



drishti



Current
Affairs
(CONSOLIDATION)

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(PART – I)**

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Polity and Governance

Highlights

- Spread of Covid Infection in Vulnerable Tribal Groups
- MLA-LAD Scheme
- 100% Tap Water Connection in Rural Areas in Puducherry: JJM
- National Financial Reporting Authority
- Post Devolution Revenue Deficit
- SVAMITVA Scheme
- Vande Bharat Mission: One of Top Civilian Evacuations
- State Disaster Response Fund
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- Mission for Integrated Development of Horticulture
- Article 311 of the Constitution
- Sovereign Gold Bond Scheme 2021-22 Series
- PM-KISAN

Spread of Covid Infection in Vulnerable Tribal Groups

Why in News

Many members of eight different **Particularly Vulnerable Tribal Groups (PVTGs)** got infected in the second wave of **Covid-19** in Odisha.

- The infected PVTGs include the **Bonda tribe** of Malkangiri hills and **Dongaria Kondh** tribe of Niyamgiri hills.

Key Points

- **Tribal Groups in Odisha:**
 - According to the 2011 Census, Odisha's share of the **country's total tribal population was 9%**.
 - The Tribals constitute 22.85% of the State's population.
 - In terms of numbers of its tribal population, Odisha occupies the **third position** in India.
 - Of the 62 tribal groups residing in Odisha, 13 are recognised as PVTGs.
 - **The 13 PVTGs in Odisha are:** Bonda, Birhor, Chuktia Bhunja, Didayi, Dungaria Kandha, Hill Kharia, Juang, Kutia Kondh, Lanja Saora, Lodha, Mankirdia, Paudi Bhuyan and Saora.
 - Tribal populations are found in the entire seven districts of Kandhamal, Mayurbhanj, Sundargarh,

Nabarangpur, Koraput, Malkangiri and Rayagada, and in parts of 6 other districts.

➤ Particularly Vulnerable Tribal Groups (PVTGs):

- **Creation of Primitive Tribal Groups (PTGs):** In 1973, the **Dhebar Commission** created Primitive Tribal Groups (PTGs) as a separate category, which are less developed among the tribal groups.
- In 2006, the Government of India renamed the PTGs as PVTGs.
 - In 1975, the Government of India initiated to identify the most vulnerable tribal groups as a separate category called PVTGs and declared 52 such groups. In 1993 an additional 23 groups were added to the category, making it a total of **75 PVTGs out of 705 Scheduled Tribes**.
 - Among the **75 listed PVTG's the highest number are found in Odisha**.
- **Characteristics of PVTGs:** The Government classifies PVTGs on their:
 - Relative physical isolation,
 - Stagnant or declining population,
 - Low levels of literacy,
 - Absence of written language,
 - Pre-agricultural stage of economy, such as hunting, food gathering, **shifting cultivation** and terrace cultivation.
- **Schemes for PVTGs:** PVTGs are more vulnerable among the tribal groups. Due to this factor, more

Note:

developed and assertive tribal groups take a major chunk of the tribal development funds because of which PVTGs need more funds directed for their development.

- The Ministry of Tribal Affairs has implemented the scheme of “**Development of PVTGs**” which covers 75 Particularly Vulnerable Tribal Groups (PVTGs) for their comprehensive socio-economic development.
 - Under the scheme, State Governments submit **Conservation-cum-Development (CCD)** plans on the basis of their requirement.
 - 100% grants-in-aid are made available to States as per the provisions of the scheme.

MLA-LAD Scheme

Why in News

Recently, Rajasthan Government has approved a proposal to provide Rs. 3 crore each from the **MLA Local Area Development (LAD) Fund** to mobilise resources for **Covid-19 Vaccination** of the people in the age group of 18 to 44 years.

- For meeting the expenses, the **fund for each legislator** has been increased from Rs. 2.25 crore to Rs. 5 crore a year.

Key Points

- **Members of Legislative Assembly Local Area Development (MLA-LAD) Scheme:**
 - It is the States’ version of a central government scheme - **Members of Parliament Local Area Development Scheme (MPLAD)**.
 - The **objective** of this scheme is to create local need based infrastructure, to create assets of public utility and to remove regional imbalances in development.
 - This scheme is implemented in rural areas as well as urban areas of a state.
 - **MLAs do not receive any money** under this scheme. The government transfers it directly to the respective local authorities.
 - The legislators can only recommend works in their constituencies based on a set of guidelines.
 - Amounts per MLA varies across the states. Delhi has the highest allocation under MLALAD;

each MLA can recommend works for up to Rs. 10 crore each year.

- The **guidelines** for use of MLA-LAD funds differ across states.
 - For example, Delhi MLAs can recommend the operation of fogging machines (to contain dengue mosquitoes), installation of CCTV cameras etc.
 - After the legislators give the list of developmental works, they are executed by the district authorities as per the government’s financial, technical and administrative rules.

➤ Members of Parliament Local Area Development Scheme (MPLAD):

- It is a **Central Sector Scheme**.
- It was announced in December 1993 and initially came under the control of the Ministry of Rural Development. Later, in October 1994, it was transferred to the **Ministry of Statistics and Programme Implementation**.
- Each year, MPs receive Rs. 5 crore in two instalments of Rs. 2.5 crore each. Funds under MPLAD Scheme are **non-lapsable**.
- **Objective:**
 - To enable MPs to recommend works of developmental nature with emphasis on the creation of durable community assets based on the locally felt needs to be taken up in their Constituencies.
 - **Lok Sabha Members** can recommend works within their constituencies and elected Members of **Rajya Sabha** can recommend works within the State they are elected from.
 - **Nominated Members** of both the **Rajya Sabha** and **Lok Sabha** can recommend works anywhere in the country.
 - To create **durable assets of national priorities** viz. drinking water, primary education, public health, sanitation and roads, etc.
- Since June 2016, the **MPLAD funds** can also be used for implementation of the schemes such as **Swachh Bharat Abhiyan**, **Accessible India Campaign (Sugamya Bharat Abhiyan)**, conservation of water through rain water harvesting and **Sansad Aadharsh Gram Yojana**, etc.
- The Union Cabinet has given its nod to the **temporary suspension of MPLAD Funds** during 2020-21 and

Note:

2021-22 in view of the adverse impact of the outbreak of Covid-19 in India.

- **Criticism:**

- It is inconsistent with the spirit of the Constitution as it co-opts legislators into executive functioning.
- The second criticism stems from allegations of corruption associated with allocation of works.

100% Tap Water Connection in Rural Areas in Puducherry: JJM

Why in News

The Union Territory of Puducherry has become the fourth State/UT after Goa, Telangana and Andaman & Nicobar Islands to provide assured tap water supply to every rural home under Jal Jeevan Mission (JJM).

- Further, the State of Punjab and the UTs of Dadra & Nagar Haveli and Daman & Diu have also crossed the milestone of covering 75% of rural homes with assured tap water supply.

Key Points

- **Jal Jeevan Mission:**

- JJM envisages supply of 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC) by 2024.
- It is under the Ministry of Jal Shakti.
- JJM focuses on integrated demand and supply-side management of water at the local level.
 - Creation of local infrastructure for source sustainability measures as mandatory elements, like rainwater harvesting, groundwater recharge and management of household wastewater for reuse, is undertaken in convergence with other government programmes/schemes.
- It also encompasses:
 - Prioritizing provision of FHTCs in quality affected areas, villages in drought prone and desert areas, Sansad Adarsh Gram Yojana (SAGY) villages, etc.
 - Providing functional tap connection to Schools, Anganwadi centres, Gram Panchayat buildings, Health centres, wellness centres and community buildings.

Note:

- Technological interventions for removal of contaminants where water quality is an issue.
- The Mission is based on a community approach to water and includes extensive Information, Education and Communication as a key component of the mission.
- JJM looks to create a jan andolan for water, thereby making it everyone's priority.
- The fund sharing pattern between the Centre and states is 90:10 for Himalayan and North-Eastern States,
- 50:50 for other states, and 100% for Union Territories.

- The total allocation to the scheme is over Rs. 3 lakh crore.

- **Jal Jeevan Mission (Urban):**

- Launch: In the Budget 2021-22, Jal Jeevan Mission (Urban) was announced under the Housing and Urban Affairs Ministry to provide universal coverage of water supply to all households through functional taps in all statutory towns in accordance with Sustainable Development Goal- 6 (clean water and sanitation).
- Objectives:
 - Securing tap and sewer connections.
 - Rejuvenation of water bodies.
 - Creating a circular water economy.

National Financial Reporting Authority

Why in News

National Financial Reporting Authority (NFRA) is in the process of creating a verified and accurate database of companies (Public Interest Entities) and auditors that come under the regulatory ambit of it.

- In this regard, the NFRA has been engaging with the Corporate Data Management (CDM) division of the Ministry of Corporate Affairs (MCA) and three recognised stock exchanges in India.

Key Points

- **Constitution:** NFRA was constituted in 2018 by the Government of India under section 132 (1) of the Companies Act, 2013. It is an audit regulator.

- **Background:** The decision to constitute the NFRA was taken after the role of auditors and the **Institute of Chartered Accountants of India** came under the scanner for alleged lapses in various corporate scams including that at the Punjab National Bank.
- **Composition:** It consists of a chairperson, who shall be a person of eminence and having expertise in accountancy, auditing, finance or law, appointed by the Central Government and such other members **not exceeding 15**.
- **Functions and Duties:**
 - **Recommends accounting and auditing policies and standards** to be adopted by companies for approval by the Central Government.
 - **Monitor and enforce compliance** with accounting standards and auditing standards.
 - **Oversee the quality of service of the professions** associated with ensuring compliance with such standards and suggest measures for improvement in the quality of service.
 - Protect the **public interest**.
- **Powers:**
 - It can **undertake investigation** related to the following class of companies and bodies corporate called **Public Interest Entities**:
 - Companies whose **securities are listed on any stock exchange** in India or outside India.
 - **Unlisted public companies** having paid-up capital of not less than **Rs. 500 crores** or having annual turnover of **not less than Rs. 1,000 crores** or having, in aggregate, outstanding loans, debentures and deposits of not less than Rs. 500 crores as on the **31st March** of immediately preceding financial year.
 - **Insurance companies, banking companies**, companies engaged in the generation or supply of **electricity**.
 - Where **professional or other misconduct** is proved, it has the power to make order for imposing **penalty of**—
 - **not less than one lakh rupees**, but which may extend to five times of the fees received, in case of **individuals**; and
 - **not less than ten lakh rupees**, but which may extend to ten times of the fees received, in case of **firms**.

- Its **account is monitored by the Comptroller and Auditor-General of India**.
- It is **headquartered in New Delhi**.

Post Devolution Revenue Deficit

Why in News

The **Ministry of Finance** has released the **second monthly instalment of Post Devolution Revenue Deficit (PDRD) Grant** of Rs. 9,871 crore for the year 2021-22 to 17 States.

Key Points

- **About the Post Devolution Revenue Deficit (PDRD):**
 - The Centre provides the Post Devolution Revenue Deficit Grant to the States under **Article 275 of the Constitution**.
 - The grants are released as per the **recommendations of the Finance Commission** in **monthly installments** to **meet the gap in Revenue Accounts** of the States post-devolution (of the divisible tax pool of the Centre).
 - The **15th Finance Commission** has recommended **post devolution revenue deficit grants amounting to about Rs. 3 trillion over the five-year period ending FY26**.
 - The **number of states qualifying for the revenue deficit grants decreases from 17 in FY22**, the first year of the award period to **6 in FY26**, the last year.
 - The **eligibility of States to receive this grant and the quantum of grant was decided by the Commission based on the gap between assessment of revenue and expenditure of the State**.
 - **States Recommended for PDRD Grants:**
 - Over the five-year period, Andhra Pradesh, Assam, Haryana, Himachal Pradesh, Karnataka, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand and West Bengal are recommended to be provided with the deficit grants. The Ministry of Finance has accepted the recommendation.
- **Article 275 of the Constitution:**
 - It **provides for the payment of such sums** as Parliament may by law provide as grants-in aid to

Note:

- such States as Parliament may determine to be in need of assistance.
- The grants are **paid out of the Consolidated Fund of India** in each year, and **different sums may be fixed for different States**.
- These grants are to be of the **nature of capital and recurring sums** as may be necessary.
- These aim to enable that **State to meet the costs of such schemes of development** as may be undertaken by it with the approval of the Government of India for the purpose of **promoting the welfare of the Scheduled Tribes in that State or raising the level of administration of the Scheduled Areas** there in to that of the administration of the rest of the areas of that State.
- Grants are primarily **intended to correct Inter-State disparities** in financial resources and to coordinate the maintenance and expansion of the welfare schemes of the State Governments on a uniform national level.

Revenue Account and Capital Account

- A **revenue account** includes all the revenue receipts also known as current receipts of the government. These receipts include tax revenues and other revenues of the government.
- A **capital account** is an account that includes the capital receipts and the payments. It basically includes assets as well as liabilities of the government. Capital receipts comprise the loans or capital that are raised by governments by different means.

Centre State Financial Relations

- **Constitutional Provisions:**
 - Indian Constitution has made elaborate provisions, relating to the **distribution of the taxes as well as non-tax revenues** and the **power of borrowing**, supplemented by **provisions for grants-in-aid** by the Union to the States.
 - **Article 268 to 293 in Part XII** deals with the provisions of financial relations between Centre and States.
- **Taxing Powers:** The Constitution divides the taxing powers between the Centre and the states as follows:
 - The Parliament has exclusive power to levy taxes on subjects enumerated in the Union List, the state legislature has exclusive power to levy taxes on subjects enumerated in the State List.

- Both can levy taxes on the subjects enumerated in Concurrent List whereas residuary power of taxation lies with Parliament only.

➤ **Distribution of the Tax Revenue:**

- **Duties Levied by the Union but Collected and Appropriated by the States (Article 268):**
 - Includes stamp duties on bills of exchange, cheques, etc.
- **Taxes Levied as well as Collected by the Union, but Assigned to the States (Article 269):**
 - These include taxes on the sale and purchase of goods (other than newspapers) in the course of inter-state trade or commerce or the taxes on the consignment of goods in the course of inter-state trade or commerce.
- **Levy and Collection of Goods and Services Tax in Course of Inter-State Trade or Commerce (Article 269-A):**
 - The Goods and Services Tax (GST) on supplies in the course of inter-state trade or commerce are levied and collected by the Centre.
 - But, this tax is divided between the Centre and the States in the manner provided by Parliament on the recommendations of the GST Council.

○ **Taxes Levied and Collected by the Union but Distributed between the Union and the States (Article 270):**

- This category includes all taxes and duties referred to in the Union List except the following:
 - Duties and taxes referred to in Articles 268, 269 and 269-A.
 - Surcharge on taxes and duties referred to in Article 271 (this goes to the Centre exclusively).
 - Any cess levied for specific purposes.

➤ **Grants-in-Aid:** Besides sharing of taxes between the Centre and the States, the Constitution provides for Grants-in-aid to the States from the Central resources. There are two types of grants:

- **Statutory Grants (Article 275):** These grants are given by the Parliament out of the Consolidated Fund of India to such States which are in need of assistance. Different States may be granted different sums.
 - Specific grants are also given to promote the welfare of scheduled tribes in a state or to raise the level of administration of the Scheduled areas therein.

Note:

- **Discretionary Grants (Article 282):** It empowers both the Centre and the states to make any grants for any public purpose, even if it is not within their respective legislative competence.
 - Under this provision, the Centre makes grants to the states. These grants are known as discretionary grants, the reason being that the Centre is under no obligation to give these grants and the matter lies within its discretion.
 - These grants have a two-fold purpose: to help the state financially to fulfil plan targets; and to give some leverage to the Centre to influence and coordinate state action to effectuate the national plan.

SVAMITVA Scheme

Why in News

Recently, the **Ministry of Panchayati Raj** has released the new framework for implementation of the **SVAMITVA Scheme**.

- SVAMITVA stands for **Survey of Villages and Mapping with Improvised Technology in Village Areas**.

Key Points

- **Launch:** It is a **center sector scheme** which was launched nationally on the occasion of **National Panchayati Raj Day** on 24th April 2021.
- **Aim:** To provide an integrated property validation solution for rural India.
- **Features:**
 - The demarcation of rural inhabited areas would be done using **Drone survey** and **CORS (Continuously Operating Reference Stations) Networks** which provides mapping accuracy of 5 cms.
 - This would provide the '**record of rights**' to village household owners possessing houses in inhabited rural areas in villages.
 - **It will cover around 6.62 Lakh villages** of the entire country **during 2021-2025**.
- **Objectives:**
 - To bring **financial stability** to the citizens in rural India by enabling them to use their property as a financial asset for taking loans and other financial benefits.

Note:

- **Creation of accurate land records** for rural planning.
- **Determination of property tax**.
- **Creation of survey infrastructure and GIS (Geographic Information System) maps** that can be leveraged by any department for their use.
- To support in preparation of better-quality **Gram Panchayat Development Plan (GPDp)** by making use of GIS maps.
- To reduce **property related disputes** and legal cases
- **Nodal Ministry:** Ministry of Panchayati Raj (MoPR)
 - **Survey of India** is a Technology Implementation Agency.

Vande Bharat Mission: One of Top Civilian Evacuations

Why in News

The **Vande Bharat Mission (VBM)**, which started repatriating Indians stranded abroad due to Covid-19 and the resultant lockdowns since May 2020, has become one of the largest evacuations of civilians by a country.

