact 300 million farmers affected by this problem, create USD 4 billion/year equivalent in additional rural income and jobs, and mitigate one gigaton/year of CO₂ equivalent.

Note:

United Nation Environment Program

- United Nations Environment Programme (UNEP), was **established in 1972** to guide and coordinate **environmental activities** within the United Nations (UN) system.
- UNEP promotes international cooperation on environmental issues, provides guidance to UN organizations.
- Through its scientific advisory groups, UNEP encourages the international scientific community to participate in formulating policy for many of the UN's environmental projects.
- UNEP is **headquartered in Nairobi, Kenya**.
- The organization also encourages **participation by the private sector** to promote the sustainable use of the world's natural resources.
- **Major Reports:** Emission Gap Report, **Global Environment Outlook**, Frontiers, Invest into Healthy Planet.
- **Major Campaigns:** Beat Pollution, UN75, World Environment Day, Wild for Life.

E20 Fuel

Why in News

Recently, the Indian government has invited public comments for introducing adoption of **E20 fuel to promote green fuel like ethanol**.

Key Points

- **Composition:** E20 fuel is a **blend of 20% of ethanol with gasoline**.
 - The **current permissible level of blending is 10% of ethanol**, though India reached **only 5.6% of blending in 2019**.
- **Significance:**
 - It will help in **reducing emissions of carbon dioxide, hydrocarbons, etc.**
 - It will help **reduce the oil import bill**, thereby saving foreign exchange and boosting energy security.
- **Compatibility of Vehicles:** As per the government, the **compatibility of the vehicle to the percentage of ethanol** in the blend of ethanol and gasoline shall be defined by the vehicle manufacturer and the same shall be **displayed on the vehicle by putting a clearly visible sticker**.

Green Fuel

- **Green fuel, also known as biofuel**, is a type of fuel **distilled from plants and animal materials**, believed by some to be more environmentally friendly than the widely-used fossil fuels that power most of the world.
- **Types:**
 - **Bioethanol**
 - It is **derived from corn and sugarcane** using the fermentation process.
 - A **litre of ethanol** contains approximately **two thirds of the energy provided by a litre of petrol**.
 - When mixed with petrol, it **improves the combustion performance** and **lowers the emissions of carbon monoxide and sulphur oxide**.
 - **Biodiesel**
 - It is **derived from vegetable oils** like soybean oil or palm oil, **vegetable waste oils**, and **animal fats** by a biochemical process called **"Transesterification."**
 - It produces very less or no amount of harmful gases as compared to diesel.
 - **Biogas**
 - It is **produced by anaerobic decomposition of organic matter** like sewage from animals and humans.
 - Major proportion of biogas is methane and carbon dioxide, though it also has small proportions of hydrogen sulfide, hydrogen, carbon monoxide and siloxanes.
 - It is commonly **used for heating, electricity and for automobiles**.
 - **Biobutanol**
 - It is produced in the same way as bioethanol i.e. through the fermentation of starch.
 - The **energy content in butanol is the highest among the other gasoline alternatives**. It can be added to diesel to reduce emissions.
 - It **serves as a solvent in the textile industry** and is also used as a base in perfumes.
 - **Biohydrogen**
 - Biohydrogen, like biogas, **can be produced using a number of processes such as pyrolysis, gasification or biological fermentation**.
 - It can be the **perfect alternative for fossil fuel**.

Note:

➤ Initiatives to Promote Biofuels:

- **Ethanol Blended Petrol (EBP) programme:** To extract the fuel from surplus quantities of food grains such as maize, jawar, bajra fruit and vegetable waste.
- **Pradhan Mantri JI-VAN Yojana, 2019:** The objective of the scheme is to create an ecosystem for setting up commercial projects and to boost research and development in the 2G Ethanol sector.
- **GOBAR (Galvanizing Organic Bio-Agro Resources) DHAN scheme, 2018:** It focuses on managing and converting cattle dung and solid waste in farms to useful compost, biogas and bio-CNG, thus keeping villages clean and increasing the income of rural households.
 - It was launched under Swachh Bharat Mission (Gramin).
- **Repurpose Used Cooking Oil (RUCO):** It was launched by the **Food Safety and Standards Authority of India (FSSAI)** and aims for an ecosystem that will enable the collection and conversion of used cooking oil to biodiesel.
- **National Policy on Biofuels, 2018:**
 - The Policy categorises biofuels as “Basic Biofuels” to enable extension of appropriate financial and fiscal incentives under three categories:
 - **First Generation (1G)** ethanol & biodiesel and “Advanced Biofuels”.
 - **Second Generation (2G)** ethanol, Municipal Solid Waste (MSW) to drop-in fuels.
 - **Third Generation (3G)** biofuels, bio-CNG etc.
 - It **expands the scope of raw material for ethanol production** by allowing use of sugarcane juice, sugar containing materials like sugar beet, sweet sorghum, starch containing materials like corn, cassava, damaged food grains like wheat, broken rice, rotten potatoes, unfit for human consumption, for ethanol production.
 - The Policy **allows use of surplus food grains for production of ethanol** for blending with petrol with the approval of National Biofuel Coordination Committee.
 - With a **thrust on Advanced Biofuels**, the Policy indicates a viability gap funding scheme for 2G ethanol Bio refineries of ₹5000 crore in 6 year in addition to additional tax incentives, higher purchase price as compared to 1G biofuels.

Monkey Rehabilitation Centre

Why in News

A rescue and rehabilitation centre for monkeys (Primate) was opened recently in **Telangana**.

Key Points

- A primate is **any mammal of the group** that includes lemurs, lorises, tarsiers, monkeys, apes, and humans.
- It is the **second such facility** for the **primates** in the country. The other such facility in the country is in **Himachal Pradesh**.
- Previously the Ministry of Environment, Forest and Climate Change had declared **Monkeys (Rhesus Macaque)** as ‘**vermin**’ in Himachal Pradesh.
 - It allowed local authorities to cull this animal in certain identified non-forest areas in Shimla for one year.
 - The state government reported harm to life and property including large-scale destruction of agriculture due to the overpopulation of this species outside forests.
 - Rhesus Macaque monkeys are protected species under **Schedule II** of the **Wildlife (Protection) Act, 1972**. The law allows for it to be hunted by declaring it ‘**vermin**’ for a specific period if it poses a danger to human life or property.
- **Vermin Animal:**
 - As per **Section 62 of the Wildlife Protection Act, 1972**, states can send a list of wild animals to the Centre requesting it to declare them vermin for selective slaughter.
 - Wildlife laws divide species into ‘**schedules**’ ranked from **I to V**. Schedule I members are the best protected, in theory, with severe punishments meted out to those who hunt them.
 - Wild boars, nilgai and rhesus monkeys are **Schedule II and III members**, they are also protected, but can be **hunted under specific conditions**.

Note:

Biodiversity Management Committees

Why in News

The **National Green Tribunal** has extended the time limit for the constitution of **Biodiversity Management Committees (BMCs)** and preparation of **People's Biodiversity Registers (PBRs)** on account of the **Covid-19 pandemic**.

Key Points

- **Biodiversity Management Committees (BMC)**
 - As per the **Biological Diversity Act 2002**, BMCs are created for “**promoting conservation, sustainable use and documentation of biological diversity**” by **local bodies** across the country.
 - **Composition:**
 - It shall consist of a **chair person** and **not more than six persons nominated by the local body**, of whom not less than one third should be women and not less than 18% should belong to the **Scheduled Castes/ Scheduled Tribes**.
 - The main function of the BMC is to prepare **People's Biodiversity Register** in consultation with the **local people**.
- **People's Biodiversity Registers (PBR):**
 - The Registers entail a **complete documentation of biodiversity** in the area plants, food sources, wildlife, medicinal sources, etc.
 - **Advantages of PBR:**
 - A good PBR will aid in **tracing how habitats are changing**, and to understand and estimate parts of our forests.
 - **Prevent Biopiracy:**
 - The **indigenous and local community** are a repository of traditional knowledge and their knowledge and practices help in **conservation and sustainable development of biodiversity**.
 - Being a bottom-up exercise, it is also a means of understanding the **overlap of cultural and natural biodiversity**.
 - It envisages a decentralised way through an **inclusive approach**.

Biodiversity Governance in India

- India's **Biological Diversity Act 2002** (BD Act), is in close synergy with the **Nagoya Protocol** and aims to implement provisions of the **Convention on Biological Diversity (CBD)**,
 - The Nagoya Protocol sought to **ensure commercial and research utilisation of genetic resources** led to **sharing its benefits** with the government and the community that conserved such resources.
- The BD Act was hailed as an important step towards preserving **India's vast biodiversity**, as it recognised the **sovereign right of countries over its natural resources**.
- The BD Act seeks to address issues of **managing bio-resources in the most decentralised** manner possible.
- The BD Act envisages **three layered structures**:
 - The **National Biodiversity Authority (NBA)** at the national level.
 - The **State Biodiversity Boards (SSBs)** at the state level
 - **Biodiversity Management Committees (BMCs)** at the local level.
- The act also strengthens the country's stand with respect to anyone claiming an **intellectual property right over biodiversity-related knowledge**.

Convention on Biological Diversity (CBD)

- A **legally binding treaty** to conserve biodiversity has been in force since 1993. It has **3 main objectives**:
 - The **conservation** of biological diversity.
 - The **sustainable use** of the components of biological diversity.
 - The **fair and equitable sharing of the benefits arising out of the utilization of genetic resources**.

Rise in Leopard Population

Why in News

As per a recent report '**Status of leopards in India, 2018**' released by the Ministry of Environment, Forest and Climate Change there has been a “**60 % increase in the population count of leopards in India from 2014 estimates**”.