Key Points

- **Vande Bharat Mission (VBM):**
 - It is the biggest civilian evacuation exercise to bring back Indian citizens stranded abroad amidst the **coronavirus-induced travel restrictions**.
 - It has surpassed the large-scale airlift of 1,77,000 people in 1990 at the onset of the Gulf War.
 - The mission is undergoing its 10th phase and has carried 32 lakh passengers approximately both inbound and outbound.
 - National carrier Air India, alongwith its budget carrier Air India Express (AIE) carried out the bulk of air transfers under the mission.
 - AIE used its fleet to lift agricultural products, mainly fruits and vegetables (the most sought-after items among the NRI Indians), to **West Asian countries**, Singapore and Kuala Lumpur.
 - Besides, helping distressed rural farmers and the NRIs, the aim of the mission is to **keep the supply chain intact**.
 - While overseas Indians from as many as 93 countries have availed repatriation through the VBM, the government has entered into special

travel arrangements called 'air travel bubbles' with 18 different countries so far.

- **Transport bubbles or air travel arrangements** are temporary arrangements between two countries aimed at restarting commercial passenger services when regular international flights are suspended as a result of the pandemic.
- **It allows carriers of both the countries to fly passengers either way** without any restrictions.
- Reciprocal in nature, the bilateral pact aims to benefit airlines from both countries with faster repatriations.
- Due to a recent spurt in Covid-19 cases in the country and many countries of late, patronage has come down in the VBM flights.

➤ Other Civilian Rescue Missions:

- **Evacuation from the Gulf (1990-91):**
 - Until VBM, India's evacuation of civilians from Kuwait during the 1990-91 Gulf war had been the world's largest evacuation exercise of civilians by air.
 - Around 1,77,000 Indians were caught in the war which left millions homeless and many dead. Air India, at that time, operated around 500 flights over two months.
- **Operation Raahat:**
 - It was launched by the Indian Armed Forces, to evacuate 4,640 Indian citizens and 960 foreign nationals of 41 countries from Yemen during the 2015 Yemen Crisis.
 - The evacuation took place both by sea and the air.
- **Operation Maitri:**
 - The rescue and relief operation was carried out by the government of India and Indian armed forces in the aftermath of the April 2015 Nepal earthquake.
 - The Indian Armed Forces evacuated around 5,188 persons, while nearly 785 foreign tourists were provided transit visas.
- **Operation Safe Homecoming:**
 - It was launched by the Indian government on 26th February, 2011 to evacuate its citizens, fleeing from the Libyan Civil War.
 - The air-sea operation was conducted by the Indian Navy and Air India. Around 15,000 civilians were rescued in the operation.

○ Operation Sukoon:

- It was an operation carried out by the Indian Navy to evacuate Indian, Sri Lankan and Nepalese nationals, from the conflict zone during the 2006 Lebanon War.
- It was one of the largest evacuations conducted by the Indian Navy in which a total of 2,280 people were evacuated.

State Disaster Response Fund

Why in News

Recently, the Centre has released the first instalment of the State Disaster Response Fund (SDRF) to States, in the wake of the second wave of Covid-19 that has claimed thousands of lives since April 2021.

- Normally, the first instalment is released in June as per the recommendations of the Finance Commission.

Key Points

- **About:**
 - SDRF has been constituted under Section 48 (1) (a) of the **Disaster Management Act, 2005**.
 - It was constituted based on the recommendations of the 13th Finance Commission.
 - It is the primary fund available with the State governments for responses to notified disasters to meet expenditure for providing immediate relief.
 - It is audited by the **Comptroller and Auditor General of India (CAG)** every year.
- **Contribution:**
 - The Centre contributes 75% of the SDRF allocation for general category States and Union Territories and 90% for special category States and Union Territories (northeastern States, Sikkim, Uttarakhand, Himachal Pradesh, Jammu and Kashmir).
 - The annual Central contribution is released in two equal installments as per the recommendation of the Finance Commission.
- **Disaster(s) Covered under SDRF:**
 - **Cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, frost and cold waves.**
- **Local Disasters:**
 - A State Government may use up to 10% of the funds available under the SDRF for providing

Note:

immediate relief to the victims of **natural disasters that they consider to be 'disasters' within the local context** in the State and which are not included in the notified list of disasters of the Ministry of Home Affairs.

Operation Samudra Setu-II

Why in News

Indian Navy has launched **Operation Samudra Setu-II** for shipment of **Oxygen-filled containers** to India.

- **Operation Samudra Setu** was launched in May 2020 as part of the national effort to repatriate Indian citizens from overseas during the **Covid-19** pandemic.

Key Points

- **Operation Samudra Setu-II:**
 - Seven Indian Naval ships viz. **Kolkata, Kochi, Talwar, Tabar, Trikand, Jalashwa and Airavat** have been deployed for shipment of liquid medical **oxygen-filled cryogenic containers** and associated **medical equipment** from various countries.
 - Two ships, the **INS Kolkata** and **INS Talwar**, have entered the Port of **Manama, Bahrain**, to carry back **40 tonnes of liquid oxygen** to Mumbai.
 - The **INS Jalashwa** is enroute to Bangkok while the **INS Airavat** is on its way to **Singapore** on similar missions.
- **Operation Samudra Setu:**
 - It was launched along with **Vande Bharat Mission (VBM)**.
 - VBM is the **biggest civilian evacuation exercise** to bring back Indian citizens stranded abroad amidst the **coronavirus-induced travel restrictions**.
 - It has **surpassed the large-scale airlift of 1,77,000 people in 1990** at the onset of the Gulf War.
 - Indian Naval Ships **Jalashwa and Airavat, Shardul and Magar** participated in this operation.
 - **Around 4000 Indian citizens** stranded in neighbouring countries, amidst **Covid-19** outbreak, were successfully repatriated back to India.
 - **Indian Navy** has previously undertaken similar evacuation operations as part of **Operation Sukoon in 2006 (Beirut)** and **Operation Rahat in 2015 (Yemen)**.

Note:

World Press Freedom Day 2021

Why in News

The **World Press Freedom Day (WPFD)** is an annual celebration of press freedom, observed on **3rd May** every year.

- The main celebration is organized by the **UN Educational, Scientific and Cultural Organization (UNESCO)**.
- The theme for WPFD 2021 is “**Information as a Public Good**”.

Key Points

- **Background:**
 - The day was proclaimed by the **UN General Assembly** in 1993, following the recommendation of **UNESCO's General Conference** in 1991.
 - The day also **marks the 1991 Windhoek Declaration** (adopted by UNESCO).
 - It aimed towards the ‘development of a free, independent and pluralistic press’.
- **Three Key Highlights of WPFD 2021:**
 - Steps to ensure the **economic viability of news media**.
 - Mechanisms for ensuring **transparency of Internet companies**.
 - **Enhanced Media and Information Literacy (MIL) capacities** that enable people to recognize and value, as well as defend and demand, journalism as a vital part of information as a public good.
- **World Press Conference 2021:**
 - The 2021 Global Conference was **hosted by UNESCO** and the Government of **Namibia**.
 - It called for **urgent attention to the threat of extinction faced by local news media** around the world, a crisis worsened by the Covid-19 pandemic.
 - It **put forward ideas** to tackle the challenges of our online media environment, push for more transparency of internet companies, strengthen safety of journalists, and improve their working conditions.

Freedom of Press in India

- 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".
- 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.
 - However, **Freedom of press is also not absolute**. It faces **certain restrictions under Article 19(2)**, which are 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.
 - **Related Rankings/Findings:**
 - India has been **ranked 142nd out of 180 nations** in the **World Press Freedom Index, 2021**, published by Reporters Sans Frontières (RSF) or Reporters Without Borders.
 - Reports such as '**Freedom in the World 2021** (Freedom House, US)', '**2020 Human Rights Report** (US State Department)', '**Autocratisation Goes Viral** (V-Dem Institute, Sweden)' have all highlighted **intimidation of journalists in India**.

Waiving Intellectual Property Protection for Covid-19 Vaccines

Why in News

The United States has announced the **support for waiving Intellectual Property (IP) protection for Covid-19 vaccines**.

- The decision is a breakthrough in India and South Africa's attempts to get **World Trade Organisation (WTO)** member countries to agree to such a waiver to fight the pandemic equitably.

Key Points

- **About:**
 - The **1995 agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)** requires ratifying countries to adopt a minimum standard of intellectual property rights to protect creators and promote innovation.
 - **India and South Africa have proposed a waiver from the implementation** and application of certain

provisions of the TRIPS Agreement (waiving IP rights like patents, copyright, and trademarks) **for prevention, containment or treatment of Covid-19**.

- **If the waiver is granted**, WTO member countries will not be under an obligation, for a temporary period, to either grant or enforce patents and other IP-related rights to Covid-19 drugs, vaccines, and other treatments.
 - This will immunise the measures adopted by countries to vaccinate their populations from claims of illegality under WTO law.
- **Need to Waive Patents on Covid Vaccines:**
 - **Monopoly of Drug Companies:** At present, only drug companies which own patents are authorised to manufacture Covid vaccines.
 - A lifting of patents will allow the formula to be shared with other companies.
 - **Vaccine Cost:** Once the formula is shared, any company which possesses the required technology and infrastructure can produce vaccines.
 - This will lead to **cheaper and more generic versions of Covid vaccines** and will be a big step in overcoming vaccine shortage.
 - **Inequitable Distribution of Vaccines:** This has opened up a glaring gap between developing and wealthier countries now.
 - The countries having surplus doses of vaccines have already vaccinated a considerable percentage of their population and are returning to normalcy.
 - Whereas, the poorer nations continue to face shortages, have overburdened healthcare systems and hundreds dying daily.
 - **Against the Interests of the World.** The longer Covid circulates in developing nations, there is a greater chance of more vaccine-resistant, deadly mutations of the virus emerging.
- **Significance for India:**
 - **Help in Increasing Production:** The bulk of the vaccine doses produced in India are taken up by foreign countries which **could pay more for the doses**.
 - This move can help **scale up production to meet demand** besides making the vaccines **more affordable for everyone**.
 - **Preparation for the Third Wave:** Indian authorities have stated that the third wave of the pandemic is inevitable.

Note:

- Once the number of cases and deaths plateau, addressing shortages and making more affordable vaccines readily accessible could be the best way to prepare for the surge once again.

➤ **Counter Arguments:**

- Vaccine Quality and Safety may get Compromised:** Lifting of patents would be a compromise on control of safety and quality standards for vaccine manufacturing.
- Disincentive Pharmaceutical Companies:** Lifting of patents would be a huge deterrent to investing heavily on vaccine development during pandemics in the future.
- Can Lead to Confusion:** Eliminating those protections would undermine the global response to the pandemic, including ongoing effort to tackle new variants.
 - It will create confusion that could potentially undermine public confidence in vaccine safety, and create a barrier to information sharing.

Media has Right to Report Court Proceeding: SC

Why in News

Recently, the Supreme Court (SC) dismissed a plea by the **Election Commission of India (ECI)** to restrain media from reporting oral observations of the judges.

- The SC ruled that the media has rights to report observations made during the course of hearings (Court Proceedings).

Key Points

➤ **Freedom of Speech:**

- Real-time reportage of court proceedings, including the oral exchanges in courtrooms between judges and lawyers, is part of the right to freedom of speech.
 - Under Article 19, Indian Constitution guarantees Freedom of Speech and Expression.
- With the advent of technology, reporting has proliferated through social media forums, which provides real-time updates to a much wider audience. This is an extension of the freedom of speech and expression that the media possesses.

- This constitutes a virtual extension of the open court.

- Except in cases of **child sexual abuse** and marital issues, the phenomenon of free press should extend to court proceedings.

➤ **Judicial Integrity:**

- Right of the media to report and disseminate issues and events, including court proceedings that were a part of the public domain, augmented the integrity of the judiciary.

➤ **Functionality of Open Court Proceeding:**

- Ensures that the judicial process is subject to public scrutiny which in turn is crucial to maintaining transparency and accountability and transparency in the functioning of democratic institutions is crucial to establish the public's faith in them.
- Ensures that judges act in accordance with law and with probity.
- Court proceedings are vital sources of public information about the activities of the legislature and the executive. An open court serves an educational purpose as well becoming a platform for citizens to know how the practical application of the law impacts upon their rights.

➤ **Language:**

- There is a need for judges to exercise caution in off-the-cuff remarks in open court, which may be susceptible to misinterpretation. Language, both on the Bench and in judgments, must comport with judicial propriety.
 - Language is an important instrument of a judicial process which is sensitive to constitutional values.

Election Commission of India

➤ **About:**

- It is an autonomous constitutional authority responsible for administering Union and State election processes in India.
- It was established in accordance with the constitution on 25th January 1950 (celebrated as **national voters' day**). The secretariat of the commission is located in New Delhi.
- The body administers elections to the Lok Sabha, Rajya Sabha, and State Legislative Assemblies in India, and the offices of the President and Vice President in the country.

Note:

- It is not concerned with the elections to panchayats and municipalities in the states. For this, the Constitution of India provides for a separate **State Election Commission**.
- **Constitutional Provisions:**
 - Part XV (Article 324-329) of the Indian Constitution deals with elections, and establishes a commission for these matters.

Covid-Vaccination Related Challenges

Why in News

There was a **decrease in the number of vaccine doses administered** in the week starting 1st May 2021, after the government “opened up” vaccination beyond priority groups, to its **lowest level in eight weeks**.

- **Covid-19** vaccines are being developed at a pace faster than for any other disease, yet there are shortages.

Key Points

- **Global Issues:**
 - **Huge Population:**
 - With about seven billion people to be vaccinated worldwide, with mostly two jabs (Doses) each, the **demand is obviously very high**.
 - **Self-Centred Rich:**
 - **More than 80% of available vaccines have been ordered and/or already stocked by a few countries** representing only about 20% of the world population.
 - Even with a **World Health Organization (WHO)**-led effort like **COVAX**, **only about 1% of the African population has received vaccines** so far.
 - **Delay in Emergency Approvals:**
 - Till now **only three vaccines** — Pfizer, Moderna, and Janssen — have been **approved by the US**.
 - The **most affordable AstraZeneca vaccine** still awaits approval.
 - Approval for **Russia's Sputnik V** was recently **denied in Brazil**.
 - Vaccines of **China's Sinovac and Sinopharm** are **not yet approved in western countries**.
 - **Challenges in India:**

- **Limited Suppliers:**
 - **Limited capacity of the two vaccine (COVAXIN & COVISHIELD) manufacturers** who are now being piled upon with much bigger orders from state governments and private hospitals that may take months to fulfil.
- **Supply Chain Gap:**
 - There is a big gap in the supply chain of the ambitious programme to vaccinate all its adult population.
 - Although **India ranks number three after the US and China in the absolute number of vaccines administered**, only about **13% of its population has received a single jab and about 2% fully vaccinated**.
 - Many countries have already vaccinated more than half their adult population.
- **Unequal Procurement Process:**
 - The revised vaccine procurement process **builds in a skew against smaller hospitals in cities and towns** in comparison to their bigger counterparts in simply getting access to the shots, and a more **disconcerting urban-rural divide** in terms of where healthcare facilities are vis-à-vis the already-established supply-chain map.
- **Digital Divide:**
 - There is the issue of **mandatory Co-Win registration** as part of the new decentralised distribution strategy, which potentially adds to an entry barrier that could be tougher to navigate for users in the hinterland, both in terms of **access to the platform** and an **English-only interface for users** so far.
 - Mandatory online registration introduces a **skew in favour of urban centres**, given that a little over half of India's population has access to broadband Internet, while **rural tele-density is under 60%**.
 - States including **Bihar, Uttar Pradesh, Chhattisgarh, Jharkhand, and Madhya Pradesh** having among the country's lowest tele-density.
 - It is more difficult for those with **less access and greater unfamiliarity with technology**, including access to a smartphone or computer.

Note:

Pradhan Mantri Garib Kalyan Ann Yojana

Why in News

Recently, thirteen states have started distributing foodgrains under the **Pradhan Mantri Garib Kalyan Ann Yojana (PMGKAY)**.

- The scheme has been rolled out again for two months (May and June 2021) as the country's healthcare infrastructure has reached its capacity and several states have taken steps like complete **lockdown**, night curfew to contain the spread of the disease.

Key Points

- **About:**
 - PMGKAY is a part of **Pradhan Mantri Garib Kalyan Package (PMGKP)** to help the poor fight the battle against **Covid-19**.
 - Its nodal Ministry is the **Ministry of Finance**.
 - It was **initially announced for a three month period** (April, May and June 2020), covering 80 crore ration cardholders. Later it was extended till **November 2020**.
 - However in April 2021, the government had announced its decision to **restart the PMGKAY**.
 - The scheme aimed at providing each person who is covered under the **National Food Security Act 2013** with an **additional 5 kg grains** (wheat or rice) for free, in addition to the 5 kg of subsidised foodgrain already provided through the **Public Distribution System (PDS)**.
 - The new version of the PMGKAY **lacks one of its important components** which was there in 2020 PMGKAY i.e **free-of-cost 1 kg pulses per month** to each household covered under the NFSA.
- **Expenditure:**
 - **Government of India will bear all expenditure** of over Rs. 26,000 crore on account of food subsidy and Central assistance to states/UTs on account of intra-state transportation etc.
- **Allocation Till Now:**
 - Out of a total **monthly allocation** of **39.69 lakh Metric Tonnes (MT)** under the PMGKAY, **15.55 lakh MT** have been lifted by states.

- 1.01 lakh MT have been distributed to **2.03 crore beneficiaries till May 2021**.
- **Challenge:**
 - A key issue is that the beneficiaries of the **National Food Security Act** are based on the last census (2011). The number of food-insecure people has increased since then and they remain uncovered.

Mission for Integrated Development of Horticulture

Why in News

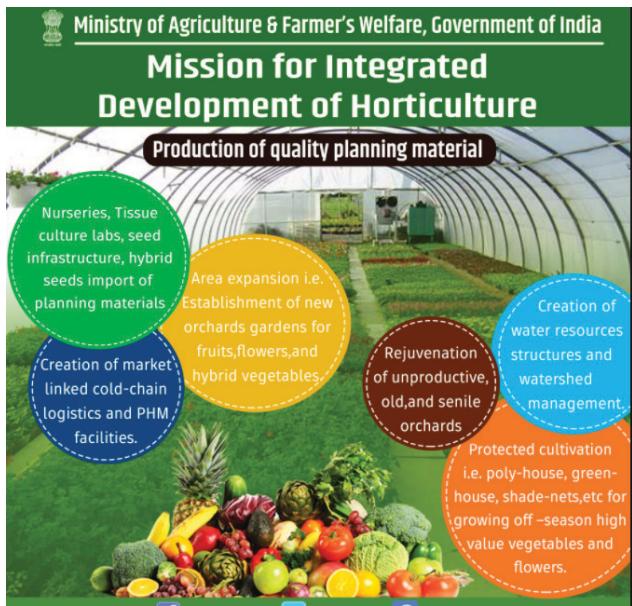
The **Ministry of Agriculture and Farmers Welfare** has provided an enhanced allocation of **Rs. 2250 Crore** for the year **2021-22** for '**Mission for Integrated Development of Horticulture**' (MIDH).

- **Horticulture** is the branch of plant agriculture dealing with garden crops, generally fruits, vegetables, and ornamental plants. M.H. Marigowda is considered the **Father of Indian Horticulture**.

Key Points

- **Mission for Integrated Development of Horticulture (MIDH):**
 - **About:** MIDH is a **Centrally Sponsored Scheme** for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo.
 - **Nodal Ministry:** The **Ministry of Agriculture and Farmers Welfare** is implementing MIDH with effect from **2014-15**.
 - MIDH is implemented under **Green Revolution - Krishonatti Yojana**.
 - **Funding Pattern:** Under MIDH, **Government of India (GoI)** contributes **60% of total outlay** for developmental programmes in all the states except states in North East and Himalayas, **40% share** is contributed by **State Governments**.
 - In the case of **North Eastern States and Himalayan States**, GoI contributes **90%**.
- **MIDH Sub-Schemes:**
 - **National Horticulture Mission (NHM):**
 - It is being implemented by **State Horticulture Missions (SHM)** in selected districts of **18 States and 6 Union Territories**.

Note:



- **Horticulture Mission for North East & Himalayan States (HMNEH):**
 - HMNEH is being implemented for overall **development of Horticulture in North East and Himalayan states.**
- **National Horticulture Board (NHB):**
 - NHB is **implementing various schemes under MIDH in all States and UTs.**
- **Coconut Development Board (CDB):**
 - CDB is **implementing various schemes under MIDH in all Coconut growing states in the country.**
- **Central Institute for Horticulture (CIH):**
 - CIH was **established at Medi Zip Hima, Nagaland in 2006-07** for providing technical backstopping through **capacity building and training of farmers** and Field functionaries in the North Eastern Region.
- **Achievements of MIDH:**
 - During the **year 2019-20**, the country recorded its **highest ever horticulture production of 320.77 million tonnes.**
 - MIDH has played a significant role in **increasing the area under horticulture crops.**
 - Area and production during the years 2014-15 to 2019-20 has increased by 9% and 14% respectively.
 - It has contributed significantly towards **improving the quality of produce and productivity of farmland.**

- The initiative of MIDH has not only resulted in **India's self-sufficiency** in the horticulture sector but also contributed towards achieving **sustainable development goals of zero hunger, good health and wellbeing, no poverty, gender equality** etc.

➤ **Challenges:**

- The Horticulture sector is still facing a lot of challenges in terms of **high post-harvest loss** and **gaps in post-harvest management and supply chain infrastructure.**

Article 311 of the Constitution

Why in News

Recently, a police officer was dismissed from the service by Mumbai Police Commissioner under Article 311(2)(b) of the Constitution without a departmental enquiry.

Key Points

- **Article 311:**
 - **Article 311 (1)** says that **no government employee either of an all India service or a state government shall be dismissed or removed by an authority subordinate to the one** that appointed him/her.
 - **Article 311 (2)** says that **no civil servant shall be dismissed or removed or reduced in rank except after an inquiry** in which s/he has been informed of the charges and given a reasonable opportunity of being heard in respect of those charges.
 - **People Protected under Article 311:** The members of
 - Civil service of the Union,
 - All India Service, and
 - Civil service of any State,
 - People who hold a civil post under the Union or any State.
 - The protective safeguards given under Article 311 are **applicable only to civil servants, i.e. public officers.** They are **not available to defence personnel.**
 - **Exceptions to Article 311 (2):**

Note:

- **2 (a)** - Where a person is dismissed or removed or reduced in rank **on the ground of conduct which has led to his conviction on a criminal charge**; or
 - **2 (b)** - Where the **authority empowered** to dismiss or remove a person or to reduce him in rank **is satisfied** that for some reason, to be recorded by that authority in writing, it is **not reasonably practicable to hold such inquiry**; or
 - **2 (c)** - Where the President or the Governor, as the case may be, is satisfied that **in the interest of the security of the State**, it is not expedient to hold such inquiry.
- **Other Recent Case Related to Use of Article 311(2) Subsections:**
- Recently, the **Jammu & Kashmir** administration set up a **Special Task Force (STF)** to **scrutinise cases of employees suspected of activities requiring action under Article 311(2)(c)**.
 - **Three government employees**, including **two teachers**, were fired using the Article.
- **Options to Dismissed Employee:**
- The government employee dismissed under these provisions can approach either tribunals like the **state administrative tribunal** or **Central Administrative Tribunal (CAT)** or the courts.
- **Other Related Constitutional Provisions:**
- **Part XIV** of the Constitution of India deals with Services under The Union and The State.
 - **Article 309** empowers the Parliament and the State legislature to **regulate the recruitment, and conditions of service of persons appointed**, to public services and posts in connection with the affairs of the Union or of any State respectively.
 - According to **Article 310**, except for the provisions provided by the Constitution, a civil servant of the Union works at the pleasure of the President and a civil servant under a State works at the pleasure of the Governor of that State (**English doctrine of Pleasure**).
 - But this **power of the Government is not absolute**.
 - **Article 311** puts **certain restrictions** on the absolute power of the President or Governor for dismissal, removal or reduction in rank of an officer.

Sovereign Gold Bond Scheme 2021-22 Series

Why in News

The Government of India, in consultation with the Reserve Bank of India (RBI), has decided to issue Sovereign Gold Bonds in six tranches from May 2021 to September 2021.

Key Points

- **Launch:** The Sovereign Gold Bond (SGB) scheme was **launched in November 2015** with an **objective** to reduce the demand for physical gold and shift a part of the domestic savings - used for the purchase of gold - into financial savings.
- **Issuance:** The Gold Bonds are issued as Government of India Stock under the **Government Securities (GS) Act, 2006**.
 - These are **issued by the RBI on behalf of the Government of India**.
 - Bonds are **sold through** Commercial banks, Stock Holding Corporation of India Limited (SHCIL), designated post offices and recognised stock exchanges viz., **National Stock Exchange of India Limited** and Bombay Stock Exchange, **either directly or through agents**.
- **Eligibility:** The bonds are restricted for sale to **resident individuals, Hindu Undivided Families (HUFs), trusts, universities and charitable institutions**.
- **Features:**
 - **Issue Price:** Gold bond prices are linked to the price of gold of 999 purity (24 carats) **published by India Bullion and Jewellers Association (IBJA), Mumbai**.
 - **Investment Limit:** Gold bonds can be **purchased in the multiples of one unit**, up to certain thresholds for different investors.
 - The **upper limit** for retail (individual) investors and HUFs is 4 kilograms (4,000 units) each per financial year. For trusts and similar entities, an upper limit of 20 kilograms per financial year is applicable.
 - **Minimum permissible investment is 1 gram of gold**.
 - **Term:** The gold bonds come with a **maturity period of eight years**, with an option to exit the investment after the first five years.

Note:

- **Interest Rate:** A fixed rate of 2.5% per annum is applicable on the scheme, payable semi-annually.
 - The interest on Gold Bonds shall be taxable as per the provision of Income Tax Act, 1961.
- **Benefit:**
 - Bonds can be used as **collateral for loans**.
 - The **capital gains tax** arising on redemption of SGB to an **individual** has been **exempted**.
 - Redemption is the act of an issuer repurchasing a bond at or before maturity.
 - Capital gain is the profit earned on the sale of an asset like stocks, bonds or real estate. It results in when the selling price of an asset exceeds its purchase price.
- **Disadvantages of Investing in SGB:**
 - This is a **long term investment** unlike **physical gold which can be sold immediately**.
 - Sovereign gold bonds are **listed on exchange** but the **trading volumes are not high**, therefore it will be difficult to exit before maturity.

PM-KISAN

Why in News

Recently, the Prime Minister released the 8th instalment of financial benefit under **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)**.

Key Points

- **About:**
 - Under the scheme, the Centre **transfers an amount**

of Rs 6,000 per year, in three equal instalments, directly into the bank accounts of all landholding farmers irrespective of the size of their land holdings.

- It was launched in **February 2019**.

➤ Funding and Implementation:

- It is a **Central Sector Scheme** with **100% funding from the Government of India**.
- It is being implemented by the **Ministry of Agriculture and Farmers Welfare**.

➤ Identification of Beneficiaries:

- The entire responsibility of **identification of beneficiary farmer families** rests with the State / UT Governments.

➤ Objective:

- To **supplement the financial needs of the Small and Marginal Farmers** in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income at the end of each crop cycle.
- To **protect them from falling in the clutches of moneylenders** for meeting such expenses and ensure their continuance in the farming activities.

➤ PM-KISAN Mobile App:

- The PM-KISAN Mobile App developed and designed by the **National Informatics Centre** in collaboration with the Ministry of Electronics and Information Technology has been launched.
- The farmers can view the status of their application, update or carry out corrections of their **Aadhaar cards** and also check the history of credits to their bank accounts.



Note:

Economic Scenario

Highlights

- Report On Global Remittances: World Bank
- India's Sovereign Rating
- Regulations Review Authority 2.0
- Report on Social Stock Exchanges
- Export of Organic Millets
- Pradhan Mantri Mudra Yojana
- Purchasing Managers' Index
- Asian Development Outlook 2021: ADB
- Core Sector Output
- Small Savings Instruments
- Model Insurance Villages
- RBI's Measures to Fight Covid-Second Wave
- Falling Bond Yield
- Super Cycle of Commodities
- NITI Aayog's Report for a Digitally Inclusive Bharat
- Proposal for Changing Promoters to Person in Control: SEBI

Report On Global Remittances: World Bank

Why in News

According to the latest edition of the **World Bank's Migration and Development Brief**, despite **Covid-19**, remittance flows remained **resilient in 2020**, registering a smaller decline than previously projected.

Key Points

- **Remittance Inflow of India:**
 - **India** being at **top**, received over **USD 83 billion** in remittances in **2020**, a drop of just **0.2 per cent** from the **previous year**, despite a pandemic that devastated the world economy.
 - India's remittances **fell by just 0.2% in 2020**, with much of the decline due to a **17% drop in remittances from the United Arab Emirates**, which offset resilient flows from the United States and other host countries.
 - **In 2019**, India had received **USD 83.3 billion** in remittances.
- **Global Remittances:**
 - **China** is **second** in terms of global remittances in **2020**.
 - China received **USD 59.5 billion** in remittances in **2020**.
 - **India and China** are followed by **Mexico**, the **Philippines**, **Egypt**, **Pakistan**, **France** and **Bangladesh**.

➤ Remittance outflow :

- **Remittance outflow** was the maximum from the **United States (USD 68 billion)**, followed by **UAE, Saudi Arabia, Switzerland, Germany, and China**.
- **Reason for the Steady Flow of Remittances:**
 - **Fiscal stimulus** that resulted in **better-than-expected economic conditions** in host countries.
 - Shift in flows from **cash to digital** and from informal to formal channels.
 - **Cyclical movements in oil prices** and **currency exchange rates**.

Remittance

- A remittance is **money sent to another party, usually one in another country**.
- The sender is typically an **immigrant** and the recipient a **relative back home**.
- Remittances represent one of the **largest sources of income** for people in **low-income and developing nations**. It often exceeds the amount of **direct investment and official development assistance**.
- Remittances help families **afford food, healthcare, and basic needs**.
- **India is the world's biggest recipient of remittances**. Remittances bolsters India's **foreign exchange reserves** and helps fund its **current account deficit**.

World Bank

- **About:**
 - The Bretton Woods Conference held in 1944,

Note:

created the **International Bank for Reconstruction and Development (IBRD)** along with the **International Monetary Fund (IMF)**.

- The IBRD later became the **World Bank**.
- The **World Bank Group** is a unique global partnership of **five institutions working for sustainable solutions** that reduce poverty and build shared prosperity in developing countries.

➤ **Members:**

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

➤ **Major reports:**

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

➤ **Its Five development institutions:**

- **International Bank for Reconstruction and Development (IBRD)**: provides loans, credits, and grants.
- **International Development Association (IDA)**: provides low- or no-interest loans to low-income countries.
- **International Finance Corporation (IFC)**: provides investment, advice, and asset management to companies and governments.
- **Multilateral Guarantee Agency (MIGA)**: insures lenders and investors against political risk such as war.
- **International Centre for the Settlement of Investment Disputes (ICSID)**: settles investment-disputes between investors and countries.

World Bank's Migration and Development Brief

- This is prepared by the **Migration and Remittances Unit, Development Economics (DEC)**- the premier research and data arm of the **World Bank**.
- **The brief aims** to provide an update on key developments in the area of **migration** and **remittance flows** and related policies over the **past six months**.
- It also provides **medium-term projections of remittance flows** to developing countries..
- The brief is **produced twice a year**.

India's Sovereign Rating

Why in News

According to the **S&P Global Ratings**, India's sovereign rating will remain unchanged at the current level of BBB- for the next two years despite the potential adverse impact of surging **pandemic** on its economy.

- S&P is one of the **largest credit rating agencies**, assigning letter grades to companies and countries and the debt they issue on a scale of AAA to D, indicating their degree of investment risk.

Key Points

- **Sovereign Credit Rating:**
 - A sovereign credit rating is **an independent assessment of the creditworthiness of a country or sovereign entity**.
 - It can give investors insights into the level of risk associated with investing in the debt of a particular country, including any political risk.
 - In addition to **issuing bonds** in external debt markets, another common motivation for countries to obtain a sovereign credit rating is **to attract foreign direct investment (FDI)**.
 - At the request of the country, a credit rating agency will evaluate its economic and political environment to assign it a rating.
 - S&P gives a BBB- or higher rating to countries it considers investment grade, and grades of BB+ or lower are deemed to be speculative or "junk" grade.
 - Moody's considers a Baa3 or higher rating to be of investment grade, and a rating of Ba1 and below is speculative.
- **Sovereign Credit Ratings and India:**
 - **The Economic Survey 2020-21** has called for sovereign credit ratings methodology to be made more **transparent, less subjective and better attuned to reflect an economy's fundamentals**.
 - Within its sovereign credit ratings cohort – countries rated between A+/A1 and BBB-/Baa3 – India is a clear outlier on several parameters i.e. a sovereign whose rating is significantly lower than mandated by the effect on the sovereign rating of the parameter.

Note:

- These include GDP growth rate, inflation, general government debt (as % of GDP), cyclically adjusted primary balance (as % of potential GDP), current account balance (as % of GDP), political stability, rule of law, control of corruption, investor protection, ease of doing business, short-term external debt (as % of reserves), reserve adequacy ratio and sovereign default history.
- The outlier status remains true not only now but also during the last two decades.
- The Survey observes that India's willingness to pay is unquestionably demonstrated through its **zero sovereign default history**.
- India's ability to pay can be gauged not only by the extremely low foreign currency-denominated debt of the sovereign but also by the comfortable size of its foreign exchange reserves that can pay for the short term debt of the private sector as well as the entire stock of India's sovereign and non-sovereign external debt.

Credit Rating

- A credit rating is a quantified assessment of the **creditworthiness of a borrower** in general terms or with respect to a particular debt or financial obligation.
- A credit rating can be assigned to any entity that seeks to borrow money—an individual, corporation, state or provincial authority, or sovereign government.
- A **rating agency** is a company that assesses the financial strength of companies and government entities, especially their ability to meet principal and interest payments on their debts.
- **Fitch Ratings, Moody's Investors Service and Standard & Poor's (S&P)** are the big three international credit rating agencies controlling approximately 95% of global ratings business.
- In India, there are six credit rating agencies registered under **Securities and Exchange Board of India (SEBI)** namely, CRISIL, ICRA, CARE, SMERA, Fitch India and Brickwork Ratings.

Regulations Review Authority 2.0

Why in News

Note:

Recently, the **Reserve Bank Of India (RBI)** has constituted an Advisory Group to assist the second **Regulations Review Authority (RRA 2.0)**.