Note:

Key Points

- The 2014 estimates placed the population of leopards at nearly **8,000 which has increased to 12,852**.
- The largest number of leopards have been estimated in **Madhya Pradesh** (3,421) followed by **Karnataka** (1,783) and **Maharashtra** (1,690).
- Region wise distribution:
 - **Central India and Eastern Ghats have the highest number of leopards** at 8,071.
 - **Western Ghats**: 3,387 leopards
 - **Shivalik and Gangetic Plains**: 1,253 leopards
 - **Northeast hills**: 141 leopards
- While the estimated number of leopards has increased, the report alerts that the leopard habitat area has been **shrinking alarmingly** over the past 100-125 years.
- **Techniques Used**:
 - Camera Traps
 - Satellite Imaging
 - Field work by the **Wildlife Institute of India** and **National Tiger Conservation Authority** (NTCA).
- **Limited Coverage**:
 - While the presence of the leopard is **fairly ubiquitous**, the study has been conducted only in tiger- populated forests areas under **Project Tiger**.
 - Leopard populations in other **agricultural, non-forested areas like tea and coffee plantations**, and in **most parts of the North East** have **not been conducted**.
- **Threats to Leopard**:
 - Fragmentation of forests as well as the decline in quality of forests leading to habitat loss.
 - Human-Leopard conflict
 - Poaching
 - Depletion of natural prey base
- **Conservation Status**:
 - **International Union for Conservation of Nature**(IUCN): Vulnerable
 - **Convention on International Trade in Endangered Species of Wild Fauna and Flora**(CITES): Appendix I
 - Appendix I:
 - It lists species that are the **most endangered** among CITES-listed animals and plants.

○ **Wildlife Protection Act 1972: Schedule 1**

- **Schedule I and part II of Schedule II** provide **absolute protection to threatened species**. Offences under these are prescribed the highest penalties.

Wildlife Institute of India

- Wildlife Institute of India (WII) is an **autonomous institution** under the **Ministry of Environment, Forest and Climate Change**.
- It was established in **1982**.
- It is based in **Dehradun, Uttarakhand**.
- It offers training programs, academic courses, and advisory in wildlife research and management.

National Tiger Conservation Authority

- National Tiger Conservation Authority (NTCA) is a **statutory body** under the **Ministry of Environment, Forests and Climate Change**.
- It was established in 2005 following the recommendations of the Tiger Task Force.
- It was constituted under enabling provisions of the **Wildlife (Protection) Act, 1972, as amended in 2006**, for strengthening tiger conservation, as per powers and functions assigned to it.

Firefly for Great Indian Bustard

Why in News

The **Ministry of Environment Forest and Climate Change** (MoEFCC) along with the **Wildlife Conservation Society** (WCS) India has come up with a unique initiative a **"firefly bird diverter"** for **overhead power lines** in areas where **Great Indian Bustard** (GIB) populations are found in the wild.

- The **Wildlife Conservation Society** is a **non-governmental organization** headquartered in New York, that aims to conserve the world's largest wild places in 14 priority regions.

Key Points

- **About**:
 - Firefly bird diverters are **flaps installed on power lines**. They work as reflectors for bird species like the GIB. Birds can **spot them from a distance of**

Note:

about 50 meters and change their path of flight to avoid collision with power lines.

- Smaller birds can change their direction but for larger bird species, it is difficult because of their **body weight** and other factors.
- Since great Indian bustards are heavy birds with limited frontal vision, they find it difficult to change their course of flight swiftly even if they spot a live wire.
- The diverters are called fireflies because they look like **fireflies from a distance, shining on power lines in the night.**



➤ Background:

- According to a report by the MoEFCC, power lines (especially **high-voltage transmission lines**) with multiple overhead wires, are the most important current threat for GIBs in the **Thar region**, and are causing **unsustainably high mortality.**
- The Supreme Court of India, in a recent hearing, directed that **power lines in GIB landscapes should be placed underground.**

Great Indian Bustard

➤ About:

- It is one of the **heaviest flying birds** in the world.
- Scientific Name: ***Ardeotis nigriceps***

➤ Habitat:

- Bustards generally favour **flat open landscapes** with minimal visual obstruction and disturbance, therefore adapt well in **grasslands.**
- Its population is confined mostly to **Rajasthan and Gujarat.** Small populations occur in **Maharashtra, Karnataka and Andhra Pradesh.**

➤ Protection Status:

- **International Union for Conservation of Nature status:** Critically Endangered

- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):** Appendix 1
- **Wildlife (Protection) Act, 1972:** Schedule 1
- It is one of the species for the **recovery programme** under the **Integrated Development of Wildlife Habitats** of the Ministry of Environment, Forests and Climate change.
- The **Great Indian Bustard, Asian Elephant and Bengal Florican** have been included in **Appendix I of the UN Convention on Migratory Species** at the **13th Conference of the Parties (COP)** to the Convention on Migratory Species (CMS) in Gandhinagar (Gujarat).

➤ Threats:

- Collision/electrocution with power transmission lines.
- Hunting (still prevalent in Pakistan).
- Irrigation and farming technology.
- Mining.
- Wind turbines and Solar farms (photovoltaic power stations).
- Plantation of exotic shrub/tree species in deserts and grasslands in the name of afforestation.

Satkosia Tiger Reserve

Why in News

Recently, the **National Tiger Conservation Authority** has asked Odisha to submit a status report on the **adverse impact of tourism** on Satkosia Tiger Reserve.

Key Points

- **Satkosia Tiger Reserve, Bhubaneswar** comprises **two adjoining sanctuaries of central Odisha** named as **Satkosia Gorge Sanctuary** and **Baisipalli Sanctuary.**
 - These two sanctuaries together covering an area of 963.87 sq km were **notified as Tiger Reserve in December 2007.**
- Lying in a **transitional zone** extending between the **Chhota Nagpur Plateau** and the **Deccan Plateau**, the tiger reserve **exhibits endemic life forms of both biotic provinces.**
- **Flora and Fauna:**
 - The area supports **moist deciduous forest, dry deciduous forest and moist peninsular Sal forest.**

Note:

- This area is the home for **Tiger, Leopard, Elephant, Gaur**, Chousingha, **Sloth bear**, Wild dog, varieties of resident and migratory birds, reptilian species, etc.
- **Crocodile Conservation:**
 - In March 1974, the **Forest Department of the Government of Orissa** with technical support from the **United Nations Development Programme (UNDP)** and the **Food and Agriculture Organization (FAO)** started a breeding programme of crocodiles.
 - In **March 1975**, the **Gharial Research and Conservation Unit (GRACU)** was started, which has done pioneering work in **crocodile conservation** in India.
 - The activities include conservation breeding, releasing of reared crocodiles into the wild and its rehabilitation.
- **Satkosia Gorge Sanctuary:**
 - It owes its name to the **narrow stretch of River Mahanadi** i.e. "**Sat-Kosh**" or seven miles long near **Tikarpada**, 60 km south of Angul.
 - The area was **made a sanctuary in 1976** and spreads out in four districts of Odisha namely Angul, Budh, Cuttack and Nayagarh.
 - The Satkosia Gorge is a **unique feature in geomorphology of India** because here **Mahanadi cuts right across the Eastern Ghats** and has formed a magnificent gorge.
 - **Fauna:** It is known for Gharials, Mugger crocodile and rare freshwater turtles like Chitra indica and Indian softshell turtle.
- **Baisipalli Sanctuary:**
 - It gets its name from the **22 settlements existing within its span**.
 - It was given the status of **sanctuary in May 1981**.
 - It is located where the **Mahanadi River passes through a gorge in the Eastern Ghats** mountains in **Nayagarh District**.
 - The whole area is a part of the **Deccan Peninsula Biogeographic Zone, Eastern Plateau province and Eastern Ghat sub-division**.
 - **Flora and Fauna:** It is a **sal dominated forest** with a significant number of tigers, leopards, elephants, herbivores like Chousingha and water birds, reptilians, etc.

Major Protected Areas in Odisha

- **National Parks:**
 - Bhitarkanika National Park
 - Simlipal National Park
- **Wildlife Sanctuaries:**
 - Badrama WLS
 - **Chilika** (Nalaban) WLS
 - Hadgarh WLS
 - Kotagarh WLS
 - **Nandankanan WLS**
 - Lakhari Valley WLS
 - Gahirmatha (Marine) WLS

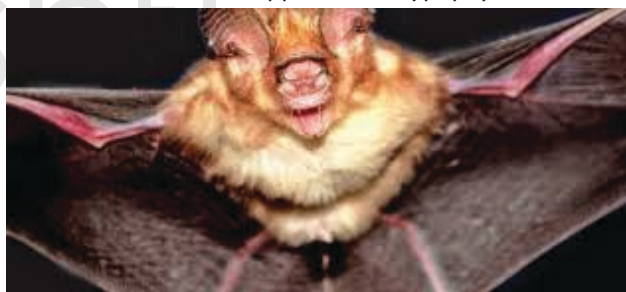
Kolar Leaf-nosed Bat

Why in News

- The **Karnataka Forest Department**, along with the **Bat Conservation India Trust (BCIT)**, is getting prepared **to save the Kolar leaf-nosed bat from extinction**.
 - BCIT is a **non-profit organization** which was conceived for the protection of bat species in India by protecting their habitat. It is **headquartered in Bengaluru, Karnataka**.

Key Points

- **Scientific Name:** *Hipposideros hypophyllus*



- **Geographic Range:** It is **endemic to India**. It is **presently known only from one cave in Hanumanahalli village in Kolar district, Karnataka**.
- **Threats:**
 - Habitat loss from **land-use change, hunting, and stone quarrying** in the region.
 - Till several years ago, the Kolar Leaf-Nosed Bat **was found in only two caves in the village of Hanumanahalli**. For reasons that are still unknown, the bat **became locally extinct in one of the two caves**.

Note:

- **Protection Status:**
 - **IUCN Red List:** Critically Endangered
 - **Wildlife Protection Act, 1972:** It has not been accorded legal protection under the Act.
- **Conservation Efforts:**
 - The government had **notified the 30 acres around the caves as a protected area.**
 - Any development work here, including the construction of new infrastructure, will **need the permission of the National Board for Wildlife.**
 - The **Bat Conservation Indian Trust** has been **awarded a grant** to conduct further research on this species of bats.
 - It is running an **intensive awareness campaign** in the nearby communities and they have come to understand the threat to the species and have started guarding this area against encroachers.
- **Concerns:**
 - Bats are **one of the least studied mammals in the country**, though there are **130 species in India.**
 - Bats are **vital for the ecology as they are pollinators**, their main diet being nectar.
 - Bats also **help in insect control** and therefore, **help in the protection of crops.**
 - They are **very adaptable creatures** and therefore can often be found **near human habitation** or even in urban settlements, which **makes them vulnerable.**
 - They also have a **bad image** in the public eye, as **carriers of diseases.**
- **Suggestions:**
 - There is an urgent need to **curb illegal granite mining and quarrying** within five to ten-kilometre radius of the roost (resting-place) to ensure the quality of other subterranean caves in the area.
 - Meanwhile, **widespread cave explorations and acoustic sampling** are recommended to understand the distribution of the species.

Yamuna's High Ammonia Level

Why in News

High levels of **ammonia** in Yamuna is resulting in frequent disruption to Delhi's water supply.

Key Points

- Recently, ammonia levels shot up to **7.3 parts per million (ppm)** at some places.
 - When the concentration rises beyond the Delhi Jal Board's (DJB's) **treatment capacity of 0.9 ppm**, water production has to be stopped or reduced in water treatment plants.
 - As per the **Bureau of Indian Standards (BIS)**, the **acceptable maximum limit of ammonia in drinking water is 0.5 ppm.**
- **Causes of Pollution in Yamuna:**
 - **Industrial Pollution:**
 - The Yamuna flows into Delhi from Haryana and the state has **industrial units in Sonipat** (on the banks of Yamuna). Ammonia is used as an industrial chemical in the production of fertilisers, **plastics and dyes.**
 - Mixing of drains:
 - Mixing of two drains carrying drinking water and sewage or industrial waste, or both, in Sonipat. The two drains often **mix due to overflow or damage to the wall** that separates them.
- **Effects of Rising Ammonia:**
 - Ammonia reduces the amount of oxygen in water as it is **transformed to oxidised forms of nitrogen.** Hence, it also increases **Biochemical oxygen demand (BOD).**
 - Water pollution by organic wastes is measured in terms of BOD.
 - If the concentration of ammonia in water is **above 1 ppm**, it is **toxic to fishes.**
 - In **humans**, long term ingestion of water having ammonia levels of **1 ppm or above may cause damage to internal organs.**
- **Solution:**
 - **Ozone-based units** to treat ammonia levels up to 4 ppm should be installed at Water Treatment Plants.
 - The laying of a **conduit pipeline to separate drain carrying potable water and sewage water.**
 - The **National Green Tribunal-appointed Yamuna Monitoring Committee** has also said that fast-track approvals should be given to build a conduit.

Note:

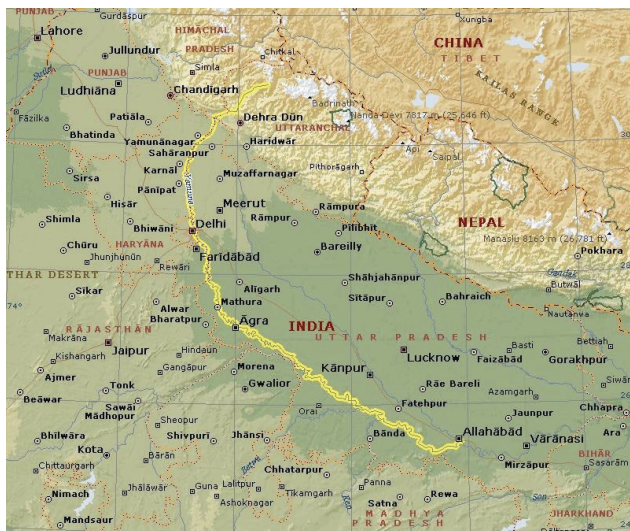
- The Committee had also recommended to the Ministry of Jal Shakti earlier this year to rework the 1994 **water sharing pact** between **Uttarakhand, Himachal Pradesh, Haryana, Delhi and UP** to revive the river by releasing more fresh water into it.

Ammonia

- Its chemical formula is NH_3 .
- It is a **colourless gas** and is used as an **industrial chemical** in the **production of fertilisers, plastics, synthetic fibres, dyes and other products**.
- It occurs naturally in the environment from the breakdown of **organic waste matter**, and may also find its way to ground and surface water sources through **industrial effluents, contamination by sewage or through agricultural runoff**.

Yamuna

- The river Yamuna, a major **tributary of river Ganges**, originates from the **Yamunotri glacier** near **Bandarpooch peaks** in the Mussoorie range of the lower Himalayas in Uttarkashi district of Uttarakhand.
- It meets the **Ganges at the Sangam in Prayagraj**, Uttar Pradesh after flowing through **Uttarakhand, Himachal Pradesh, Haryana and Delhi**.
- **Length:** 1376 km
- **Important Dam:** Lakhwar-Vyasi Dam (Uttarakhand), Tajewala Barrage Dam (Haryana) etc.
- **Important Tributaries:** Chambal, Sindh, Betwa, Ken, Tons, Hindon



Ladakh's Tso Kar Wetland Complex: Ramsar Site

Why in News

Recently, India has added **Tso Kar Wetland Complex** in Ladakh as its **42nd Ramsar site**, a conservation status conferred by **International Ramsar Convention on Wetlands**.

- Previously, the **Lonar lake in Maharashtra and Sur Sarovar** (also known as **Keetham lake**) in Agra were added to the list of Ramsar sites.

Key Points

- **About Tso Kar Wetland Complex:**



- The Tso Kar Basin is a **high-altitude wetland complex**, consisting of two principal waterbodies:
 - **Startsapuk Tso**, a **freshwater lake** of about 438 hectares to the south,
 - **Tso Kar** itself, a **hypersaline lake** of 1800 hectares to the north, situated in the **Changthang region of Ladakh**.
- It is called **Tso Kar**, meaning **white lake**, because of the **white salt efflorescence** found on the margins **due to the evaporation of highly saline water**.
- It is an **A1 Category Important Bird Area (IBA)** as per **Bird Life International** and a **key staging site** in the **Central Asian Flyway**.
- **Important Bird Area (IBA):**
 - The IBA programme of the Bird Life International aims to identify, monitor

Note:

and protect a global network of IBAs for conservation of the world's birds and associated biodiversity.

- **Bird Life International** is a global partnership of non-governmental organizations that strives to conserve birds and their habitats.
- **Central Asian Flyway (CAF):**
 - It covers a **large continental area of Eurasia between the Arctic and Indian Oceans** and the associated island chains.
 - The Flyway **comprises several important migration routes** of waterbirds, most of which **extend from** the northernmost breeding grounds in the Russian Federation (**Siberia**) to the southernmost non-breeding (wintering) grounds in **West and South Asia**, the Maldives and the British Indian Ocean Territory.
 - It covers at least **279 populations** of **182 migratory waterbird** species, including **29 globally threatened species**.
- The site is also one of the most important breeding areas of the **near threatened Black-necked Crane (*Grus nigricollis*)** in India.
- It is the major breeding area for **Great Crested Grebe (*Podiceps Cristatus*)**, **Bar-headed Geese (*Anser Indicus*)**, **Ruddy Shelduck (*Tadorna ferruginea*)**, **Brown-headed Gull (*Larus Bunocephalus*)**, **Lesser Sand-Plover (*Charadrius Mongolus*)** and many other species.
- **Importance of Wetlands:**
 - **Wetlands** are defined as "lands transitional between terrestrial and aquatic eco-systems where the water table is usually at or near the surface or the land is covered by shallow water".
 - Wetlands **provide** a wide range of **important resources and ecosystem services** such as food, water, fibre, groundwater recharge, water purification, flood moderation, erosion control and climate regulation.
 - They are, in fact, a **major source of water** and the main supply of freshwater comes from an array of wetlands which **help soak rainfall and recharge groundwater**.

Ramsar Site

- Ramsar Convention on Wetlands is an **intergovernmental treaty adopted in 1971** in the Iranian city of Ramsar, on the southern shore of the Caspian Sea.
- It came into **force for India on 1st February, 1982**.
- Those **wetlands which are of international importance** are declared as Ramsar sites.
- The Convention's mission is the **conservation and wise use of all wetlands** through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world.
- The **Montreux Record** is a **register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred**, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.
 - It is **maintained as part of the Ramsar List**.
- At present, **two wetlands** of India are in **Montreux Record**:
 - **Keoladeo National Park** (Rajasthan) and
 - **Loktak Lake** (Manipur).
 - **Chilika Lake** (Odisha) **was placed in the record but later removed** from it.

Protests Against Eco-sensitive Zones in Narmada District

Why in News

Recently, **tribal communities in Gujarat have been protesting** against the **Ministry of Environment, Forest and Climate Change (MoEFCC)** order classifying 121 villages around the **Shoolpaneshwar Wildlife Sanctuary** in **Narmada district** as **eco-sensitive zones**.

- They have appealed to the centre to withdraw the notification to mitigate the protests.
- Tribes like **Tadvi** and **Vasava** have been concerned ever since **Kevadia village** of Narmada district was developed into a **tourism circuit around the Statue of Unity** (SoU).