- The RBI has set up the **RRA 2.0**, initially for a period of one year from 1st May, 2021, with a view to streamline regulations and reduce the compliance burden of regulated entities.

Key Points

- **Background:**
 - In 1999, the RBI had set up a **Regulations Review Authority (RRA)** for reviewing the regulations, circulars, reporting systems, based on the feedback from the public, banks, and financial institutions.
- **RRA 2.0:**
 - It will focus on **streamlining regulatory instructions, reducing compliance burden of the regulated entities by simplifying procedures and reducing reporting requirements**, wherever possible.
 - It will also obtain feedback from **regulated entities**.
 - **Regulated entities** include **commercial banks, urban co-operative banks, Non-Banking Financial Companies**.

Reserve Bank of India

- **Formation:**
 - RBI was established on **1st April, 1935** in accordance with the provisions of the **Reserve Bank of India Act, 1934**.
 - Though originally privately owned, since nationalization in 1949, the Reserve Bank is **fully owned by the Government of India**.
- **Major Functions:**
 - **Monetary Authority:** Formulates, implements and monitors the **monetary policy**.
 - Recent Initiative: **Government Securities Acquisition Programme (G-SAP)**.
 - **Regulator and supervisor of the financial system:** Prescribes broad parameters of banking operations within which the country's banking and financial system functions.
 - **Manager of Foreign Exchange:** Manages the Foreign Exchange Management Act, 1999.
 - **Issuer of currency:** Issues and exchanges or destroys currency and coins not fit for circulation.

- **Developmental role:** Performs a wide range of promotional functions to support national objectives.
- **Regulator and Supervisor of Payment and Settlement Systems:** Introduces and upgrades safe and efficient modes of payment systems in the country to meet the requirements of the public at large.
 - **Recent Initiatives:** [Digital Payments Index](#), [Payments Infrastructure Development Fund](#)
 - **National Payments Corporation of India (NPCI)**, an umbrella organisation for all retail payments systems in India, was set up with the guidance and support of the RBI and Indian Banks' Association (IBA).
- **Related Functions:**
 - **Banker to the Government:** performs merchant banking function for the central and the state governments; also acts as their banker.
 - **Banker to banks:** maintains banking accounts of all scheduled banks.
 - The [Ways and Means Advances](#) (WMA) are short-term loan facilities which allow the Centre and states to borrow funds from the RBI to bridge their temporary mismatch between expenditure and receipts.
- **RBI's Publications:**
 - [Consumer Confidence Survey](#) (CCS - Quarterly)
 - Inflation Expectations Survey of Households (IESH - Quarterly)
 - Financial Stability Report (Half-Yearly)
 - [Monetary Policy Report](#) (Half-Yearly)
 - [Report on Foreign Exchange Reserves](#) (Half-Yearly)

Report on Social Stock Exchanges

Why in News

A technical group on Social Stock Exchanges (SSEs), constituted by the [Securities and Exchange Board of India \(SEBI\)](#), has submitted its report.

- SEBI set up the technical group in September, 2020 under the [chairmanship of Harsh Bhanwala](#), former chairman of [NABARD](#).

Note:

- Earlier, a [Working Group \(WG\)](#) on the SSE, chaired by Ishaat Hussain, submitted its report in June 2020.

Key Points

- **About Social Stock Exchanges (SSEs):**
 - The idea of the Social Stock Exchange (SSE) as a platform for listing social enterprise, voluntary and welfare organisations so that they can raise capital was mooted in the Union Budget 2019-20.
 - Social enterprise can be defined as a non-loss; non-dividend paying company created and designed to address a social problem.
 - It was proposed to be set up under the market regulator SEBI.
 - The aim of the initiative is to help social and voluntary organisations which work for social causes to raise capital as equity or debt or a unit of mutual fund.
 - SSE already exists in countries such as Singapore, UK, Canada among others. These countries allow firms operating in sectors such as health, environment and transportation to raise capital.
- **Recommendations of the Group:**
 - **Type of the Organisation:** Political and religious organisations, trade organisations as well as corporate foundations should not be allowed to raise funds through SSEs.
 - **Eligibility:** For Profit Enterprise (FPE) and Not for Profit Organisation (NPO) will be eligible to tap the SSE if they are able to show their primary goals are social intent and impact.
 - Entities listed on SSE will have to disclose their social impact report on an annual basis covering aspects such as "strategic intent and planning, approach, impact score card".
 - NPOs are usually structured as non-governmental organisations, [Section 8 companies](#), trusts or societies. FPEs can be private limited companies, partnerships or sole proprietorships.
 - **Different Modes of Fund Raising:**
 - For NPOs, fundraising through equity, zero coupon zero principal bond, development impact bonds, social impact fund with 100% grants-in grants out provision, and donations by investors through mutual funds.

- For FPEs, fundraising through equity, debt, development impact bonds, and social venture funds.
- **Eligible Activities:** Social enterprises can engage in activities in such as:
 - **Eradicating hunger, poverty, malnutrition and inequality;** promoting health care (including mental health) and sanitation; and making available safe drinking water.
 - **Promoting education, employability** and livelihoods.
 - **Promoting gender equality,** empowerment of women and LGBTQIA+ communities.
 - **Ensuring environmental sustainability,** addressing climate change (mitigation and adaptation), forest and wildlife conservation.
 - **Promoting livelihoods for rural and urban poor,** including enhancing income of small and marginal farmers and workers in the non-farm sector.
 - **Slum area development,** affordable housing and other interventions to build sustainable and resilient cities.

Export of Organic Millets

Why in News

In a major boost to exports of organic products from the country, the first consignment of millets grown in the Himalayas would be exported to Denmark.

- APEDA (Agricultural and Processed Food Products Export Development Authority) has sourced ragi (finger millet), and jhingora (barnyard millet) from farmers in Uttarakhand for exports.
- At present, organic products are exported provided they are produced, processed, packed and labelled as per the requirements of the National Programme for Organic Production (NPOP).

Key Points

- **National Programme for Organic Production (NPOP):**
 - The NPOP has been implemented by APEDA since its inception in 2001 as notified under the Foreign Trade (Development and Regulations) Act, 1992.
 - NPOP covers standards for crops and their products, live stocks and poultry products, aquaculture, apiculture etc. The exports from the country are as per the provisions in NPOP.

- The NPOP certification has been recognized by the European Union and Switzerland which enables India to export unprocessed plant products to these countries without the requirement of additional certification.

- It also facilitates export of Indian organic products to the United Kingdom even in the post Brexit phase.
- NPOP has also been recognized by the Food Safety Standard Authority of India (FSSAI) for trade of organic products in the domestic market.
- Organic products covered under the bilateral agreement with NPOP need not to be recertified for import in India.

➤ Organic Farming:

- According to FSSAI, 'organic farming' is a system of farm design and management to create an ecosystem of agriculture production without the use of synthetic external inputs such as chemical fertilisers, pesticides and synthetic hormones or genetically modified organisms.
- **Related Initiatives:**
 - Mission Organic Value Chain Development for North East Region (MOVCDNER).
 - Paramparagat Krishi Vikas Yojana (PKVY), etc.
- The Indian state of Sikkim achieved the feat of being the world's first organic state and was awarded the UN Future Policy Gold Award 2018, also known as the Oscar for best policies.

Agricultural and Processed Food Products Export Development Authority

- APEDA was established by the Government of India under the Agricultural and Processed Food Products Export Development Authority Act, 1985.
- It functions under the Ministry of Commerce and Industry. The Authority has its headquarters in New Delhi.
- It has been mandated with the responsibility of export promotion and development of the scheduled products viz. fruits, vegetables, meat products, dairy products, alcoholic and non-alcoholic beverages etc.
- It has also been entrusted with the responsibility to monitor import of sugar.

➤ Status of India's Export of Organic Food:

- India's export of organic food products rose by more

Note:

- than 51% to Rs. 7078 crore** during April-February (2020-21) compared to the same period in the previous fiscal (2019-20). In terms of **quantity**, the exports of organic food products **grew by 39%**.
- **Oil cake meal is a major commodity** of the organic product exports from the country followed by oil seeds, fruit pulps and purees, cereals & millets, spices, tea, medicinal plant products, dry fruits, sugar, pulses, coffee, essential oil etc.
 - India's organic products have been **exported to 58 countries** including USA, European Union, Canada, Great Britain, Australia, Switzerland, Israel and South Korea.

Pradhan Mantri Mudra Yojana

Why in News

More than **28.68 crore loans** for an amount of **Rs. 14.96 lakh crore** have been sanctioned by banks, NBFCs and MFIs since the launch of **Pradhan Mantri Mudra Yojana (PMMY)**.

Key Points

- About Pradhan Mantri Mudra Yojana (PMMY):
 - **Launch and Aim:**
 - It was launched by the government in 2015 for providing loans up to Rs. 10 lakh to the non-corporate, non-farm small/micro-enterprises.
 - **Funding Provision:**
 - MUDRA, which stands for **Micro Units Development & Refinance Agency Ltd.**, is a financial institution set up by the Government.
 - It **provides funding** to the non-corporate small business sector **through various last-mile financial institutions** like Banks, **Non-Banking Financial Companies (NBFCs)** and **Micro Finance Institutions (MFIs)**.
 - MUDRA **does not lend directly to micro-entrepreneurs/individuals**.
 - **Three Products:**
 - MUDRA has created three products i.e. '**Shishu**', '**Kishore**' and '**Tarun**' as per the stage of growth and funding needs of the beneficiary micro unit.
 - **Shishu:** Covering loans up to Rs. 50,000.
 - **Kishore:** Covering loans above Rs. 50,000 and up to Rs. 5 lakh.

Note:

- **Tarun:** Covering loans above Rs. 5 lakh and up to Rs. 10 lakh.
- Loans under this scheme are **collateral-free loans**.
- **Achievements:**
 - Loans have been given to **disadvantaged sections of society such as women entrepreneurs, SC/ST/ OBC borrowers, Minority community borrowers, etc.** The focus has also been on **new entrepreneurs**.
 - As per a survey conducted by Ministry of Labour and Employment, PMMY helped in **generation of 1.12 crore net additional employment from 2015 to 2018**.
 - Out of the **1.12 crore** of estimated increase in employment, **women accounted for 69 lakh (62%)**.

Purchasing Managers' Index

Why in News

The seasonally adjusted **IHS Markit India Manufacturing Purchasing Managers' Index (PMI)** was at 55.5 in April 2021, little changed from March's reading of 55.4.

Key Points

- It is a **survey-based measure** that asks the respondents about changes in their perception about key business variables as compared with the previous month.
- The **purpose** of the PMI is to provide information about current and future business conditions to company decision makers, analysts, and investors.
- It is **calculated separately** for the manufacturing and services sectors and then a **composite index** is also constructed.
- The PMI is a **number from 0 to 100**.
 - A print **above 50 means expansion**, while a score below that denotes contraction.
 - A **reading at 50 indicates no change**.
- If **PMI of the previous month is higher** than the PMI of the current month, it represents that the economy is contracting.
- It is **usually released at the start of every month**. It is, therefore, considered a good leading indicator of economic activity.
- PMI is **compiled by IHS Markit for more than 40 economies worldwide**.

- IHS Markit is a global leader in information, analytics and solutions for the major industries and markets that drive economies worldwide.
- As the official data on industrial output, manufacturing and Gross Domestic Product (GDP) growth comes much later, PMI helps to make informed decisions at an earlier stage.
- It is different from the Index of Industrial Production (IIP), which also gauges the level of activity in the economy.
- IIP covers the broader industrial sector compared to PMI.
- However, PMI is more dynamic compared to a standard industrial production index.

Asian Development Outlook 2021: ADB

Why in News

According to the report Asian Development Outlook (ADO) 2021, the second wave of Covid-19 can put India's economic recovery at "risk".

- ADO is a series of annual economic reports on the Developing Member Countries (DMCs) of the Asian Development Bank (ADB).

Key Points

- GDP Projections:
 - For India:
 - Gross Domestic Product (GDP) will rebound strongly by 11% in Fiscal Year (FY) 2021-22 due to continued economic recovery boosted by increased public investment, vaccine rollout, and a surge in domestic demand.
 - India's economic growth to moderate to 7% in FY 2022-23.
 - The economy is expected to have contracted by 8% in FY 2020-21 in line with the government's second advance estimate.
 - For Developing Asia:
 - The economic growth is set to rebound to 7.3% in 2021-22. This follows a 0.2% contraction last year.
 - Developing Asia comprises 46 members of ADB list on the basis of geographic group.

- These include new industrialized economies, countries in Central Asia, East Asia, South Asia, Southeast Asia and the Pacific.
- India is also part of Developing Asia.

Challenges:

- Pandemic remains the biggest risk for the region (Developing Asia) as potential delays in vaccine rollouts or significant new outbreaks could undermine growth.
- Increasing geopolitical tensions, production bottlenecks, financial turmoil from tightening financial conditions, and long-term scarring like learning losses due to school closures are among other risk factors.

Costs of Pandemic-induced School Closures:

- Countries are using distance learning, but this is only partially effective as many students lack access to computers and the internet.
- These disruptions will affect the skills students acquire and, eventually, their productivity and earnings as future workers.
- Learning losses range from 8% of a year of learning in the Pacific, where schools have mostly stayed open, to 55% in South Asia, where school closures have been longest.
- The present value of students' future earning reductions is estimated at USD 1.25 trillion for developing Asia, equivalent to 5.4% of the region's GDP in 2020.

Analysis for India:

- Increased government expenditure on health care, water, and sanitation will strengthen the country's resilience against future pandemics.
- Private investment is expected to pick up on improving sentiment and risk appetite, as well as accommodative credit conditions (i.e. making money less expensive to borrow and encouraging more spending).
- Domestic demand is expected to remain the main driver of growth.
 - A faster vaccine rollout will boost urban demand for services, while the rural demand will be boosted by robust agriculture growth and continued government support to farmers by expanding irrigation, improving value chains, and increasing farm loan limits.

Note:

- The government's push to the **manufacturing sector** through the **production-linked incentive scheme** will expand domestic production and help integrate domestic manufacturing with global supply chains.

Gross Domestic Product

- **GDP** is a measure of economic activity in a country. It is the **total value of a country's annual output of goods and services**. It gives the economic output from the consumers' side.
- $\text{GDP} = \text{Private consumption} + \text{Gross investment} + \text{Government investment} + \text{Government spending} + (\text{exports}-\text{imports})$

Asian Development Bank

- ADB is a **regional development bank established in 1966**.
- It has **68 members**. India is a founding member.
 - 49 are from within Asia and the Pacific and 19 outside.
- It **aims** to promote social and economic development in Asia and the Pacific.
- As of 31st December 2019, ADB's **five largest shareholders** are Japan and the United States (each with 15.6% of total shares), the People's Republic of China (6.4%), India (6.3%), and Australia (5.8%).
- It is **headquartered in Manila, Philippines**.

Core Sector Output

Why in News

The eight core sectors grew by 6.8% in March 2021 (the highest in 32 months), after a 3.8% dip in February, but the spike was largely due to the base effects from March 2020.

- During 2020-21 (April-March), output of the **eight sectors contracted by 7%** as against a positive growth of 0.4% in 2019-20.

Key Points

- **About Eight Core Sectors:**
 - These comprise **40.27%** of the weight of items included in the **Index of Industrial Production (IIP)**.
 - The eight core sector industries **in decreasing order of their weightage**: Refinery Products>

Note:

Electricity> Steel> Coal> Crude Oil> Natural Gas> Cement> Fertilizers.

Base Effect:

- The base effect refers to the effect that the choice of a basis of comparison or reference can have on the result of the comparison between data points.
- For example, the base effect can lead to an apparent under- or overstatement of figures such as inflation rates or economic growth rates if the point chosen for comparison has an unusually high or low value relative to the current period or the overall data.
- Production of natural gas, steel, cement and electricity jumped 12.3%, 23%, 32.5% and 21.6% in March 2021, as against (-) 15.1%, (-) 21.9%, (-) 25.1% and (-) 8.2% in March 2020, respectively (**low base effect**).

Index of Industrial Production:

- IIP is an indicator that measures the changes in the volume of production of industrial products during a given period.
- It is compiled and published monthly by the **National Statistical Office (NSO)**, Ministry of Statistics and Programme Implementation.
- It is a **composite indicator** that measures the growth rate of industry groups classified under:
 - **Broad sectors**, namely, Mining, Manufacturing, and Electricity.
 - **Use-based sectors**, namely Basic Goods, Capital Goods, and Intermediate Goods.
- **Base Year** for IIP is **2011-2012**.
- **Significance of IIP:**
 - It is used by government agencies including the Ministry of Finance, the Reserve Bank of India, etc, for policy-making purposes.
 - IIP remains extremely relevant for the calculation of the quarterly and advance **GDP (Gross Domestic Product)** estimates.

Small Savings Instruments

Why in News

Recently, the central government withdrew its orders of reducing the rates on all **small savings instruments/schemes**.

Key Points

- **About:**
 - Small savings instruments **help individuals achieve their financial goals over a particular period.**
 - They are the **major source of household savings in India.**
 - The small savings instrument basket **comprises 12 instruments.**
 - Collections from all small savings instruments are credited to the **National Small Savings Fund (NSF).**
- **Classification:** Small savings instruments can be classified under three heads:
 - **Postal Deposits** (comprising savings account, recurring deposits, time deposits of varying maturities and monthly income scheme).
 - **Savings Certificates:** National Small Savings Certificate (NSC) and Kisan Vikas Patra (KVP).
 - **Social Security Schemes:** **Sukanya Samriddhi Scheme**, Public Provident Fund (PPF) and Senior Citizens' Savings Scheme (SCSS).
- **Rates of Small Saving Instruments:**
 - The rates for small saving instruments are **announced quarterly.**
 - Theoretically, the **rate changes is based on yields of government securities of corresponding maturity.** However, political factors also influence the rate change.
 - The **Shyamala Gopinath panel (2010)** constituted on the Small Saving Scheme had suggested a **market-linked interest rate system** for small savings schemes.