Note:

Key Points

➤ Reasons Behind Protests:

- **Land falling in the eco-sensitive zone**, including land used for agricultural use and plots reserved for parks, **cannot be transferred for non-agricultural use** for commercial, industrial or residential purposes.
 - Any land that needs to be transferred can be done so **only after approval from the state government**.
- A process has been initiated to include the **state government as the co-owner** of the land in the 121 villages.
 - Tribals are apprehensive of the order as they **were not taken into confidence**.
- The notification, combined with the formation of the **SoU Tourism Authority** (SoUTA or also known as the **SoU Area Development and Tourism Governance Authority**), has **increased administrative needs owing to the booming tourism** and has **left tribals in a state of mistrust and fear**.
 - They feel the simultaneous implementation of the two government decisions **could dilute the "power" vested with villagers under the Panchayat (Extension of Scheduled Areas) Act (PESA Act), 1996**, implemented in areas notified under **Schedule V** of the Constitution.
 - **Fifth and Sixth Schedules** provide for **alternate or special governance mechanisms for certain schedule areas**.
- **Panchayat (Extension of Scheduled Areas) Act, 1996:**
 - Gujarat notified the **State PESA Rules in January 2017**, applicable in 4,503 gram sabhas in eight districts of the state.
 - The Act promised a **separate security force for the gram sabhas** that would have complete power to decide their issues.
 - The provisions of the law deem the **gram sabhas as "most competent" to deal with matters related to their territories** for safeguarding their customs, traditions as well as the natural resources in the tribal areas.
 - However, the **Act has not been enforced in letter and spirit**, according to legal experts.

Statue of Unity Tourism Authority

- The government passed the **SoU Area Development and Tourism Governance Authority or the SoU Tourism Authority (SoUTA) Bill in 2019**.

- The Bill **sets aside ₹10 crore** from the **consolidated fund of the state** for the discharge of functions and duties by SoUTA.

- While activists and legal experts feel the Act will overpower the provisions of PESA, officials say rules of SoUTA are yet to be clarified.

➤ Functions:

- It will **largely work as a local body that will prepare and execute a development plan** or a town planning scheme, remove encroachments and provide civic amenities like water supply, transportation, power supply, drainage, hospitals, medical services, schools, public parks, markets, shopping places, and disposal of waste, among others.

➤ Powers:

- **Acquiring immovable property** under the **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013**.
- **Taking punitive action** against those violating/encroaching it.
- **Defining the limits** of the tourism development area.
- **Persons authorised can enter any land or building** between sunrise and sunset by giving its occupant a notice of at least 24 hours.
- **Shields the authority and its members from any legal proceeding or prosecution** for anything which is in good faith done or intended to be done in pursuance of the provisions of this Act or any rules or regulations made thereunder.

➤ Assistance:

- **Police can assist the authority in prohibiting any nuisance** being caused or prevent any such activity, process, the operation being carried out, if it opines that it will damage or deteriorate the "tourism potentiality" of the area.
- **Expenses and costs incurred**, if any, in removing or abating such nuisance, shall be **recovered as an arrear of land revenue from the person who has caused such nuisance**.

➤ Punishments:

- Persons who fail to comply with directions given by the authority shall be **punishable with imprisonment for up to a month** or with a **fine up to ₹50,000, or both**. The offence will also be treated as "**cognisable and non-bailable**".

Note:

Shoolpaneshwar Wildlife Sanctuary

- It was first declared a **protected area in 1982**.
- An area of 150.87 sq. km was called the '**Dumkhal Sanctuary**', specifically created for the **protection of sloth bears**.
- In the years **1987 and 1989, more land was attributed** to conservation and the area of the sanctuary enlarged to 607.70 sq km. It was then **renamed** 'Shoolpaneshwar Sanctuary'.
- **Flora:** It is made up of a mixed forest of teak, riverine forest and deciduous dry jungles.
- **Fauna:** Sloth bear, Leopard, Rhesus macaque, Four Horned antelope, Barking deer, Pangolin, Herpetofauna, birds including Alexandrine parakeet.



Note:

History

Highlights

- Madan Mohan Malaviya Jayanti

Madan Mohan Malaviya Jayanti

Why in News

The Prime Minister of India paid tribute to **Pt. Madan Mohan Malaviya** on his **159th birth anniversary** (25th December, 2020).

Key Points

- **Birth:** 25th December 1861, in **Allahabad** (now **Prayagraj**) in Uttar Pradesh.
- **Brief Profile:**
 - He was a great educationist, an eloquent rhetorician, a national leader.
 - He took part in numerous activities like the **freedom struggle movements**, promotion of industries, the **economic and social development of the country**, education, religion, social service, **development of Hindi language** and many other issues of national importance throughout his life.
 - He was given the **title of 'Mahamana'** by Mahatma Gandhi and the second President of India, **Dr. S. Radhakrishnan** gave him the status of a '**Karmayogi**'.
- **Role in Freedom Struggle:**
 - In the freedom struggle, he was **midway between** the Liberals and the Nationalists, the Moderates and the Extremists, as the followers of **Gokhale** and **Tilak** were respectively called.
 - In 1930, when **Mahatma Gandhi** launched the **Salt Satyagraha and the Civil Disobedience Movement**, he participated in it and courted arrest.



- **Role in Congress:**
 - He was **elected as the President of the Congress committee** (four times) in 1909, 1918, 1932 and 1933.
- **Contributions:**
 - He is remembered for his role in **ending the Indian indenture system**, especially in the **Caribbean**.
 - Indentured labour was a system of bonded labour that was **instituted following the abolition of slavery in 1833**.
 - Indentured labour were recruited to work on sugar, cotton and tea plantations, and rail construction projects in British colonies in West Indies, Africa and SouthEast Asia.
 - Apprehensive of the possibility of the British completely damming the flow of Ganga at Bhimgoda in Haridwar, he **set up the Ganga Mahasabha in 1905**.
 - He was a social reformer and a successful legislator, serving as a **member of the Imperial Legislative Council for 11 years** (1909–20).
 - He **popularized the term 'Satyamev Jayate'**. However, the phrase originally belonged to the **Mundaka Upanishad**. The term now is the **national motto of India**.
 - **Devnagri** was introduced in the **British-Indian courts** because of Malviya's efforts with the British government.
 - He worked immensely for **Hindu-Muslim unity**. He is known to have given famous speeches on **communal harmony**.
 - He was expelled from the Brahmin community for expressing his **views on caste discrimination and Brahmanical patriarchy**.
 - He helped establish the **Hindu Mahasabha** (Great Society of Hindus) in **1915**.

Note:

- He **founded the Banaras Hindu University (BHU) in 1916.**
- **Journalist:**
 - As a journalist, he started a **Hindi weekly, *Abhyudaya* in 1907** and made it a daily in 1915 and also a **Hindi monthly, *Maryada* in 1910.**
 - He started **an English daily, *Leader* in 1909.**
 - Malaviya was the **editor of Hindi weekly, the *Hindustan* and Indian Union.**

- He was also the **Chairman of the Board of Directors of the *Hindustan Times*** for many years.
- **Death: 12th November, 1946.**
- **Awards and Honours:**
 - In **2014**, he was posthumously **conferred with *Bharat Ratna***, the country's highest civilian award.
 - In 2016, the Indian Railways started the **Varanasi-New Delhi Mahamana Express** in the leader's honour.



Note:

Geography

Highlights

- Chillai Kalan
- Winter Solstice
- Iceberg A68a

Chillai Kalan

Why in News

The **40-day intense winter period “chillai kalan”** started in Kashmir valley on 21st December with sub-zero night temperatures across the region.

- It will continue till 31st January.

Key Points

- Chillai Kalan is followed by **Chillai-Khurd** and **Chillai-Bachha**.
 - **Chillai Khurd (small cold)** is a 20-day long period which occurs between 31st January and 19th February.
 - **Chillai-Bachha (baby cold)**, a 10-day long period which occurs between 20th February and 2nd March.
- Considered to be the core of winter, Chillai Kalan usually brings snowfall, sub-zero temperatures causing freezing of water bodies including the Dal lake, closure of highways, etc.

Winter Solstice

Why in News

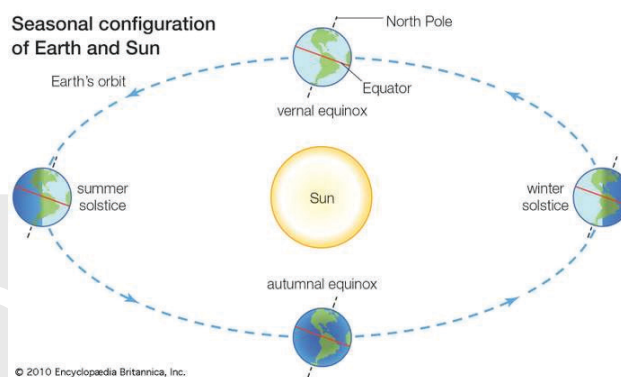
21st December or the **Winter Solstice** marks the **shortest day of the year** in the **Northern Hemisphere**. The same day marks the **Summer Solstice**, the year's **longest day**, in the **Southern Hemisphere**.

Key Points

- **Solstice:**
 - It is a **Latin word** that means ‘stalled sun’. It is a natural phenomenon that occurs **twice every year**, once in the summer and again during winter, in each hemisphere of the earth.

➤ Winter Solstice:

Seasonal configuration of Earth and Sun



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- It is the **shortest day and longest night** of the year in the **Northern Hemisphere** and is also known as the ‘**first day of winter**’ in the Northern Hemisphere as well as ‘**Hiemal solstice or Hibernial solstice**’.
- During this, **countries in the Northern Hemisphere are farthest from the Sun** and the Sun shines overhead on the **Tropic of Capricorn (23.5° south)**.
 - At latitudes of 23.5° are the Tropics of Cancer and Capricorn, north and south of the Equator.
 - At 66.5° are the Arctic and Antarctic Circles, to the north and south.
 - Latitudes are a measure of a location's distance from the Equator.
- This situation will be reversed on **21st June**, when the **Northern Hemisphere** will see the **Summer Solstice**, the year's **longest day** and the **Southern Hemisphere** will see the year's **shortest day**.
- In **Vedic tradition**, the northern movement of the Earth on the celestial sphere is implicitly acknowledged in the **Surya Siddhanta**, which outlines the **Uttarayana** (the period between **Makar Sankranti** and **Karka Sankranti**). Hence, Winter Solstice is the **first day of Uttarayana**.