National Small Savings Fund

- **Establishment:**
 - National Small Savings Fund (NSF) in the Public Account of India was **established in 1999.**
- **Administration:**
 - The Fund is administered by the Government of India, **Ministry of Finance** (Department of Economic Affairs) under National Small Savings Fund (Custody and Investment) Rules, 2001, framed by the President under Article 283 (1) of the Constitution.
- **Objective:**
 - To **de-link small savings transactions from the Consolidated Fund of India** and ensure their

operation in a transparent and self-sustaining manner.

- Since NSSF operates in the public account, its transactions do not impact the fiscal deficit of the Centre directly.

Model Insurance Villages

Why in News

The Insurance Regulatory and Development Authority of India (IRDAI) has mooted the concept of '**Model Insurance Village (MIV)**' to boost insurance penetration in rural areas.

- According to the **Economic Survey for 2020-21**, India's **insurance penetration**, which was at **2.71% in 2001**, has steadily **increased to 3.76% in 2019**, but stayed much below the global average of 7.23%.
- Recently, the Parliament has passed the **Insurance Amendment Bill 2021** to increase the **foreign direct investment (FDI)** limit in the **insurance sector** to **74% from 49%**.

Key Points

- **Concept of Model Insurance Village (MIV):**
 - The idea is to **offer comprehensive insurance protection to all the major insurable risks that villagers are exposed to** and make available covers at **affordable or subsidised cost.**
 - In order to make the premium affordable, **financial support** needs to be explored through **NABARD**, other institutions, **CSR (Corporate Social Responsibility) funds**, government support and support from reinsurance companies.
 - It may be implemented in a **minimum of 500 villages** in different districts of the country in the first year and **increased to 1,000 villages** in the subsequent two years.
 - **Every general insurance company and reinsurance company** accepting general insurance business and having offices in India **needs to be involved** for piloting the concept.
- **Possible Offerings under MIV:**
 - Weather Index product or hybrid product combining weather index and indemnity-based insurance protection for various **crops** that remains **uncovered** under **Pradhan Mantri Fasal Bima Yojna (PMFBY).**

Note:

- Flexible Farm Insurance Package Policies targeting **comprehensive needs of crops, livestock, farmer, farm implements.**
- Separate products for **high value agriculture, contract farming and corporate farming community** as their needs are different.
- **States can be offered macro insurance covers** based on predefined parametric weather indexes covering large complex risks arising out of natural catastrophes affecting the agriculture ecosystem and rural economy.
- **Challenges in Spreading Insurance to Rural Areas:**
 - **Lack of awareness, limited choice of insurance products, absence of people-friendly and transparent claim settlement mechanisms, and weak network of insurance firms**, are some of the issues and challenges in advancing growth of rural insurance business.

Insurance Regulatory and Development Authority of India

- Following the recommendations of the **Malhotra Committee report**, in 1999, the **Insurance Regulatory and Development Authority (IRDA)** was constituted as an **autonomous body** to regulate and develop the insurance industry.
- It was **incorporated as a statutory body in April 2000**.
- The key **objectives** of the IRDA include the promotion of competition so as to enhance customer satisfaction through increased consumer choice and lower premiums while ensuring the financial security of the insurance market.
- It is **headquartered in Hyderabad**.

Reinsurance

- It is a process whereby one entity (the reinsurer) takes on all or part of the risk covered under a policy issued by an insurance company in consideration of a premium payment. In other words, it is a form of an insurance cover for insurance companies.

RBI's Measures to Fight Covid-Second Wave

Why in News

Recently, the **Reserve Bank of India (RBI)** announced

a series of measures to support the nation's fight against the **second wave of Covid-19 infections**.

- The measures form the **first part of a calibrated and comprehensive strategy** against the **pandemic**.
- Earlier in 2020 also the **RBI took measures to help deal with the economic fall out** of the pandemic.

Key Points

- **Term Liquidity Facility for Supporting Healthcare Infrastructure:**
 - Term Liquidity Facility of **Rs. 50,000 crore** with tenure of up to 3 years, at **repo rate**, to ease access to credit for providers of emergency health services.
 - Under the scheme, banks will provide fresh lending support to a wide range of entities, including vaccine manufacturers, importers/suppliers of vaccines and priority medical devices, hospitals/ dispensaries, pathology labs, manufacturers and suppliers of oxygen and ventilators, and logistics firms.
 - These loans will continue to be classified under **priority sector** till repayment or maturity, whichever is earlier.
 - This lending facility will be available up to 31st March 2022.
- **Special Long Term Repo Operations for Small Finance Banks:**
 - RBI would conduct **special three-year long-term repo operations (SLTRO)** of **Rs. 10,000 crore** at **repo rate** for small finance banks (SFBs).
 - **Long Term Repo Operation** is a tool under which the central bank provides one-year to three-year money to banks at the prevailing **repo rate**, accepting government securities with matching or higher tenure as the collateral.
 - The SFBs would be able to deploy these funds for fresh lending of up to Rs. 10 lakh per borrower.
 - This is to provide further support to small business units, micro and small industries, and other unorganised sector entities adversely affected during the current wave of the pandemic.
- **Priority Sector Lending:**
 - **Small Finance Banks (SFBs)** are now permitted to regard fresh on-lending to **Microfinance institutions (MFIs)** with **asset size up to Rs. 500 crore**, as priority sector lending.

Note:

- This facility will be available up to **31st March 2022**.
- **Credit flow to MSME Entrepreneurs:**
- To further incentivize inclusion of unbanked **Micro, Small and Medium Enterprises (MSMEs)** into banking system, exemption provided in February, 2021 wherein scheduled banks were allowed to deduct credit given to new MSME borrowers from **Net Time & Demand Liabilities** for calculation of **Cash Reserve Ratio (CRR)**, is now extended to **31st December, 2021**.
- **Stress Resolution Framework 2.0:**
- This Framework is to relieve stress faced by most vulnerable categories of borrowers – namely **individuals, borrowers and MSMEs**.
 - Individuals, borrowers and MSMEs **who have not availed any restructuring** will be eligible to be considered under **Resolution Framework 2.0**.
 - For individuals and small businesses **who have availed restructuring of loans under Resolution Framework 1.0**, lending institutions can now extend residual tenure up to a total period of 2 years.
 - Lending institutions are now **permitted to review working capital sanction limits, as a one-time measure**.
- **Floating Provisions and Countercyclical Provisioning Buffer:**
- In order to mitigate the pandemic related stress on banks and as a measure to enable capital conservation, **banks are being allowed to utilise 100% of floating provisions held by them as 31st December, 2020**, for making specific provisions for **Non-Performing Assets (NPAs)**.
 - Countercyclical provisioning buffers and floating provisions broadly **refer to the specific amount that banks need to set aside in good times above the mandatory provisioning requirement as prescribed by RBI**, these are used only in contingencies or extraordinary times of economic or system-wide downturns. **Banks have started building such reserves since 2010**.
- **Relaxation of Overdraft Facility for States:**
- To enable the State governments to better manage their fiscal situation in terms of their cash flows and market borrowings, **the maximum number of days of overdraft (OD) in a quarter is being increased from 36 to 50 days** and the number of consecutive days of OD from 14 to 21 days.

- This facility is available up to **30th September, 2021**.

- Earlier, the **Ways and Means Advance (WMA)** limits of states were enhanced.

➤ **Rationalization of Knowing Your Customer (KYC) Norms:**

- The RBI has also decided to **extend the scope of video KYC** (know-your-customer) or **V-CIP** (video-based customer identification process) **for new categories of customers** such as proprietorship firms, authorised signatories and beneficial owners of legal entities.

Falling Bond Yield

Why in News

Recently, the **Reserve Bank of India's (RBI)** decision to step up purchase of **Government Securities (G-Sec)** under the **Government Securities Acquisition Programme (G-SAP)** led to the **yield on the benchmark 10-year bond falling below 6%**.

- In India, the **yield of 10-year G-Sec is considered the benchmark** and shows the overall interest rate scenario.

Key Points

➤ **Bond Yield:**

- Bond yield is the **return an investor realizes on a bond**. The **mathematical formula** for calculating yield is the **annual coupon rate divided by the current market price of the bond**

- **Bond:** Is an **instrument to borrow money**. A bond could be issued by a country's government or by a company to raise funds.
- **Coupon Rate:** It is the **rate of interest paid by bond issuers on the bond's face value**.

➤ **Effect of General Movement of Bond Yields:**

- Movements in yields depend on trends in interest rates, it can result in **capital gains or losses for investors**.

- A rise in bond yields in the market will bring the price of the bond down.
- A drop in bond yield would benefit the investor as the price of the bond will rise, generating capital gains.

Note:

➤ **Reason for Decreasing Bond Yields:**

- Due to **economic uncertainty caused by Covid-19.**
- In April 2021, the RBI launched **G-SAP** which has **caused a decrease in G-sec yields** which has continued since then.

➤ **Impact:**

○ **Better Equity Markets:**

- A decline in yield is also **better for the equity markets because money starts flowing out of debt investments to equity investments.**
- **Equity market:** It is a **market in which shares of companies are issued and traded**, either through exchanges or over-the-counter markets. **Also known as the stock market.**
- That means **as bond yields go down, the equity markets tend to outperform** by a bigger margin and as bond yields go up equity markets tend to falter.

○ **Reduced Cost of Capital:**

- When **bond yields go up**, the cost of capital goes up. That means that **future cash flows get discounted at a higher rate.**
- **Discounting** is the process of determining the present value of a payment or a stream of payments that is to be received in the future.
- This compresses the valuations of these stocks. That is one of the reasons that **whenever the interest rates are cut by the RBI, it is positive for stocks.**

○ **Reduces Risk of Bankruptcy:**

- When **bond yields go up**, it is a signal that **corporates will have to pay a higher interest cost on debt.**
- As debt servicing costs go higher, **the risk of bankruptcy and default also increases** and this typically makes mid-cap and highly leveraged companies vulnerable.

➤ **RBI's Stand:**

- The RBI has been **aiming to keep yields lower as that reduces borrowing costs for the government** while preventing any upward movement in lending rates in the market.
- A rise in bond yields will put pressure on interest rates in the banking system which will lead to a hike in lending rates. The RBI **wants to keep interest rates steady to kick-start investments.**

Government Securities Acquisition Programme

➤ **About:**

- The RBI, for the year 2021-22, has decided to put in place a **secondary market G-SAP 1.0.**
- It is part of RBI's **Open Market Operations (OMOs).**

- Under the programme, the **RBI will commit upfront to a specific amount of Open Market Purchases of G-Secs.**

➤ **Objective:**

- To **avoid volatility in the G-sec market** in view of its central role in the pricing of other financial market instruments across the term structure and issuers, both in the public and private sectors.

➤ **Significance:**

- It will **provide certainty to the bond market participants** with regard to RBI's commitment of support to the bond market in **Financial Year (FY) 2021-2022.**
- It will **help reduce the difference between the repo rate and the 10-year government bond yield.**
 - That, in turn, will **help to reduce the aggregate cost of borrowing** for the Centre and states in FY 2021-22.
 - **Repo rate** is the rate at which RBI lends money to commercial banks.
- It will **enable a stable and orderly evolution of the yield curve** amidst comfortable liquidity conditions.
 - **Yield curve:** It is a line that plots yields (interest rates) of bonds having equal credit quality but differing maturity dates.
 - The slope of the yield curve gives an idea of future interest rate changes and economic activity.

Super Cycle of Commodities

Why in News

Recently, there has been an across-the-board **rise in global commodity prices** that is being billed as a new **commodity super cycle.**

- A commodity is a **basic good used in commerce** that

Note:

is **interchangeable** with other goods of the same type. Commodities are most often **used as inputs in the production of other goods or services**.

ON THE RISE			
Commodity (Unit)	May 1, 2020	May 7, 2021	% Rise
NSE Nifty Metal Index	1700	5500	223
Hot-rolled coil/HRC Steel*	\$478	\$1519	217
Copper (per pound)	\$2.42	\$4.83	99
Brent Crude. (Per barrel)	\$24.2	\$68.27	182

Source: COMEX, National Stock Exchange
*Contract of 20 short tonnes

Key Points

- **About:**
 - A commodity super cycle is a **sustained period of abnormally strong demand growth** that producers struggle to match, sparking an **increase in prices that can last years or in some cases a decade or more**.
- **Current Situation:**
 - **Metals:**
 - Steel, the most commonly used input in the construction sector and industries, is at **all-time highs, as most metals** including base and precious metals prices have increased a lot in the last one year.
 - **Agricultural Products:**
 - Sugar, corn, coffee, soybean oil, palm oil — **have risen sharply** in the US commodities market, the **effect of which is being seen in the domestic market, too.**
- **Reason:** The new commodity super cycle is resulting from:
 - **Recovery in global demand** (led by recovery in China and the US).
 - **Supply-side constraints.**
 - **Loose monetary policy of global central banks.**
 - **Investment in Asset Creation:** It is also a result of money starting to hide in assets that are stores of value as there is an expectation that inflation may rise.
 - Therefore it is fear of **inflation** that is leading to jump in prices and it is not demand driven.
- **Concerns:**
 - It is **leading to input cost pressures** and is a growing concern, as it is not only expected to have

a bearing on cost of infrastructure development in India but also **have an impact on the overall inflation, economic recovery and policy making.**

- Higher metal prices will lead to **higher Wholesale Price Index (WPI) inflation** and so the core inflation may not come down.

Loose and Tight Monetary Policies

- A monetary policy that **lowers interest rates and stimulates borrowing** is an **expansionary monetary policy or loose monetary policy.**
- Conversely, a monetary policy that **raises interest rates and reduces borrowing** in the economy is a **contractionary monetary policy or tight monetary policy.**

Inflation

- Inflation refers to the **rise in the prices of most goods and services** of daily or common use, such as food, clothing, housing, recreation, transport, consumer staples, etc.
- Inflation **measures the average price change** in a basket of commodities and services over time.
- Inflation is **indicative of the decrease in the purchasing power** of a unit of a country's currency. This could ultimately lead to a deceleration in economic growth.
- However, a **moderate level of inflation is required in the economy to ensure that production is promoted.**
- In India, inflation is primarily measured by two main indices — **WPI (Wholesale Price Index)** and **CPI (Consumer Price Index)** which measure wholesale and retail-level price changes, respectively.

Core Inflation

- It is the change in the costs of goods and services but **does not include those from the food and energy sectors.** This measure of inflation excludes these items **because their prices are much more volatile.**
- It is important because **it's used to determine the impact of rising prices on consumer income.**

NITI Aayog's Report for a Digitally Inclusive Bharat

Why in News

The **NITI Aayog** and **Mastercard** have released a

Note:

report titled 'Connected Commerce: Creating a Roadmap for a Digitally Inclusive Bharat'.

- The report identifies challenges in accelerating **Digital Financial Inclusion (DFI)** in India and provides recommendations for making digital services accessible to its 1.3 billion citizens.

Digital Financial Inclusion

"Digital financial inclusion (DFI)" can be defined broadly as **digital access to and use of formal financial services by excluded and underserved populations**. Such services should be suited to customers' needs, and delivered responsibly, at a cost both affordable to customers and sustainable for providers.

Key Points

➤ Challenges:

- **Demand Side Gap:**

- Lot of effort has been put to attain DFI and much success on the supply side of DFI has been seen (**e-governance, the JAM trinity, Goods and Services Tax, Direct Benefit Transfer (DBT) schemes**).
- However, the break in the digital financial flow comes at the last mile, where **account holders mostly withdraw cash for their end-use**.

- **Unsuccessful Agri-Techs:**

- Agriculture, with its allied sectors, provides livelihood to a large section of the Indian population. Over the years, agriculture's contribution to national GDP has declined from 34% in 1983-84 to just 16% in 2018-19.
- Most agri-techs have not succeeded in digitizing financial transactions for farmers or enabling formal credit at lower rates of interest by leveraging transaction data.

- **Inability of MSMEs to Access Formal Finance:**

- **Micro, Small and Medium Enterprises (MSMEs)** have been a key growth driver for the Indian economy. According to a 2020 Report, the category employed some 110 million people, or over 40% of India's non-farm workforce.
- The lack of proper documentation, bankable collateral, credit history and non-standard financials force them to access informal credit at interest rates that are double of those from formal lenders.

Trust and Security in Digital Commerce:

- The surge in digital transactions has increased the **risk for possible security breaches**, both for consumers and businesses.
- A Medici report of June 2020 says **40,000 cyber-attacks targeted the IT infrastructure of the banking sector in India**.

Digitally Accessible Transit Systems:

- With the onset of the pandemic, there is an increasing need for transit systems to be further integrated with contactless payments in India.
- Globally, the trend is toward **open-loop transit systems**, with interoperable payment solutions allowing travelers to switch between different modes of transport with a connected payments network.