Note:

○ Special Winter Solstice 2020:

- In 2020, the day is special as it coincides with a celestial event, the 'Great Conjunction' of Jupiter and Saturn, happening after nearly 400 years.
- The two planets **come in conjunction when they have the same right ascension or celestial longitude** and that is known as 'Great Conjunction'.

➤ Geography Behind:

- The reason behind the changing lengths of the days is the **Earth's tilt**.
- The **Earth's axis of rotation is tilted at an angle of 23.5° to its orbital plane**. This tilt, combined with factors such as Earth's spin and orbit, **leads to variations in the duration of sunlight**, due to which any location on the planet receives different lengths of days.
 - The Northern Hemisphere spends half the year tilted in the direction of the Sun, getting direct sunlight during long summer days. During the other half of the year, it tilts away from the Sun, and the days are shorter.
- The **tilt is also responsible for the different seasons on Earth**. This phenomenon **causes the movement of the Sun from the northern to the southern hemisphere** and vice versa **bringing in seasonal changes** in the year.

Iceberg A68a

Why in News

Iceberg A68a, which calved from Antarctica in 2017, has been **floating off the coast of South Georgia island**.

- This has prompted **fears about the impact the iceberg could have on the island's abundant wildlife**.

Key Points

➤ Iceberg:

- An iceberg is **ice that breaks off from glaciers or shelf ice** and is floating in open water.
- Icebergs **travel with ocean currents** and either get caught up in shallow waters or ground themselves.
- The **US National Ice Center (USNIC)** is the **only organisation** that **names and tracks Antarctic Icebergs**.

- Icebergs are **named according to the Antarctic quadrant** in which they are spotted.

➤ A68a:

- Shaped like a closed hand with a pointing finger, the iceberg known as A68a **split off in 2017 from Larsen Ice Shelf on the West Antarctic Peninsula**, which has warmed faster than any other part of Earth's southernmost continent.
- On its journey, **smaller icebergs have calved from the iceberg** and the **biggest section of the iceberg is called A68a** and spans an area of roughly 2,600 sq. km.
 - Recently, the **two icebergs that calved from A68a**, have been named by the USNIC. They are called **A68e and A68f**.
- All the berg fragments are entrained in a fast-moving stream of water known as the **Southern Antarctic Circumpolar Current Front**.
 - The **Antarctic Circumpolar Current (ACC)** is the most important current in the Southern Ocean, and the **only current that flows completely around the globe**.
 - The ACC, as it encircles the Antarctic continent, flows eastward through the southern portions of the Atlantic, Indian, and Pacific Oceans.
- It has been **drifting towards the remote island of South Georgia**, which is a **British Overseas Territory (BOT)**.
 - The fear is that if the iceberg grounds itself near the island, it could **cause disruption to the local wildlife** that forages in the ocean. Penguins and seals will have to travel farther in search of food.
 - On the other hand, there are some positives of an iceberg being stuck in the open ocean, since **icebergs carry dust which fertilises ocean plankton**, which draws up carbon dioxide from the atmosphere.
- The **British Antarctic Survey (BAS)** will launch a **research mission** to study **A68a's impact on the ecosystem**.
 - BAS is a component of the **Natural Environment Research Council (NERC)**, which is part of UK Research and Innovation.
 - It delivers and enables world-leading interdisciplinary research in the Polar Regions.

Note:

Calving of Glaciers

➤ Meaning:

- Calving is the **glaciological term for the mechanical loss** (or simply, breaking off) **of ice from a glacier margin**.
- Calving is most common when a glacier flows into water (i.e. lakes or the ocean) but can also occur on dry land, where it is known as **dry calving**.

➤ Process:

- Before calving occurs, **smaller cracks** and fractures in glacier ice **grow into larger crevasses**.
- The growth of crevasses effectively **divides the ice into blocks** that subsequently **fall from the snout into an adjacent lake** (where they are known as icebergs).
 - **Glacier Snout:** It is the **lowest end of a glacier**, also called **glacier terminus** or **toe**.

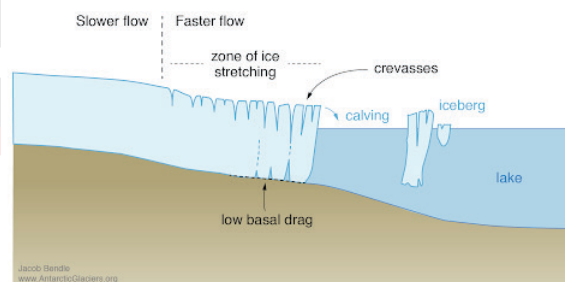
➤ Impact on Glacier Mass Balance:

- In lake-terminating (or freshwater) glaciers, calving is often a very **efficient process of ablation** and is therefore an important control on **glacier mass balance**.
 - **Ablation:** It implies combined processes (such as sublimation, fusion or melting, evaporation) which remove snow or ice from the surface of a glacier or from a snow-field.
 - **Glacier mass balance:** It is simply the gain and loss of ice from the glacier system.

➤ Global warming has increased the frequency of this process.

➤ Recent Cases of Calving:

- Up to the end of the **20th century**, the **Larsen Ice Shelf had been stable** for more than 10,000 years.
- In **1995**, however, **a huge chunk broke off, followed by another in 2002**. This was **followed by** the breakup of the nearby **Wilkins Ice Shelf in 2008 and 2009**, and **A68a in 2017**.
- **Hydrofracturing**, when water seeps into cracks at the surface, splitting the ice farther down, was **almost certainly the main culprit in each case**.
 - Hydrofracturing is a **water well development process** that involves injecting high pressure water via the well into the bedrock formation immediately surrounding it.
 - It was **originally developed for the oil and gas industry** to increase oil and gas well production.
 - On a global scale, **drilling or hydrofracturing** results in **significant greenhouse gas (GHG) emissions**, leading to global warming.



Note:

Art & Culture

Highlights

- Indigenous Games & Khelo India
- UNESCO List of Intangible Cultural Heritage of Humanity
- Eminent Dance Scholar Sunil Kothari Passes Away

Indigenous Games & Khelo India

Why in News

The Ministry of Youth Affairs and Sports has recently included **Gatka, Kalaripayattu, Thang-Ta and Mallakhamba** in Khelo India Youth Games 2021.

Key Points

- **Khelo India Youth Games (KIYG) 2021**, are scheduled to take place in **Haryana**.
 - The 2020 edition of KIYG was held in **Guwahati (Assam)**.



- KIYG is a part of the revamped **national programme for development of sports 'Khelo India'** which was approved by the Union Cabinet in 2017.
 - The Khelo India Scheme aims to **encourage sports** all over the country, thus allowing the population to **harness the power of sports** through its cross-cutting influence, namely **holistic development of children & youth, community development, social integration, gender equality, healthy lifestyle, national pride and economic opportunities** related to sports development.

- Under the Scheme, talented players identified in **priority sports disciplines** at various levels are provided **annual financial assistance of ₹5 lakh per annum for 8 years**.

➤ Gatka:

- Gatka originates from the **State of Punjab** and this **traditional fighting style** of the **Nihang Sikh Warriors** is used both as **self-defense** as well as a **sport**.
- Gatka is believed to have originated when the **6th Sikh Guru Hargobind** adopted '**Kirpan**' for self-defence during the Mughal era.
- It was earlier confined to gurudwaras, nagar kirtans and akharas, but now it finds presence in the **sports category** after the formation of the **Gatka Federation of India (GFI) in 2008**.



➤ Kalaripayattu:

- **Kalaripayattu**, also known simply as **Kalari**, is an **Indian martial art** that originated in modern-day Kerala.
- Kalaripayattu is held in high regard by martial artists due to its long-standing history within **Indian martial arts**. It is believed to be the **oldest surviving martial art in India**. It is also considered to be among the **oldest martial arts still in existence**,

Note:

with its origin in the martial arts timeline dating back to at least the 3rd century BCE.

- The place where this martial art is practised is called a 'Kalari'. It is a Malayalam word that signifies a kind of gymnasium.
 - Kalari literally means 'threshing floor' or 'battlefield'. The word Kalari first appears in the **Tamil Sangam literature** to describe both a battlefield and combat arena.



➤ Mallakhamb:

- Mallakhamb is a traditional sport, originating from the Indian subcontinent, in which a gymnast performs aerial yoga or gymnastic postures and wrestling grips with a vertical stationary or hanging wooden pole, cane, or rope
- The name Mallakhamb derives from the terms **malla**, meaning wrestler, and **khamb**, which means a pole. Literally meaning "wrestling pole", the term refers to a traditional training implement used by wrestlers.
- **Madhya Pradesh** and **Maharashtra** have been the hotspots of this sport.



➤ Thang Ta:

- **Huyen langlon** is an Indian martial art from Manipur.
- In the **Meitei language**, **huyen** means war while **langlon** or **langlong** can mean net, knowledge or art.

- **Huyen langlon** consists of two main components:
 - **Thang-ta** (armed combat)
 - **sarit sarak** (unarmed fighting).
- The primary weapons of huyen langlon are the **thang** (sword) and **ta** (spear). Other weapons include the shield and the axe.

UNESCO List of Intangible Cultural Heritage of Humanity

Why in News

Recently, the **Hawker Culture** in **Singapore** has been inscribed on the **UNESCO Representative List of the Intangible Cultural Heritage of Humanity** at the 15th session of the Intergovernmental Committee (IGC) that was held online.

Key Points

➤ Hawker Culture in Singapore:

- It is a living heritage shared by those who prepare hawker food and those who dine and mingle over hawker food in community dining spaces called hawker centres.
- It reflects Singapore's multicultural identity as a people and nation, and resonates strongly with Singaporeans across all races and social strata.

➤ UNESCO's List of Intangible Cultural Heritage:

- This coveted list is made up of those **intangible heritage elements that help demonstrate the diversity of cultural heritage** and raise awareness about its importance.
- The list was established in **2008** when the **Convention for Safeguarding of the Intangible Cultural Heritage** came into effect.

➤ Intangible Cultural Heritage of India:

13 ICH traditions recognised by UNESCO			
1.	Tradition of Vedic chanting, 2008	8.	Buddhist chanting of Ladakh: recitation of sacred Buddhist texts in the trans-Himalayan Ladakh region, Jammu and Kashmir, India, 2012
2.	Ramlila, the traditional performance of the Ramayana, 2008	9.	Sankirtana, ritual singing, drumming and dancing of Manipur, 2013
3.	Kutiyattam, Sanskrit theatre, 2008	10.	Traditional brass and copper craft of utensil making among the Thatheras of Jandiala Guru, Punjab, India, 2014
4.	Ramman, religious festival and ritual theatre of the Garhwal Himalayas, India, 2009	11.	Yoga, 2016
5.	Mudiyettu, ritual theatre and dance drama of Kerala, 2010	12.	Nowruz, 2016
6.	Kalbelia folk songs and dances of Rajasthan, 2010	13.	Kumbh Mela, 2017
7.	Chhau dance, 2010		

Note:

- The **Ministry of Culture** has also launched the **draft National List of Intangible Cultural Heritage (ICH) of India**.
 - The National ICH List is an attempt to recognize the diversity of Indian culture embedded in its intangible heritage.
 - This initiative is also a part of the **Vision 2024 of the Ministry of Culture**.

Other Initiatives of UNESCO

- **Man and Biosphere Programme:**
 - Biosphere Reserves focus on the harmonised management of **biological and cultural diversity**.
 - Out of 18 notified biosphere reserves, India has 12 biosphere reserves under the World Network of Biosphere Reserves (WNBR), the latest one included is **Panna Biosphere Reserve**.
- **World Heritage Programme:**
 - World Heritage Sites promote the **conservation of natural and cultural sites** of outstanding universal value.
 - India has **38 world heritage sites, including 30 cultural properties, 7 natural properties and 1 mixed site**. The latest one included is **Jaipur city, Rajasthan**.
- **UNESCO Global Geopark Network:**
 - UNESCO Global Geoparks give **international recognition** for sites that promote the importance and significance of protecting the **Earth's geodiversity** through actively engaging with the **local communities**.
 - **India does not have any UNESCO Global geopark**.
- **UNESCO's Network of Creative Cities:**
 - The UNESCO Creative Cities Network (UCCN) was **created in 2004** to promote cooperation with and among cities that have identified creativity as a strategic factor for sustainable urban development.
 - The Network covers seven creative fields: **Crafts and Folk Arts, Media Arts, Film, Design, Gastronomy, Literature and Music**.
 - There are **five Indian cities** in UCCN as follows:
 - Hyderabad-Gastronomy (2019).
 - Mumbai-Film (2019).
 - Chennai-Creative city of Music (2017).
 - Jaipur-Crafts and Folk Arts (2015).
 - Varanasi-Creative city of Music (2015).

Eminent Dance Scholar Sunil Kothari Passes Away

Why in News

Recently, **eminent dance scholar and critic Sunil Kothari** passed away at the age of 87.

Key Points

- He was conferred with the **fourth highest civilian award, Padma Shri**, in **2001**.
- He **authored 20 books** on **Indian classical dances** and wrote **extensively on Bharatanatyam, Kathak and Manipuri** dance forms.
 - His scholarly work, "**Sattriya: Classical Dance of Assam**", helped in creating a better understanding of the dance form in the national and global circuit.
 - His other notable contributions include **New Directions in Indian Dance** and **Kuchipudi Indian Classical Dance Art**.
- He was elected as a **Fellow of Sangeet Natak Akademi**.

Indian Classical Dances

- The Indian classical dances have **two basic aspects**:
 - **Tandava** (movement and rhythm) and **Lasya** (grace, bhava and rasa).
- **The three main components of them are:**
 - **Natya**: the dramatic element of the dance i.e. the imitation of characters.
 - **Nritta**: the dance movements in their basic form.
 - **Nritya**: expressional component i.e. mudras or gestures.
- The **nine rasas** are: Love, Heroism, Pathos, Humour, Anger, Fear, Disgust, Wonder and Peace.
- The **Natya Shastra** written by **Bharat Muni** is the most prominent source for the Indian aestheticians for establishing the characteristics of the dances.
- There are **8 classical dances in India**:
 - Bharatnatyam (Tamil Nadu)
 - Kathak (North India)
 - Kathakali (Kerala)
 - Mohiniyattam (Kerala)
 - Kuchipudi (Andhra Pradesh)

Note:

- Odissi (Odisha)
- Sattriya (Assam)
- Manipuri (Manipur)

- **Contemporary classical dance forms** have evolved out of the **musical play or sangeet-nataka** performed from the 12th century to the 19th century.

Sangeet Natak Akademi

- It is India's **national academy for music, dance and drama**.
- It was **created by a resolution of the Ministry of Education** (formerly the Ministry of Human Resource Development), Government of India, in **1952** with **Dr P V Rajamannar** as its **first Chairman**.
- It is **presently an autonomous body of the Ministry of Culture** and is **fully funded by the Government** for implementation of its schemes and programmes.
- The Akademi **establishes and looks after institutions and projects of national importance** in the field of the performing arts. **Few important ones are:**
 - **National School of Drama**, New Delhi (set up in 1959).
 - **Jawaharlal Nehru Manipur Dance Academy**, Imphal (set up in 1954).
 - **Kathak Kendra** (National Institute of Kathak Dance), New Delhi (set up in 1964).
 - **National Projects of Support** to [Kutiyattam](#) (Sanskrit theatre of Kerala), Chhau dances of eastern India, [Sattriya](#) traditions of Assam, etc.



drishti

Note:



drishti

Security

Highlights

- India-Indonesia Coordinated Patrol
- Systems Handed Over to Defence Services
- Army Variant of MRSAM
- Coastal Radar Chain Network
- Kamov-226T: Utility Helicopters

India-Indonesia Coordinated Patrol

Why in News

Recently, the 35th edition of India-Indonesia Coordinated Patrol (IND-INDO CORPAT) between the Indian Navy and the Indonesian Navy has been conducted.



Key Points

- **Background:**
 - As part of Government of India's vision of **SAGAR (Security And Growth for All in the Region)**, the Indian Navy has been proactively engaging with countries in the Indian Ocean Region for **coordinated patrols, cooperation in Exclusive Economic Zone (EEZ) surveillance, passage exercises** and **bilateral/multilateral exercises**.
 - The main **objective** is towards enhancing regional maritime security.
- **IND-INDO CORPAT:**
 - To reinforce maritime links, the two navies have been carrying out CORPAT along their International Maritime Boundary Line **since 2002**.

○ Aim:

- Ensuring **safety and security of shipping and international trade** in the region.
- CORPATs build up **understanding and interoperability between navies** and facilitate institution of measures to prevent and **suppress Illegal Unreported Unregulated (IUU) fishing, drug trafficking, maritime terrorism, armed robbery and piracy**.

○ Participants in 35th Edition:

- **Indian Naval Ship (INS) Kulish** - an indigenously built missile corvette and **P8I Maritime Patrol Aircraft (MPA)** undertook coordinated patrol along with Indonesian ships.

- **Significance:** The 35th IND-INDO CORPAT will contribute towards the Indian Navy's efforts to consolidate interoperability and **forge strong bonds of friendship across the Indo-Pacific**.

➤ Other Military Exercises with Indonesia:

- **Samudra Shakti:** A bilateral **maritime** exercise.
- **Garuda Shakti:** A joint **military** exercise.

Systems Handed Over to Defence Services

Why in News

Recently, the **Defence Minister** has handed over the **Indian Maritime Situational Awareness System (IMSAS)**, **ASTRA Mk-I** and **Border Surveillance System (BOSS)** to the Navy, Air Force and Army respectively.

- The **Defence Research and Development Organisation (DRDO)** laboratories have **indigenously developed these three systems** which will lead to higher self-reliance in defence technologies.

Note:

- The Defence Minister has also given away **awards to DRDO scientists for outstanding contributions** in various categories.

Key Points

- **Indian Maritime Situational Awareness System (IMSAS):**
 - It is a **state-of-the-art and high performance intelligent software system** that provides **Global Maritime Situational Picture, marine planning tools and analytical capabilities** to Indian Navy.
 - It also provides **Maritime Operational Picture** from naval headquarters to each individual ship in sea to enable naval command and control.
 - **Centre for Artificial Intelligence and Robotics (CAIR)**, Bengaluru and Indian Navy has **jointly conceptualised** and developed the product and **Bharat Electronics Limited (BEL)**, Bengaluru has implemented it.
- **ASTRA Mk-I:**
 - It is the indigenously developed **first Beyond Visual Range (BVR) Missile**, which can be launched from **Sukhoi-30, Light Combat Aircraft (LCA), Mig-29 and Mig-29K**.
 - Globally, very few countries have expertise and capabilities to design and produce this class of weapon system.
 - The missile is **designed to engage and destroy highly manoeuvring supersonic aircraft**. The missile has **all weather day and night capability**.
 - Successful development of ASTRA weapon system by **Defence Research and Development Laboratory (DRDL)** Hyderabad and production by **Bharat Dynamics Limited (BDL)**, Hyderabad is a major contribution towards **Atmanirbhar Bharat**.
- **Border Surveillance System (BOSS):**
 - It is an **all-weather electronic surveillance system** successfully designed and developed by **Instruments Research and Development Establishment (IRDE)**, Dehradun.
 - The system has been **deployed at Ladakh border** area for day and night surveillance and facilitates monitoring and surveillance by **automatically detecting the intrusions in harsh high-altitude sub-zero temperature areas** with remote operation capability.