➤ Recommendations:

- For market players, it is critical to address the **gap on the demand side** by creating user-friendly digital products and services that encourage the behavioral transition from cash to digital.
- A significantly successful example is that of **FASTag**.
- **Strengthening the payment infrastructure** to promote a level playing field for **Non-Banking Financial Companies (NBFCs)** and banks.
- **Digitizing registration and compliance processes** and diversifying credit sources to enable growth opportunities for **MSMEs**.
- **Building information sharing systems**, including a 'fraud repository', and ensuring that online digital commerce platforms carry warnings to alert consumers to the risk of frauds.
- **Enabling agricultural NBFCs to access low-cost capital** and deploy a '**phygital**' (physical + digital) model for achieving better long-term digital outcomes. **Digitizing land records** will also provide a major boost to the sector.
- **To make city transit seamlessly accessible** to all with minimal crowding and queues, leveraging existing smartphones and contactless cards, and aim for an inclusive, interoperable, and fully open system.

Digital Financial Inclusion Initiatives Taken in India

Note:

- **Jan Dhan-Aadhar-Mobile (JAM) Trinity:**
 - The combination of Aadhaar, **Pradhan Mantri Jan-Dhan Yojana (PMJDY)**, and a surge in **mobile communication** has reshaped the way citizens access government services.
 - As per the estimates in March 2020, the total number of beneficiaries under Jan Dhan scheme have been more than 380 million.
- **Expansion of Financial Services in Rural and Semi-Urban Areas:**
 - Reserve Bank of India (RBI) and **National Bank for Agriculture and Rural Development (NABARD)** have taken initiatives to promote financial inclusion in rural areas. These include:
 - Opening of bank branches in remote areas,
 - Issuing Kisan Credit Cards (KCC),
 - Linkage of self-help groups (SHGs) with banks,
 - Increasing the number of Automated Teller Machines (ATMs),
 - Business correspondents model of Banking
 - **Payment Infrastructure Development Fund (PIDF) scheme**, etc.
- **Promotion of Secure Digital Payments:**
 - With the strengthening of the **Unified Payment Interface (UPI)** by National Payments Corporation of India (NPCI), digital payments have been made secure, compared to the past.
 - The **Aadhar-enabled Payment System (AEPS)** enables an Aadhar Enabled Bank Account (AEBA) to be used at any place and at any time, using micro ATMs.
 - The payment system has been made more accessible due to offline transaction-enabling platforms, like Unstructured Supplementary Service Data (USSD), which makes it possible to use mobile banking services without internet, even on a basic mobile handset.
- **Enhancing Financial Literacy:**
 - The Reserve Bank of India has undertaken a project titled "**Project Financial Literacy**".
 - The Objective of the project is to disseminate information regarding the central bank and general banking concepts to various target groups, including, school and college going children, women, rural and urban poor, defence personnel and senior citizens.

- **Pocket Money** is a flagship programme of **Securities and Exchange Board of India (SEBI)** and National Institute of Securities Market (NISM) aimed at increasing financial literacy among school students.

Proposal for Changing Promoters to Person in Control: SEBI

Why in News

Recently, the **Securities and Exchange Board of India (SEBI)** has proposed doing away with the concept of promoters and moving to 'person in control.'

- It has also suggested reducing the minimum lock-in periods post a public issue for promoters and pre-Initial Public Offering (IPO) shareholders.

SEBI

- SEBI is a statutory body **established in April, 1992** in accordance with the provisions of the **Securities and Exchange Board of India Act, 1992**.
- The basic functions of the Securities and Exchange Board of India is **to protect the interests of investors in securities and to promote and regulate the securities market.**

Key Points

- **Promoter:**
 - The meaning of 'promoter' and 'promoter group' is **defined in Companies Act, 2013 and SEBI (ICDR) Regulations, 2018**.
 - Generally, a **promoter conceives an idea for setting-up a particular business** at a given place and performs various formalities required for starting a company.
 - **Promoter group** includes:
 - **Any body corporate** in which a group of individuals or companies or combinations thereof acting in concert, which hold 20% or more of the equity share capital in that body corporate **and**
 - Such a group of individuals or companies or combinations thereof **also holds 20% or more of the equity share capital of the issuer** and are also acting in concert.

Note:

- An **issuer** is a legal entity that develops, registers and sells securities to finance its operations.

Initial Public Offering

- IPO is the **selling of securities to the public in the primary market**.
 - Primary market **deals with new securities** being issued for the first time. It is also known as the **new issues market**.
 - It is **different from the secondary market** where existing securities are bought and sold. It is also known as the stock market or stock exchange.
- It is **when an unlisted company makes either a fresh issue of securities or an offer for sale of its existing securities or both** for the first time to the public.
 - Unlisted companies are companies that are not listed on the stock exchange.
- It is **generally used by new and medium-sized firms** that are looking for funds to grow and expand their business.

IPO-Locking Period

- It is a caveat outlining a **period of time after a company has gone public** when major shareholders are prohibited from selling their shares.

Offer For Sale

- Under this method, **securities are not issued directly to the public but are offered for sale through intermediaries** like issuing houses or stock brokers.
- In this case, a company sells securities en bloc at an agreed price to brokers who, in turn, resell them to the investing public.

Promoter to Person in Control Concept:

- Need:**
 - The shift is necessitated by the **changing investor landscape in India** where **concentration of**

ownership and controlling rights do not vest completely in the hands of the promoters or promoter group because of the emergence of new shareholders such as private equity and institutional investors.

- Investor **focus on the quality of board and management has increased**, thereby reducing the relevance of the concept of promoter.
- The **current definition** focuses on capturing holdings by a common group of individuals or persons and often **results in capturing unrelated companies with common financial investors**.
- Significance:**
 - This move will **lighten the disclosure burden for firms**.
 - The changes in nature of ownership could **lead to situations where the persons with no controlling rights and minority shareholding continue to be classified as a promoter**.
 - By virtue of being called promoters, such persons may have influence over the listed entity disproportionate to their economic interest, which may **not be in the interests of all stakeholders**.

Transition Period:

- A **three-year transition period** for moving from the promoter to person in control concept has been suggested.

Reducing the Locking Period of IPOs:

- If the **object of the issue involves an offer for sale or financing other than for capital expenditure for a project**, then the minimum promoters' contribution of 20% should be **locked-in for one year from the date of allotment in the IPO**.
- Currently, the lock-in **period is three years**.



Note:

International Relations

Highlights

- G7 Foreign Ministers' Meet
- India Receives Taiwan's Assistance
- Kyrgyzstan-Tajikistan Border Tension
- Participation of Women & Youth in State Assemblies
- India-UK Virtual Summit
- India-EU Leaders' Meeting
- 4th India-Swiss Financial Dialogue
- Al-Aqsa Mosque & Sheikh Jarrah: Israel-Palestine

G7 Foreign Ministers' Meet

Why in News

Recently, Foreign Ministers from the **Group of Seven (G7)** countries (**USA, UK, Canada, France, Germany, Italy and Japan**) held a meeting in London, UK.

- The 47th G7 Summit will be held in **June 2021**. The UK is the **host country**.

Key Points

- **About:**
 - **Invited Guests:**
 - Australia, India, South Korea, South Africa and the Chair (Brunei Darussalam) of the **Association of Southeast Asian Nations (ASEAN)**.
 - Australia, India, South Korea and South Africa will also join the G7 Summit in June.
 - **Discussions:**
 - **Russia's Irresponsible and Destabilising Behaviour:** This includes the large build-up of Russian military forces on Ukraine's borders and in illegally-annexed Crimea.
 - **Related to China:** Human rights violations and abuses in Xinjiang and in Tibet, especially the targeting of Uyghurs, members of other ethnic and religious minority groups.
 - Called on China to respect Hong Kong's high degree of autonomy and rights and freedoms (Basic Law).
 - Condemned the **military coup in Myanmar**.
 - **Indo-Pacific:**
 - Support for the **centrality of ASEAN on the Indo-Pacific**.

- Reiterated the **importance of maintaining a free and open Indo-Pacific** which is inclusive and based on the rule of law, democratic values, territorial integrity, transparency, the protection of human rights and fundamental freedoms, and the peaceful resolution of disputes.

- **International Rules-based Order:**

- This can be described as a shared commitment by all countries to conduct their activities in accordance with agreed rules that evolve over time, such as international law, regional security arrangements, trade agreements, immigration protocols, and cultural arrangements.

- **Group of Seven (G7):**

- **About:**
 - It is an **intergovernmental organisation** that was **formed in 1975**.
 - The bloc **meets annually** to discuss issues of common interest like global economic governance, international security and energy policy.
 - The G7 **does not have a formal constitution or a fixed headquarters**. The decisions taken by leaders during annual summits are **non-binding**.
 - The **groundwork for the summit**, including matters to be discussed and follow-up meetings, is **done by the "sherpas"**, who are generally personal representatives or members of diplomatic staff such as ambassadors.
 - The **leaders of important international organizations** like **European Union, IMF, World Bank** and the **United Nations** are also invited.

Note:

- **Issues:**

- Not all of the G7 countries are among the most advanced now. India is both a military and economic giant but isn't part of the G7. So, its expansion, just like that of the United Nations Security Council, is called for.

- **India and G7:**

- **Previous Participation:**

- The participation of India at the 45th summit in Biarritz, France, in August 2019 is a reflection of deepening strategic partnership and recognition of India as a major economic power.
- India was also invited for the 2020 summit hosted by the USA which could not take place due to the pandemic.
- Previously India had attended the G8 summit (it became G7 from G8 with the expulsion of Russia in 2014) five times between 2005 and 2009.

- **Significance of India's Engagement with G7:**

- It provides an opportunity for India to develop cordial relations with developed countries.
- It will boost security cooperation with member countries in Indo-Pacific, particularly the Indian ocean.
- As current president of Brazil-Russia-India-China-South Africa (BRICS) and G20 president in 2023, India will play a key role driving in multilateral cooperation helping to build back better around the world.

India Receives Taiwan's Assistance

Why in News

Recently, India received Covid-19 assistance from Taiwan including oxygen concentrators and cylinders.

- The aid reflects the growing engagement between India and Taiwan, especially against the backdrop of the standoff with China on the Line of Actual Control (LAC) and China's aggressive actions across the region, including repeated violations of Taiwan's airspace.
- India, meanwhile, has not yet accepted China's offers of aid and assistance and has preferred to source medical supplies from China on a commercial basis.

Note:

Taiwan

- Taiwan - the Republic of China (ROC), home to twenty-three million people, is an island off the southern coast of China that has been governed independently from mainland China since 1949.



- Its neighbours include China (officially the People's Republic of China, PRC) to the west, Japan to the northeast, and the Philippines to the south.
- Taiwan is the most populous state that is not a member of the United Nations (UN) and the largest economy outside the UN.
- Taiwan is Asia's 5th largest economy.
- It is a global leader in chip manufacture and the second-largest manufacturer of IT hardware, etc.
- Relationship between China and Taiwan:
 - The People's Republic of China (PRC) views the island as a province, while in Taiwan—a territory with its own democratically elected government—leading political voices have differing views on the island's status and relations with the mainland.
 - China and Taiwan maintain a fragile relationship, which has improved during the past seven years but is periodically tested.
 - 'One China Policy' is the diplomatic acknowledgement of China's position that there is only one Chinese government.
 - This means that countries seeking diplomatic relations with the People's Republic of China (PRC, Mainland China) must break official relations with the Republic of China (ROC, Taiwan) and vice versa.

Key Points

- **India-Taiwan Relations:**
 - Diplomatic Relations:

- India and Taiwan do not have formal diplomatic relations but since 1995, both sides have maintained representative offices in each other's capitals that function as de facto embassies. India has backed the "one-China policy".
- Economic Relations:
 - Trade ties amounted to USD 7.5 billion in 2019, up from USD 1 billion in 2000.
 - India and Taiwan in 2018 signed a bilateral investment agreement.
 - There are around 200 Taiwanese companies in the field of electronics, construction, petrochemicals, machine, Information and Communications Technology and auto parts operating in India.
 - In the field of science and technology, there are more than thirty ongoing government-funded joint research projects.
- Cultural Relations:
 - Both sides have also expanded educational exchanges after a mutual degree recognition agreement in higher education was signed in 2010.
- Challenge in the Relations:
 - One China policy: India finds it difficult to realise the full potential of its bilateral relationship with Taiwan. At present, about 15 countries worldwide continue to recognise Taiwan as an independent state. India is not among the sixteen countries.
 - Hurdles in Economic Cooperation: Taiwan's increased investments have occurred in the face of cultural challenges, bureaucratic hurdles, and pressure on India from domestic producers.
- Scope of Increasing Ties with Taiwan:
 - Taiwan is an important geographical entity in the Indo-Pacific region. India's vision of the Indo-Pacific is inclusive and it must encourage the participation of Taiwan and other like-minded countries.
 - India is already a major focus country in Taiwan's New Southbound Policy, launched in 2016. Under this, Taiwan aims to increase its international profile by expanding political, economic, and people-to-people linkages.
 - Taiwan's reputation as the world leader in semiconductor and electronics complements India's leadership in ITES (Information Technology-Enabled Services).

- This can contribute much to the "Make in India", "Digital India" and "Smart Cities" campaigns.
- Taiwan's agro-technology and food processing technology can also be very beneficial for India's agriculture sector.
- Taiwan is an integral part of the regional supply chain mechanism, and a trade agreement with Taiwan will help India remain connected to the regional economic dynamism, amidst its attempts to de-couple from China.

Kyrgyzstan-Tajikistan Border Tension

Why in News

Recently, a ceasefire on the border between Kyrgyzstan and Tajikistan appeared to be holding after a day of intense fighting between the two countries that has killed about 40 people and wounded about 175.

- Kyrgyzstan and Tajikistan belong to the central asia region. Other countries of the region are Kazakhstan, Turkmenistan, and Uzbekistan.

Key Points

- Background:
 - Both nations have claimed the area around the water supply facility in Kok-Tash, a dispute dating back decades to when they were both part of the Soviet Union.



Note:

- The current configuration of the Kyrgyz-Tajik border is the **product of Soviet mapmakers** drawing the dividing lines for Soviet republics, after the **Union of Soviet Socialist Republics (USSR) collapsed in late 1991.**
 - The meandering boundary between Tajikistan and Kyrgyzstan is particularly tense as over a third of its **1,000-km length is disputed. Restrictions on access to land and water** that communities regard as theirs have often **led to deadly clashes in the past.**
- **International Response:**
- Russia and **European Union (EU)** welcomed the ceasefire deal and emphasised the **need for a lasting and peaceful solution.**
- **Importance of Central Asia for India:**
- **Political:**
 - India has a very wide array of interests in Central Asia covering **security, energy, economic opportunities etc.**
 - Security, stability and prosperity of Central Asia is **imperative for peace and economic development of India.**
 - Central Asia serves as a **land bridge between Asia and Europe, making it geopolitically axial for India.**
 - Both **India and Central Asian Republics (CARs) share many commonalities and perceptions** on various regional and world issues and can play a crucial role in providing regional stability.
 - **Economic:**
 - The region is **rich in natural resources** such as petroleum, natural gas, antimony, aluminum, gold, silver, coal and uranium which **can be best utilized by Indian energy requirements.**
 - Central Asia has **huge cultivable areas lying barren** and without being put to any productive use, offering enormous opportunity for cultivation of pulses.
 - CARs are fast getting linked to the global market for production, supplies of raw materials and services. They are also increasingly getting integrated into the **East-West Trans-Eurasian transit economic corridors.**
- **Indian Initiatives:**
- India intends **expansion of International North South Transport Corridor (INSTC)** to Afghanistan and Uzbekistan.

- It will act as a vital gateway to access Eurasian markets and optimally operationalize its use, requiring a Central Asian state joining the project as a direct stakeholder.
- **India-Central Asia Dialogue:**
- India has proposed setting up of 'India-Central Asia Development Group' to take forward development partnership between India & Central Asian countries.
 - This group will help India to expand its footprints in the resource-rich region amid China's massive inroads and to fight terror effectively, including in Afghanistan.

India-Kyrgyzstan

- **Political:**
- India has enjoyed **strong bilateral ties with Kyrgyzstan since 1991.**
 - India was **one of the first countries to establish diplomatic ties with Kyrgyzstan in 1992.**
- **Culture & Economic:**
- **Since 1992, the two countries have many agreements**, including on Culture, Trade and Economic Cooperation, Civil Aviation, Investment Promotion and Protection, Avoidance of Double Taxation, Consular Convention etc.
- **Military:**
- In 2011, the joint '**Khanjar**' series of exercises was started.
- **Indian Diaspora:**
- In Kyrgyzstan, about **9,000 Indian students** are studying medicine in various medical institutions in the country. Also, **there are many businessmen living in Kyrgyzstan** who are involved in trade and several other services there.
- **Strategic:**
- The Kyrgyz leaderships have been **largely supportive of India's stand on Kashmir.**
 - They also support India's bid for a permanent seat at the **United Nations Security Council (UNSC).**

India-Tajikistan

- **Political:**
- India and Tajikistan elevated bilateral relations to the level of a **Strategic Partnership in 2012.**

Note:

- Tajikistan supported India's membership to the **Shanghai Cooperation Organization (SCO)** and also permanent membership of an expanded UNSC.
- India supported Tajikistan's accession to the **World Trade Organization** in 2013.

➤ **Culture & Economic:**

- Trade between two sides is **not to expectations despite efforts from both countries, due to more transit time and lack of readily accessible trade routes.**
- Despite limitations, trade in food processing, mining, pharmaceuticals, textiles, skill development, science & technology, Information Technology, culture and tourism are continued between two countries.