Awards for Outstanding Contributions:

- **DRDO Lifetime Achievement Award, 2018:**
 - Awarded to N V Kadam for his contributions for developing control and guidance schemes for missiles.
- **Excellence awards** were given to **academia and industry** for technology absorption.
- Besides, individual awards, team awards, technology spin-off awards, techno managerial awards and **awards in other categories** were also given.

Army Variant of MRSAM

Why in News

Recently, the maiden test of the **Medium Range Surface to Air Missile (MRSAM)** for the Indian Army has been conducted.

Key Points

- **Army Variant of MRSAM:**
 - It is a **surface to air missile developed jointly** by **Defence Research and Development Organisation (DRDO)**, India and **Israel Aerospace Industries (IAI)**, Israel for use by the Indian Army.
 - It **consists of** a command and control post, multi-function radar and mobile launcher system.
- **MRSAM:**
 - It is a high response, quick reaction, **vertically launched supersonic missile**, designed to **neutralize enemy aerial threats** – missiles, aircraft, guided bombs, helicopters.
 - **Supersonic missiles** exceed the speed of sound (Mach 1) but they are not faster than Mach-3.
 - It is **used by the Army, Navy and Air Force** as different variants.
 - In **May 2019**, Indian Navy, DRDO and IAI conducted the maiden co-operative engagement firing of the naval version of the MRSAM.
 - It is a **land-based variant of the Barak Air and Missile Defence System (AMD)**.
- **India-Israel Defence Cooperation:**
 - Israel has been **among the top four arms suppliers to India** for almost two decades now, notching **military sales worth around USD 1 billion every year**.

Note:

- Indian armed forces are inducting the **next-generation Barak-8 surface-to-air missile systems** under three joint DRDO-IAI projects worth over ₹30,000 crore.
- The Indian armed forces have inducted a wide array of Israeli weapon systems over the years, which range from **Phalcon AWACS** (airborne warning and control systems) and **Heron, Searcher-II and Harop drones** to **Barak anti-missile defence systems** and **Spyder** quick-reaction anti-aircraft missile systems.
- The acquisitions also include a host of Israeli missiles and precision-guided munitions, from **Python and Derby** air-to-air missiles to **Crystal Maze** and **Spice-2000 bombs**.

BOOST TO STRATEGIC TIES

Israel among top 4 arms suppliers to India (apart from Russia, US & France). Annual sales worth over \$1 billion

MISSILE DEFENCE: 3 joint DRDO-Israeli Aerospace Industries projects underway for Barak-8 surface-to-air missile systems for Navy (initial cost Rs 2,606 crore), IAF (Rs 10,076 crore) & Army (Rs 16,830 crore)

DRONES: Over 100 Israeli UAVs, from Heron & Searcher-II surveillance & precision-targeting drones to Harop 'killer' drones, inducted. Rs 3,500-crore Project Cheetah to fit Heron drones with missiles in pipeline

RADARS: Israeli radars, from Aerostat to Green Pine radars, inducted. Now, acquiring 66 air defence fire control radars for Rs 4,577 crore

AWACS: Impending deal for 2 Phalcon AWACS for over \$1.5 billion. 3 Phalcon AWACS, mounted on IL-76 aircraft, earlier inducted under \$1.1 billion deal

MISSILES & BOMBS: Inductions range from Spyder quick-reaction anti-aircraft missiles, Python & Derby air-to-air missiles to Crystal Maze PGMs and Spice-2000 bombs



Coastal Radar Chain Network

Why in News

India's efforts are in advanced stages to set up **coastal radar stations in Maldives, Myanmar and Bangladesh**.

- The radar chain—which will **link up with similar systems in India, Sri Lanka, Mauritius and Seychelles**—will provide a **comprehensive live feed of ship movements in the Indian Ocean Region** that can be used by friendly navies.

Key Points

➤ Coastal Radar Chain Network:

- The **aim** is to create a **network of information and maritime domain awareness** in the **strategic Indian Ocean Region**.
- This will also help in **expanding India's assistance for capacity building** to Indian Ocean littoral states.
 - The assistance to these countries comes under India's programme called **SAGAR - Security and Growth for All in the Region**.
- Under **Phase-I** of the coastal radar chain network, **46 coastal radar stations** have been set up across the country's coastline.
- Under **Phase-II** of the project, which is currently underway, **38 static radar stations and four mobile radar stations** are being set up by the **Coast Guard** and is in an advanced stage of completion.
 - The Indian Coast Guard is a **multi-mission organization**, conducting round-the-year real-life operations at sea. It operates under the **Ministry of Defence**.
- The **primary aim of surveillance radar design** is to **detect and track small fishing vessels** for Coastal surveillance application.
 - However, the radar can also be directly used for **VTS (Vessel Traffic management Services) application**, harbor surveillance and navigational purposes.
 - It will also help in **monitoring any illegal activities in the sea**.
- Ultimately, the data collected would feed into the **Information Fusion Centre for the Indian Ocean Region (IFC-IOR)**.
- **Information Fusion Centre for the Indian Ocean Region:**
 - The IFC has been **established at Gurugram** and is **collocated with the Information Management and Analysis Centre** which is jointly administered by the Indian Navy and Indian Coast Guard.
 - The **Indian Navy's Information Management and Analysis Centre (IMAC)**, set up after the 26/11 Mumbai terror attacks, is the **nodal agency for maritime data fusion**.

Note:

- It will soon become a **National Maritime Domain Awareness (NDMA) centre**.
- IFC-IOR has established itself as the **hub of maritime security information in the IOR through white shipping information exchange agreements** with 21 countries and 20 maritime security centres.
 - **White shipping information** refers to exchange of relevant advance information on the identity and movement of commercial non-military merchant vehicles.
- **Strategic Indian Ocean Region:**
 - The Indian Ocean Region, in view of its strategic location as also being home to a vast majority of the world's population, can be considered as the economic highway that drives global commerce.
 - With **over 75% of the world's maritime trade** and **50% of daily global oil consumption** passing through the region; IOR is vital to world trade and the economic prosperity of many nations.
 - At any given time, there are **close to 12,000 ships** in the Indian Ocean Region and **300 fishing vessels** that need to be always monitored.
 - The IOR is also a **fragile environment**, with **threats such as** maritime terrorism, piracy, human and contraband trafficking, illegal and unregulated fishing, arms running and poaching being prevalent.
 - Further, there has been a **steady rise in the deployment of Chinese research vessels in the Indian Ocean Region**.
 - Increasing presence of China in the Indian Ocean Region has been a **strategic concern for India**.
- **Recent Related Initiatives:**
 - The council of ministers of **IORA (Indian Ocean Rim Association)** countries met virtually in December 2020. IORA is an **inter-governmental organisation**, established in 1997. **India is a member country**.
 - The **four-nation Malabar Exercise** involving India, Australia, the USA and Japan was concluded and hosted in two phases by the Indian Navy in the Bay of Bengal and Arabian Sea.
 - Earlier this year in March, **India joined the Indian Ocean Commission (IOC) as Observer**. The Commission is an important regional institution in Western/African Indian Ocean.

Kamov-226T: Utility Helicopters

Why in News

The Indian Army is going to approach the Defence Ministry for a waiver to take the **Kamov-226T (Ka-226T) utility helicopters with Russia**.

- In **2015, India and Russia** concluded an **Inter-Governmental Agreement (IGA)** for 200 **Ka-226T helicopters** estimated to cost over USD 1 billion.
- The **Kamov-226T** is meant to **replace** the ageing and obsolete **Cheetah** and **Chetak** fleets of the Indian Army and the Air Force.

Key Points

- **Kamov-226T Helicopter:**



- **Design:** The Ka-226T is a design of Russia's famed Kamov design bureau.
- **Assembling:** A joint venture **India Russia Helicopters Limited (IRHL)** has been set up between **Hindustan Aeronautics Limited (HAL)** and **Russian Helicopters (RH)** which will assemble the helicopters in India.
- **Payload Capacity:**
 - It is a **light helicopter**, with a **maximum take-off weight of over 3.5 tonnes** and can carry a **payload of up to 1 tonne**.
- **Special Features:**
 - The Ka-226T uses **coaxial rotors**, that is, it has two sets of rotors mounted one on top of the other and **typically no tail rotor**.
 - **Coaxial rotors** give a helicopter **improvements in lift and payload capacity over conventional choppers**.

Note:

- This is especially **advantageous in high-altitude environments** where an aircraft's performance at take-off tends to diminish due to the lower air density.
- The **Ka-226T** also has a unique, **detachable 'mission' compartment instead of a conventional cabin**.
- This allows the helicopter to be adapted for different roles such as **surveillance and cargo delivery**.

➤ **Issues with the Old Fleet of Helicopters:**

- About **75%** of the Army's fleet of **Cheetah and Chetak** helicopters is over **30 years old**. Some of them are about **50 years old** and they need **urgent replacements**.

- Operational capability has been impacted due to **deficiencies and non-availability of replacement**.

- **Requirement of Helicopters in Indian Army:** There is a requirement of around 400 such helicopters in the army.



Note:

Miscellaneous

Highlights

- Vijay Diwas: 50 Years of Indo-Pak War
- Goa Liberation Day
- Digital India Awards 2020
- Legion of Merit: USA
- Srinivasa Ramanujan

Vijay Diwas: 50 Years of Indo-Pak War

Why in News

India will celebrate **50 Years of Indo-Pak War**, also called **Swarnim Vijay Varsh** on **16th December 2020**.

- Inaugural event of the celebration will be held at the **National War Memorial (NWM)** in **New Delhi** which will be attended by the Prime Minister.
 - The **National War Memorial** is a **tribute to the soldiers** who laid down their lives defending the nation, post-independence it also **commemorates the soldiers** who participated and made the supreme sacrifice in **Peacekeeping Missions, and Counter Insurgency Operations**.