➤ **India's Assistance:**

- India delivered **major food assistance** in 2001-02. To overcome a crisis caused by an unprecedented harsh winter in January-February **2008**, India gave a **grant of USD 2 million** (USD 1 million as cash assistance and USD 1 million in kind, such as power cables, generators and pump sets).
- India provided **2 million doses of oral polio vaccine** through the **United Nations Children's Fund (UNICEF)** in November 2010.
- In March 2018, India gifted **10 Russian-made ambulances** to various regions of Tajikistan drawing substantial media coverage and appreciation from high offices.

➤ **Indian Diaspora:**

- The **total number of Indians** is estimated at about **1550**, out of which more than 1250 are students.

Participation of Women & Youth in State Assemblies

Why in News

Recent data from the **three new state assemblies**, which are West Bengal, Kerala and Tamil Nadu, show **less numbers of women and youth Member of Legislative Assemblies (MLAs)**.

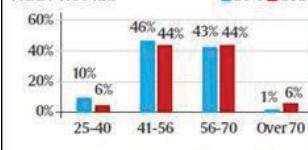
- The **data of the 2019 Lok Sabha elections** also show that the participation of women is low. According to a list compiled by the **Inter-Parliamentary Union** in 2019, India ranks **153 out of 190 nations** in the percentage of women in the lower house of world parliaments.

- India is young. Its leaders are not. The country's median age is 29. The average parliamentarian is 55.

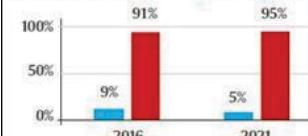
TAMIL NADU

SHARP RISE IN MLAs OVER 70; SHARE OF WOMEN MLAs DOWN BY HALF

AGE PROFILE

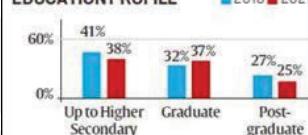


GENDER PROFILE



62% OF THE MLAs HAVE AT LEAST A BACHELOR'S DEGREE, UP FROM 59%

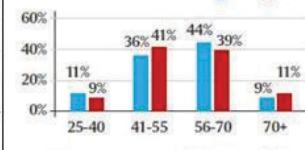
EDUCATION PROFILE



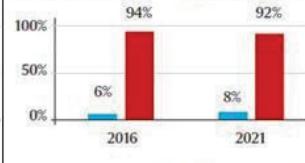
KERALA

FEWER YOUNG MLAs; SLIGHT RISE IN WOMEN REPRESENTATION

AGE PROFILE

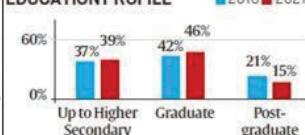


GENDER PROFILE



61% HAVE AT LEAST A BACHELOR'S DEGREE, DOWN FROM 63%

EDUCATION PROFILE



Key Points

➤ **Reasons for Less Number of Women MLAs:**

- Illiteracy** - It is one of the main hurdles in making women politically empowered.
- Work and Family** - Uneven distribution of household work between men and women is also one of the important factors in this regard.
- Lack of Political Networks** - The lack of openness in political decision-making and undemocratic internal processes pose a challenge for all newcomers, but particularly for women as they tend to lack insider knowledge or political networks.
- Lack of Resources** - Because of their low proportion in the inner political party structure of India, women fail to gather resources and support for nurturing their political constituencies.
- Lack of Financial Support** - Women do not get adequate financial support from the political parties to contest the elections.
- Societal and Cultural Norms** - These norms imposed on women bar them from entering politics.
- Unfriendly Environment** - Overall political parties' environment too is not women-friendly, they have to struggle hard and face multi-dimensional issues to create space for them in the party.

Note:

➤ **Reasons for Less Number of Youth MLAs:**

- **False Believe** - Political parties believe that the youth, having not seen enough of life, are unprepared for the demands of top-flight politics.
- **Youth will not be taken seriously** - Political parties fear that Indian electors who respect older politicians will not take young candidates seriously.
- **Veterans not leaving** - Key party decision makers, typically veterans, do not want to yield space.
- **Muscle power politics** - Politicians use muscle and money power to prevent entry of good people to enter politics.
- **Less chance of success** - The chances of failure are high and very few people become successful.
- **Good people avoid politics** - General perception of a common man about a politician is someone who is deceptive and corrupt. So people from well to do fields tend to avoid themselves being listed in categories of politicians.
- **Unethical practices** - Many fail to enter due to dirty politics and due to fear of harm to good image. Unethical practices have become the norm in politics.
- **Nepotism** - It plays a major role and many youth who become successful politicians belong to influential political families.
- **Other reasons** - Rising campaign spending and rotational reservation in municipal, panchayat and mayoral elections have created barriers to upward movement for aspiring young politicians.

➤ **Related Initiatives:**

- **The Women's Reservation Bill 2008:**
 - It proposes to amend the Constitution of India to reserve 1/3rd of all seats in the Lower house of Parliament of India, the Lok Sabha, and in all state legislative assemblies for women.
- **Reservation for Women in Panchayati Raj Institutions:**
 - Clause (3) of Article 243D of the Constitution ensures participation of women in Panchayati Raj Institutions by mandating not less than one-third reservation for women out of total number of seats to be filled by direct election and number of offices of chairpersons of Panchayats.
- **National Youth Parliament Festival:**
 - It is organised by National Service Scheme (NSS) and Nehru Yuva Kendra Sangathan (NYKS)

under the aegis of Ministry of Youth Affairs and Sports to:

- **Hear the voice of youth in this age bracket of 18-25** who are allowed to vote but cannot contest in elections.
- **Encourage the youth to engage with public issues**, understand the common man's point of view, form their opinion and express these in an articulate manner.

○ **National Youth Parliament Scheme:**

- The **Ministry of Parliamentary Affairs** has been implementing the Youth Parliament programme since 1966.
- To **strengthen the roots of democracy**, inculcate healthy habits of discipline, tolerance of the view of others and to enable the student community to know about practices and procedures of the Parliament.

India-UK Virtual Summit

Why in News

Recently, the Prime Ministers of **India and the United Kingdom (UK)** held a bilateral virtual summit.

- India thanked the UK for the prompt medical assistance provided by it in the wake of the **severe second wave of Covid-19** in India.

Key Points

➤ Adopted 'Roadmap 2030':



Note:

- It will elevate bilateral ties to a “Comprehensive Strategic Partnership”.
- It will provide a framework for UK-India relations across health, climate, trade, education, science and technology, and defence.
 - This will expand the UK-India health partnership to enhance global health security and pandemic resilience.
 - This includes firming up international supply chains to ensure critical medicines, vaccines and other medical products reach those who need them most.
 - Agreed to expand the existing UK-India vaccines partnership.
- Launched Enhanced Trade Partnership:
 - It envisages facilitating market access in specific sectors. It will see Britain open up its fisheries sector to more Indian players, facilitate more opportunities for nurses, recognise Indian seafarers' certificates and enter into a joint dialogue on a social security agreement.
 - In return, India lifted restrictions to enable British fruit producers to export their produce to the country and improved access for medical devices.
 - They will also work towards reciprocal opening up of legal services.
 - Announced their intent to negotiate a comprehensive Free Trade Agreement (FTA), including consideration of an interim trade agreement to deliver early gains.
 - Set an ambitious target of more than doubling bilateral trade by 2030.
- Announcement of a new India-UK ‘Global Innovation Partnership’:
 - The UK is India's second largest partner in research and innovation collaborations.
 - The new partnership aims to support the transfer of inclusive Indian innovations to select developing countries, starting with Africa.
- Security & Defence:
 - Cooperation on Maritime Domain Awareness:
 - This includes new agreements on maritime information sharing, an invitation to the UK to join India's Information Fusion Centre in Gurgaon and an ambitious exercise programme which includes joint trilateral exercises.
 - UK's Carrier Strike Group:
 - The UK's Carrier Strike Group will visit India later this year to boost ties with Indian navies and air forces, undertaking joint training exercises to enable future cooperation on operations in the Western Indian Ocean (UK's Indo-Pacific Tilt).
 - Light Combat Aircraft Mark 2:
 - To support India's indigenous development of the Light Combat Aircraft Mark 2.
 - Potential Collaborations:
 - Discussed the potential for further industrial collaboration in areas such as maritime propulsion, space and cyber, marking the start of a promising new era of UK-India research, capability and industrial collaboration on Indian combat air and beyond.
- Migration:
 - Enhance their migration relationship, to make it easier for British and Indian nationals to live and work in each other's countries.
 - Welcomed the signing of the India-UK Migration and Mobility Partnership (MMP) that is aimed at reducing illegal immigration into the UK.
 - The issue of illegal immigration had been a sticking point between both sides for years. However it is understood that MMP will help genuine immigrants and students and will reduce immigration-related crimes.
- Climate Change:
 - Agreed to work together to ensure an ambitious outcome at Conference of the Parties (COP) 26 and expand the UK-India partnership on tackling climate change, including by accelerating the development of clean energy and transport and new technology, protecting nature and biodiversity and helping developing countries adapt to the impact of climate change.

Bilateral Military Exercises

- Air Force Exercise ‘Indradhanush’.
- Navy Exercise Konkan.
- Army Exercise ‘Ajeya Warrior’.

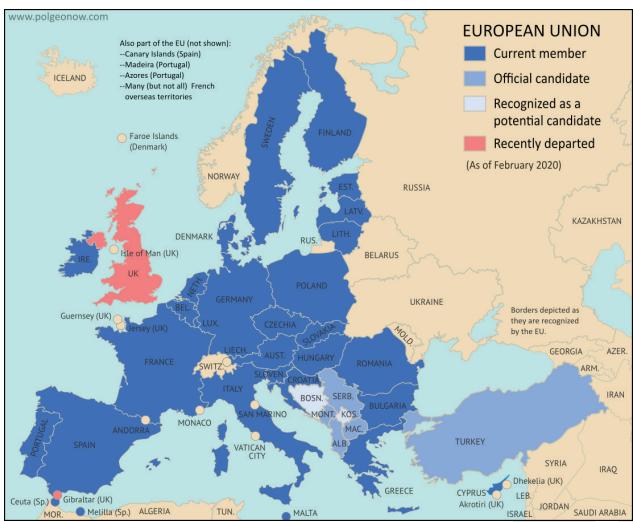
India-EU Leaders' Meeting

Why in News

Recently, Indian Prime Minister participated in the India-European Union (EU) Leaders' Meeting.

Note:

- The meeting was held in a **hybrid format** with the participation of leaders of all the **27 EU Member States** as well as the **President of the European Council and the European Commission**.
- This is the **first time** that the EU hosted a meeting with India in the **EU+27 format**.
 - The meeting was the **initiative of the Portuguese Presidency of the Council of the EU**.



Key Points

- **Free Trade Negotiations:**
 - Agreed to **relaunch free trade negotiations** by resuming talks that were suspended for the **Bilateral Trade and Investment Agreement (BTIA)**.
 - India and EU had launched talks for having a wide-ranging **Free Trade Agreement (FTA)**, officially called broad-based BTIA, long ago in 2007.
 - The BTIA was proposed to **encompass trade in goods, services and investments**.
 - However, the talks **stalled in 2013** over **differences on market access and movement of professionals**.
 - The **EU was India's largest trading partner in goods 2019-20**, ahead of China and the US, with total trade close to USD 90 billion.
- **Connectivity Partnership:**
 - Launched an ambitious and comprehensive '**Connectivity Partnership**' which is **focused on enhancing digital, energy, transport and people-to-people connectivity**.

- It is **based on the shared principles** of social, economic, fiscal, climate and environmental sustainability, and respect for international law and commitments.
- It will **catalyse private and public financing for connectivity projects**. It will also **foster new synergies for supporting connectivity initiatives** in third countries, including in the **Indo-Pacific**.

- Also signed the contract for the second tranche of **USD 150 million from the EU for the Pune Metro rail project**.

➤ Climate Change:

- Reiterated their commitment to achieving the goals of the **Paris Agreement** and agreed to **strengthen joint efforts for mitigation, adaptation and resilience to the impacts of climate change**, as well as providing means of implementation including finance in the context of **Conference of the Parties (COP 26)**.
- India welcomed the EU's decision to join the **Coalition for Disaster Resilient Infrastructure (CDRI)**.

➤ Technology:

- Agreed to enhance bilateral cooperation on digital and emerging technologies such as **5G, Artificial Intelligence (AI), Quantum and High-Performance Computing** including through the **early operationalization of the Joint Task Force on AI and the Digital Investment Forum**.

➤ Strengthening Partnership:

- Desired to **further strengthen the India-EU Strategic Partnership** based on a shared commitment to democracy, fundamental freedoms, rule of law and multilateralism.
- India appreciated the prompt assistance provided by the EU and its member states to combat its **second Covid wave**.
- India also **requested the EU's support** for its joint proposal with South Africa for a **Trade Related Aspects of Intellectual Property (TRIPS) waiver** on vaccine production-related patents in the **World Trade Organisation (WTO)**.
 - Recently, the **US has supported the proposal**. However, India failed to secure the support of the European leaders.

Note:

4th India-Swiss Financial Dialogue

Why in News

The 4th **India-Swiss Financial Dialogue** was held virtually through video conferencing.



Key Points

- **Highlights from the Dialogue:**
 - Talks for collaboration on various aspects including **investments, International Financial Services Centre Authority (IFSCA), National Investment and Infrastructure Fund (NIIF), FinTech, sustainable finance and cross border financial services.**
 - The matters relating to **G20, International Monetary Fund (IMF) and tax challenges arising from the digitalisation of the economy** were discussed along with **infrastructure financing.**
 - Emphasised the importance of **coordinated bilateral action on a clean and resilient post-Covid world.**
- **India-Switzerland Relations:**
 - **Political Relations:**
 - A **Treaty of Friendship** between India and Switzerland was signed at New Delhi in 1948.
 - India's **policy of non-alignment** and Switzerland's traditional **policy of neutrality** has led to a close understanding between the two countries.

Note:

○ Economic Relations:

- India-Switzerland **Bilateral Investment Treaty (BIT)** is under negotiation.
- Negotiations are also taking place on **India-EFTA Trade & Economic Partnership Agreement (TEPA).**
 - The **European Free Trade Association (EFTA)** is the intergovernmental organisation of Iceland, Liechtenstein, Norway and Switzerland.
 - These countries are not part of the European Union (EU) with which India is negotiating a separate trade agreement called the India-EU Broad-based Trade and Investment Agreement.

○ Cooperation in Other Areas:

- An **Indo-Swiss Joint Research Programme (ISJRP)** was launched in 2005.
- **Skill Training:** Several Institutes from both the countries have collaborated to impart the highest standards of skill training in India. E.g.:
 - Bharatiya Skill Development Campus and University, Jaipur.
 - Indo-Swiss Centre of Excellence, Pune.
 - Vocational Training Center, Andhra Pradesh.
- **Capacity Building for Low Carbon and Climate Resilient City Development (CapaCITIES):**
 - The **Swiss Agency for Development and Cooperation (SDC)** is supporting the implementation of the CapaCITIES project in Indian cities.
 - The CapaCITIES project aims to strengthen the capacities of Indian cities, to identify, plan and implement measures for reducing greenhouse gas emissions and for enhancing resilience to climate change in an integrated manner.

Al-Aqsa Mosque & Sheikh Jarrah: Israel-Palestine

Why in News

Recently, Israeli armed forces attacked **Al-Aqsa Mosque in the Haram esh-Sharif in Jerusalem**, ahead of a march by Zionist nationalists commemorating Israel's capture of the eastern half of the city in 1967.

- The threatened eviction of dozens of Palestinian families in the East Jerusalem neighborhood of **Sheikh Jarrah** escalated the crisis further.
- **Zionism** is a worldwide Jewish movement that resulted in the establishment and development of the state of Israel and that now supports the state of Israel as a Jewish homeland.



Key Points

- **Al-Aqsa Mosque:**
 - It is one of the holiest structures in the Islamic faith. It sits inside a 35-acre site known by Muslims as Haram al-Sharif, or the Noble Sanctuary, and by Jews as the Temple Mount.
 - The site is part of the Old City of Jerusalem, **sacred to Christians, Jews and Muslims.**
 - It is believed to have been **completed early in the eighth century** and faces the Dome of the Rock, the golden-domed Islamic shrine that is a widely recognized symbol of Jerusalem.
 - The **United Nations Educational, Scientific and Cultural Organization, UNESCO**, has classified the **Old City of Jerusalem and its walls as a World Heritage Site.**

Note:

➤ Conflict over Jerusalem:

- Jerusalem has been at the centre of the Israeli-Palestinian conflict. According to the original 1947 **United Nations (UN)** partition plan, Jerusalem was proposed to be an international city.
- But in the **first Arab-Israeli war of 1948**, the **Israelis captured the western half of the city**, and **Jordan took the eastern part**, including the Old City that houses Haram al-Sharif.
- Israel captured East Jerusalem from Jordan in the **Six-Day War 1967** and annexed it later.
 - Since its annexation, **Israel has expanded settlements in East Jerusalem.**
- Israel sees the whole city as its “**unified, eternal capital**”, whereas the **Palestinian leadership** across the political spectrum have maintained that they would not accept any compromise formula for the future Palestinian state unless **East Jerusalem is its capital.**

➤ Sheikh Jarrah Issue:

- Hundreds of thousands of Palestinians were forced out of their homes when the State of Israel was created in historical Palestine in 1948.
 - Twenty-eight of those **Palestinian families moved to Sheikh Jarrah in East Jerusalem to settle there.**
- In 1956, when East Jerusalem was ruled by Jordan, the Jordanian Ministry of Construction and Development and the **UN Relief and Works Agency** facilitated the **construction of houses for these families in Sheikh Jarrah**. But Israel would capture East Jerusalem from Jordan in 1967.
 - By the early 1970s, **Jewish agencies started demanding the families leave the land.**
- Earlier this year (2021), the **Central Court in East Jerusalem upheld a decision to evict four Palestinian families** from their homes in Sheikh Jarrah in favor of Jewish settlers.
- The issue remains **unresolved and potentially inflammable.**

➤ India's Stand on Israel-Palestine Issue:

- India **recognised Israel in 1950** but it is also **the first non-Arab country to recognise Palestine Liberation Organisation (PLO)** as the sole representative of the Palestinian.
 - India is also one of the first countries to **recognise the statehood of Palestine in 1988.**

- In 2014, India favored **UNHRC's** resolution to probe Israel's human rights violations in Gaza. Despite supporting the probe, **India abstained from voting against Israel in UNHRC in 2015.**
- As a part of Link West Policy, India has **de-hyphenated its relationship with Israel and Palestine in 2018** to treat both the countries mutually independent and exclusive.
- In June 2019, India **voted in favor of a decision introduced by Israel in the UN Economic and Social Council (ECOSOC)** that objected to granting consultative status to a Palestinian non-governmental organization.