Key Points

- **Vijay Diwas** is observed on **16th December** every year to **mark India's victory over Pakistan in the 1971 war**.
- The Government of India decided on **3rd December 1971**, that India would go for war with Pakistan to **save Bengali Muslims and Hindus**.
- This war was fought between India and Pakistan for **13 days**.
- On **16th December 1971**, the chief of the Pakistani forces with **93,000 soldiers** had **surrendered unconditionally** to the allied forces consisting of Indian Army and Mukti Bahini in Dhaka.
 - **Mukti Bahini** refers to the armed organizations that fought against the Pakistan Army during the Bangladesh Liberation War. It was a guerrilla resistance movement.
- Bangladesh was born on this day. Hence, **Bangladesh celebrates its independence day (Bijoy Dibos)** on **16th December** every year.

Goa Liberation Day

Why in News

The Prime Minister of India greeted the people of Goa on **Goa Liberation Day**, which falls on **19th December** every year.

Key Points

- The day marks the occasion when the **Indian armed forces freed Goa in 1961** from 450 years of **Portuguese rule**.
 - The Portuguese colonised several parts of India in **1510** but by the end of the 19th-century Portuguese colonies in India were **limited to Goa, Daman, Diu, Dadra, Nagar Haveli and Anjediva Island** (a part of Goa).
 - As India gained independence on **15th August, 1947**, it **requested the Portuguese to cede their territories but they refused**.
- The Goa liberation movement started off with small scale revolts, but **reached its peak between 1940 to 1960**.
- In **1961**, after the failure of diplomatic efforts with Portuguese, the Indian Government launched **Operation Vijay** and **annexed Daman and Diu and Goa** with the Indian mainland on **19th December**.
 - On **30th May 1987**, the territory was **split and Goa was formed**. Daman and Diu remained a Union Territory.
 - Hence, **30th May** is celebrated as the **Statehood Day of Goa**.

Goa

- It is located on the **southwestern coast of India** within the region known as the **Konkan**, and

Note:

geographically separated from the Deccan highlands by the Western Ghats.



- **Capital:** Panji.
- **Official Language:** Konkani.
 - Konkani is **one of the 22 languages** from the **Eight Schedule**.
 - It was added in the list along with **Manipuri and Nepali** by the **71st Amendment Act of 1992**.
- **Borders:** It is surrounded by Maharashtra to the north and Karnataka to the east and south, with the Arabian Sea forming its western coast.
- **Geography:**
 - The highest point of Goa is **Sonsogor**.
 - Goa's **major rivers** are the Zuari, **Mandovi** (also called Mhadei), Terekhol, Chapora, Galgibag, Kumbharjua canal, Talpona and the Sal.
 - Most of Goa's **soil cover is made up of laterites**.
- **Wildlife Sanctuaries and National Parks:**
 - Dr Salim Ali Bird Sanctuary
 - **Mhadei Wildlife Sanctuary**

- **Netravali Wildlife Sanctuary**
- **Cotigao Wildlife Sanctuary**
- **Bhagwan Mahaveer Sanctuary**
- Mollem National Park

Digital India Awards 2020

Why in News

Recently, the **President of India** has conferred **Digital India Awards 2020**.

Key Points

➤ About the Awards:

- Digital India Awards have been institutionalized under the ambit of **National Portal of India** to honor exemplary initiatives/practices in **Digital-Governance**.
 - **National Portal of India:** It is a **Flagship Project** to facilitate single window access to Government Information and Services in cyberspace.
 - **Digital-Governance:** It is a framework for establishing accountability, roles, and decision-making authority for an organization's digital presence.
- These are **conducted by the National Informatics Centre (NIC)** under the Ministry of Electronics & Information Technology (MeitY).
- The Awards **have been held for 5 seasons earlier**, in 2009, 2012, 2014, 2016 & 2018. The Awards were initially known as **Web Ratna Awards until 2014** and were **re-named Digital India Awards from the 2016 season**.

➤ Awards 2020:

- **22 digital governance initiatives/ products** by Government entities **under seven categories** received Digital India Awards 2020 for designing and implementing innovative citizen-centric digital solutions and improving the ease of living for all citizens.
 - **'Innovation in Pandemic award'** was introduced this year.
- The award **also acknowledges States and Union Territories** that display exemplary initiative in

Note:

establishing a comprehensive digital presence in sectors like health, labour, finance, social justice and environment, leading to the accomplishment of **Sustainable Development Goals (SDG)**.

➤ **Notable Winners:**

○ **E-committee of Supreme court of India:**

- **E-Courts project** visioned and implemented by the e-Committee along with Department of Justice and NIC is a Mission Mode Project of Government of India.
- Citizens can access case status, causelist court orders anywhere, any time through e-courts services website, mobile app, sms email services from the 3,293 court complexes.

○ **Arogya Setu:**

- It is a **mobile application** developed by the Government of India to connect essential health services with the people of India in a fight against Covid-19.
- The App is **aimed at augmenting the initiatives of the Government of India**, particularly the Department of Health, in proactively reaching out to and informing the users of the app regarding risks, best practices and relevant advisories **pertaining to the containment of Covid-19**.

○ **eOffice:**

- It is a **Mission Mode Project under the National E-Governance Plan**, developed and implemented by NIC.
- It is a **digital workplace solution**. The vision of eOffice is to achieve a simplified, responsive, **effective and transparent working of all government offices**.

○ **eSanjeevani:**

- It is a **digital platform** of the Ministry of Health & Family Welfare.
- It has enabled **two types of telemedicine services** viz. Doctor-to-Doctor (eSanjeevani) and Patient-to-Doctor (eSanjeevani OPD) Tele-consultations.

○ **Bihar Sahayata Mobile App:**

- It was an innovative initiative **to transfer money directly to the bank accounts of 21 lakh stranded migrant workers outside the state**.

○ **Madhya Pradesh Labour Department's Pravasi Shramik and Rojgar Setu Portals:**

- These **gateways** have been recognised for facilitating identification, registration, skilling plus **employment of migrants and other workers** during the novel coronavirus pandemic.

○ **States:**

- **Haryana, Tamil Nadu, Uttar Pradesh and West Bengal** won the Award under 'Excellence in Digital Governance - State / UT' category.

Legion of Merit: USA

Why in News

Recently, the **USA has awarded** the 'Legion of Merit' to the Prime Ministers of **India, Japan and Australia**.

- All these four countries were **key to reviving the Quadrilateral grouping** since **2017**, which is part of the **Indo-Pacific strategy** and is aimed at countering the growing dominance of China in the region.

Key Points

➤ **About the Award:**

- **One of the USA's highest military decorations**, the award was instituted in **1942** by former President **Franklin D. Roosevelt**.
- It is **awarded to members of the USA armed forces** and also **members of foreign** (i.e. non-USA) **armed forces** and sometimes **heads of state or government**.
- The award is presented to foreign recipients in **four categories**: Chief Commander, Commander, Officer and Legionnaire.
- There have been **two Indian recipients** of the honour in the past: **Field Marshal K M Cariappa** in **1950**, and **Gen S M Srinagesh** in **1955**.

➤ **Current Receivers:**

- **Indian PM** has been given this award for his role in "**advancing the India-USA relationship**".
 - The award **recognises the efforts of the people of India and the USA to improve bilateral ties**, reflected in the bipartisan consensus in both countries about the **Indo-USA Strategic Partnership**.
- **Australian PM** was presented the award for "**addressing global challenges and promoting collective security**".

Note:

- Japanese PM for his “leadership and vision for a free and open Indo-Pacific”.



Srinivasa Ramanujan

Why in News

Every year, Srinivasa Ramanujan's birth anniversary on **December 22** is commemorated as **National Mathematics Day**.

Key Points

- About Srinivasa Ramanujan:
 - **Born** on 22nd December, 1887 in **Erode, Tamil Nadu** and **died** on 26th April 1920 in Kumbakonam, **Tamil Nadu, India**.
 - In **1903** he secured a scholarship to the University of Madras but lost it the following year because he neglected all other subjects in pursuit of mathematics.
 - In **1911** Ramanujan published the **first of his papers** in the Journal of the **Indian Mathematical Society**.
 - In **1913** he began a correspondence with the British mathematician Godfrey H. Hardy which led to a special scholarship from the **University of Madras** and a grant from **Trinity College, Cambridge**.
 - In **1918** he was elected to the **Royal Society of London**.
 - Ramanujan was one of the **youngest members of Britain's Royal Society** and the **first Indian to be elected a Fellow of Trinity College, Cambridge University**.



Contributions to Mathematics:

- **Formulas and Equations:**
 - Ramanujan compiled around 3,900 results consisting of equations and identities. One of his most treasured findings was his **infinite series for Pi**.
 - He gave several formulas to **calculate the digits of Pi** in many unconventional ways.
- **Game Theory:**
 - He discovered a long list of new ideas to solve many challenging mathematical problems, which gave a significant impetus to the development of game theory.
 - His contribution to game theory is purely based on intuition and natural talent and remains unrivalled to this day.
- **Ramanujan's Book:**
 - One of Ramanujan's notebooks was discovered by George Andrews in 1976 in the library at Trinity College. Later the contents of this notebook were published as a book.
- **Ramanujan number:**
 - **1729** is known as the **Ramanujan number**.

Note:

- It is the **smallest number** which can be expressed as the **sum of two different cubes in two different ways.**
- 1729 is the sum of the **cubes of 10 and 9** - cube of 10 is 1000 and cube of 9 is 729 adding the two numbers results in 1729.
- 1729 is also the sum of the cubes of 12

and 1, cube of 12 is 1728 and cube of 1 is 1 adding the two results in 1729.

- **Other Contributions:** Ramanujan's other notable contributions include hypergeometric series, the Riemann series, the elliptic integrals, mock theta function, the theory of divergent series, and the functional equations of the zeta function.



Note:

Key Points

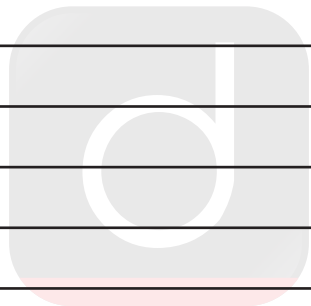
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Key Points

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