- So far India has tried to maintain the image of its historical moral supporter for Palestinian self-determination, and at the same time to engage in the military, economic, and other strategic relations with Israel.

➤ **Related Developments:**

- In March 2021, **International Criminal Court (ICC)** launched investigations into the war crimes in **Palestinian territories occupied by Israel (West Bank and the Gaza Strip).**
- In April 2021, the **US restored at least USD 235 million in financial assistance to the Palestinians.**

■ ■ ■



Note:

Science and Technology

Highlights

- *Dengue: Prevention And Identification*
- *Mucormycosis*
- *Nomenclature & Classification of Corona Variants*
- *Covid-19 and Neanderthal Genomes*
- *Positron: The Antimatter Counterpart of the Electrons*

- *SUTRA Model*
- *5G Trial*
- *Recent Findings about Venus*
- *NASA's OSIRIS-REx Mission*

Dengue: Prevention And Identification

Why in News

With multiple cities recording a high number of dengue-related cases every year, it is important to know about the disease.

Key Points

- **Dengue:**
 - Dengue is a **mosquito-borne tropical disease** caused by the **dengue virus (Genus Flavivirus)**, transmitted by several species of mosquito within the **genus Aedes**, principally **Aedes aegypti**.
 - This mosquito also transmits **chikungunya**, **yellow fever** and **Zika infection**.
 - There are 4 distinct, but closely related, serotypes (separate groups within a species of microorganisms that all share a similar characteristic) of the virus that cause dengue (**DEN-1, DEN-2, DEN-3 and DEN-4**).
- **Symptoms:**
 - Sudden high fever, severe headaches, pain behind the eyes, severe bone, joint, and muscle pain, etc.
- **Diagnosis and Treatment:**
 - Diagnosis of dengue infection is done with a blood test.
 - There is no specific medicine to treat dengue infection.
- **Status of Dengue:**
 - Incidence of dengue has **grown dramatically around the world** in recent decades, with a vast majority

of cases under-reported, according to the [World Health Organization \(WHO\)](#).

- WHO estimates 39 crore dengue virus infections per year, of which 9.6 crore show symptoms.
- India registered over 1 lakh dengue cases in 2018 and over 1.5 lakh cases in 2019, according to the **National Vector-Borne Disease Control Programme (NVBDCP)**.
- NVBDCP is the central nodal agency for prevention and control of **six vector borne diseases** i.e. Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya in India. It works under the Ministry of Health and Family Welfare.
- **Controlling Dengue Using Bacteria:**
 - Recently researchers from the **World Mosquito Program** have used mosquitoes infected with **Wolbachia bacteria** to **successfully control dengue** in Indonesia.
 - **Method:**
 - The scientists infected some mosquitoes with Wolbachia and then released them in the city where they bred with local mosquitoes, until nearly all mosquitoes in the area were carrying Wolbachia bacteria. This is called the **Population Replacement Strategy**.
 - At the end of 27 months, the researchers found that the incidence of dengue was 77% lower in areas where Wolbachia-infected mosquitoes had been released, as compared to areas without such deployments.
 - **Dengue Vaccine:**
 - The dengue vaccine CYD-TDV or **Dengvaxia** was

Note:

approved by the US Food & Drug Administration in 2019, the **first dengue vaccine** to get the regulatory nod in the US.

- Dengvaxia is basically a **live, attenuated dengue virus** which has to be administered in people of ages 9 to 16 who have laboratory-confirmed previous dengue infection and who live in endemic areas.

Mucormycosis

Why in News

A number of **Covid-19 patients** are developing a serious fungal infection known as **Mucormycosis** also called **black fungus**.

Key Points

- **Mucormycosis:**
 - It is a serious but rare fungal infection **caused by a group of molds called mucormycetes**, which is abundant in the environment.
 - It **mainly affects people** who have **health problems or take medicines** that lower the body's ability to fight germs and sickness.
 - The **types of Mucormycosis** are: Rhinocerebral (Sinus and Brain), Pulmonary (Lung), Gastrointestinal, Cutaneous (Skin), and disseminated Mucormycosis.
- **Transmission:**
 - It **occurs through** inhalation, inoculation, or ingestion of spores from the environment.
 - Mucormycosis **does not spread between people or between people and animals.**
- **Symptoms:**
 - These include pain and redness around eyes and/or nose, fever, headache, coughing, shortness of breath, bloody vomits, and altered mental status.
 - Warning signs can include toothache, loosening of teeth, blurred or double vision with pain.
- **Prevention:**
 - Avoiding areas with a lot of dust like construction or excavation sites, avoiding direct contact with water-damaged buildings and flood water after hurricanes and natural disasters and avoiding activities that involve close contact to soil.
- **Treatment:**
 - Mucormycosis needs to be treated with **prescription antifungal medicine**.
 - In some cases, it can **require surgery**.

- Mucormycosis needs to be treated with **prescription antifungal medicine**.
- In some cases, it can **require surgery**.

Nomenclature & Classification of Corona Variants

Why in News

Recently, India's Health Ministry said that a new **double mutant variant** of the **coronavirus** had been detected in addition to many other strains or **Variants of Concern (VOCs)** found in 18 states in the country.

Key Points

- **Virus Variant:**
 - Variants of a virus have **one or more mutations that differentiate it from the other variants** that are in circulation. While most mutations are deleterious for the virus, **some make it easier for the virus to survive**.
 - The **SARS-CoV-2** (Corona) virus is **evolving fast because of the scale at which it has infected people around the world**. High levels of circulation mean it is easier for the virus to change as it is able to replicate faster.
 - The **original pandemic virus (founder variant)** was **Wu.Hu.1** (Wuhan virus). In a few months, variant **D614G** emerged and became globally dominant.
- **Classification:**
 - The **US Centers for Disease Control and Prevention (CDC)** classifies variants into three categories:
 - **Variant of Interest (VOI):**
 - A variant with specific genetic markers that have been associated with **changes to receptor binding, reduced neutralization by antibodies** generated against previous infection or vaccination, **reduced efficacy of treatments, potential diagnostic impact, or predicted increase in transmissibility or disease severity**.
 - An example of VOI is the **B.1.617 variant** of the virus which has **two mutations**, referred to as **E484Q and L452R**.
 - 1. This variant is classified as a **VOI** by the **World Health Organization (WHO)** as well.

Note:

INVASION of the CoVariants



The mutating coronavirus SARS-CoV-2 has spawned several variants that have scientists worried. Here's a lowdown on those detected in India's exploding second wave



B.1.1.7 UK variant

- Between 40 and 70% more infectious than other variants
- Raises death risk by about 60%
- Vaccines seem to work against it



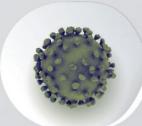
P1 Brazil variant

- More contagious than the initial coronavirus strain, can re-infect
- May be more virulent but further research needed
- E484K, 'escape mutation', helps the virus dodge antibodies



B.1.351 South Africa variant

- Found in at least 20 countries, including the UK
- Mutation called N501 appears to make it more contagious
- Another mutation, called E484K, could help virus dodge a person's immune system and may affect how vaccines work



B.1.617 Double Mutant

- E484Q mutation is similar to another variant, the E484K, found in fast-spreading Brazil and South Africa regions
- Includes L452R mutation, which helps the virus escape our body's natural immune response
- This variant has been detected in at least 10 other countries, including the US, the UK, Australia, and New Zealand

Text by Sneha Mordani



- Both are separately found in many other coronavirus variants, but they have been **reported together for the first time in India.**
- **Variant of Concern (VOC):**
 - A variant for which there is **evidence of an increase in transmissibility, more severe disease** (e.g., increased hospitalizations or deaths), **significant reduction in neutralization by antibodies** generated during previous infection or vaccination, **reduced effectiveness of treatments or vaccines, or diagnostic detection failures.**
 - The **B.1.1.7 (UK variant), B.1.351 (South Africa Variant), P.1 (Brazil Variant), B.1.427, and B.1.429** variants circulating in the US are classified as VOCs.
- **Variant of High Consequence:**
 - A variant of high consequence has **clear evidence that prevention measures or medical countermeasures have significantly reduced effectiveness** relative to previously circulating variants.

- So far, the CDC has **not found variants of high consequence in circulation in the US.**

● Variants Under Investigation (VUI):

- **Public Health England (PHE)** says that if the variants of SARS-CoV-2 are considered to have **epidemiological, immunological or pathogenic properties**, they are raised for formal investigation.
- At this point, the variants emerging from the **B.1.617 lineage** are designated as **VUI.**

➤ Nomenclature:

○ Phylogenetic Assignment of Global Outbreak Lineages (PANGOLIN):

- It was developed to implement the dynamic nomenclature of SARS-CoV-2 lineages, known as the Pango nomenclature.
- **It uses a hierarchical system based on genetic relatedness** – an invaluable tool for genomic surveillance.
- **It uses alphabets (A, B, C, P) and numerals starting with 1.** Variant lineages are at the emerging edge of the pandemic in different geographies. **Lineage B is the most prolific.**

➤ Concerns Related to Different Variants:

○ Increased Transmission:

- In many countries, including India, variants, **by virtue of increased transmissibility**, have kicked off new wave(s) of epidemic transmission.

○ Increased Severity:

- Regarding virulence (propensity to cause severe/life-threatening disease), the **UK variant is worse.** The South Africa and Brazil variants do not seem to have higher virulence.

○ Lowered Immunity:

- The third concern is regarding the immunity cover offered by vaccination using antigens made from **D614G variant** — which applies to most vaccines in current use.
- **Lowered efficacy of vaccines** was found more with the South African and less with the Brazil variant. Hence, reinfection can occur in spite of immunity by earlier **D614G** infection or vaccination.
- Vaccine efficacy may be lower now than what was determined in phase-3 trials as VOC were not then widely prevalent.

Note:

- Fortunately, **mRNA vaccines** have broader immunity for different reasons, and they protect better against these two variants.

➤ **Possible Solution:**

- Karolinska Institute in Sweden has created an antigen using new variant RBD (Receptor Binding Domain) peptide with adjuvant, and inoculated monkeys already primed with an older vaccine.
 - A RBD is a short immunogenic fragment from a virus that binds to a specific endogenous receptor sequence to gain entry into host cells.
 - An adjuvant is a substance that enhances the immune system's response to the presence of an antigen.
- The resultant booster response was not only high but also broad, **covering new variants**. This approach, called '**hetero boosting**' by a different vaccine, **offers a way to manage the 'vaccine-escape' variants until newer vaccines become available.**

Covid-19 and Neanderthal Genomes

Why in News

Evolutionary biologists from different countries have shown that the **regions of host genomes that increase the risk of getting severely ill and protect against the SARS-CoV-2 virus were inherited from Neanderthals**.

- Neanderthals are **an extinct species of hominids** that were the closest relatives to modern human beings.

Key Points

➤ **Findings:**

- A region on **host chromosome 3** acts as a **significant genetic risk factor towards getting seriously ill** and, at the same time, a **group of genes on chromosomes 6,12,19, and 21** protect us against the virus.
- Modern day **humans share a stretch of 50,000 nucleotides** (nucleotides are the basic building blocks of DNA) **in chromosome 3** with Neanderthals.
 - About **50% of South Asians carry the region in chromosome 3 from Neanderthal genomes**, the same region that makes us more prone to getting severely sick with the virus.

- A part of **host chromosome 12**, previously shown to protect against the virus, also was **inherited from Neanderthal genomes**.
 - Nearly **30% of South Asians bear the chromosome 12 region**.

➤ **Importance:**

- Viruses can only survive and multiply in host cells. Therefore, understanding the host genome is **paramount to studying both susceptibility and protection against the virus** in a given population.
- While specific genes from Neanderthals are working against the virus and protecting us from getting a severe disease, others are associated with an increased risk of getting critically ill. This push and pull effect **may be one of the intriguing facts about how the selection of genes happens during evolution**.

Human Evolution

- Human evolution is the evolutionary process that led to the emergence of anatomically modern humans, beginning with the evolutionary history of primates—in particular genus *Homo*—and leading to the emergence of *Homo sapiens* as a distinct species of the hominid family, the great apes.

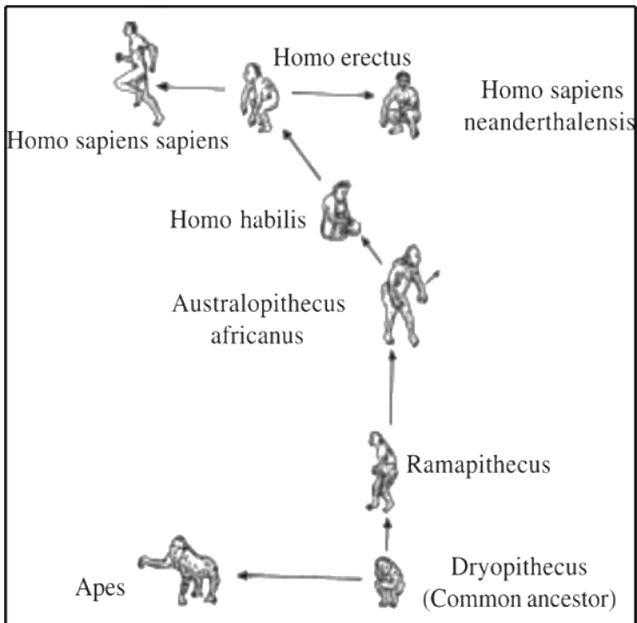
➤ **Stages of Evolution of Human:**

- Dryopithecus
- Ramapithecus
- Australopithecus
- *Homo*
 - *Homo habilis*
 - *Homo erectus*
 - *Homo sapiens*
 - *Homo sapiens neanderthalensis*
 - *Homo sapiens sapiens*

➤ **Neanderthals:**

- Neanderthal (*Homo neanderthalensis*, *Homo sapiens neanderthalensis*) is **member of a group of archaic humans** who **emerged at least 2,00,000 years ago during the Pleistocene Epoch** (about 2.6 million to 11,700 years ago) and were **replaced or assimilated by early modern human populations** (*Homo sapiens*) between 35,000 and perhaps 24,000 years ago.

Note:

**Genome**

- A genome is all the genetic matter in an organism. It is **defined as an organism's complete set of Deoxyribose Nucleic Acid (DNA)**, including all of its genes.
- In **humans**, a copy of the entire genome contains **more than 3 billion DNA base pairs**.

Chromosomes

- In the **nucleus** of each cell, the **DNA molecule** is packaged into **thread-like structures called chromosomes**.
- Each chromosome is made up of DNA tightly coiled many times around proteins called **histones** that support its structure.
- In **humans**, each cell normally contains **23 pairs of chromosomes**, for a total of 46.
- Twenty-two of these pairs, called **autosomes**, look the same in both males and females.
- The **23rd pair**, the sex chromosomes, differ between males and females. Females have two copies of the X chromosome, while males have one X and one Y chromosome.

Positron: The Antimatter Counterpart of the Electrons

Why in News

Researchers from the Raman Research Institute (RRI),

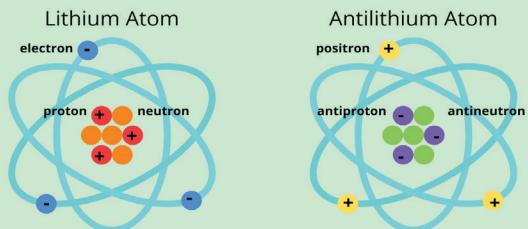
Note:

Bengaluru, have resolved the mystery of the antimatter counterpart of the electrons called **Positron** and **Positron Excess Phenomenon**.

- RRI is an autonomous institution of the **Department of Science and Technology**.

Anti-Matter

- Antimatter is the **opposite of normal matter**. More specifically, the sub-atomic particles of antimatter have properties opposite those of normal matter.
 - **Matter** is made up of atoms, which are the basic units of chemical elements such as hydrogen, helium or oxygen.
 - **Atoms** are the basic units of matter and the defining structure of elements. atoms are made up of three particles:
 - Protons, Neutrons and Electrons.

Matter vs Antimatter

Atoms of matter and antimatter have the same mass, but opposite electrical charge and different quantum numbers.

scienzenotes.org

Positron

- Positron is a **subatomic particle whose mass is the same as that of an electron and numerically equal but positively charged particle**. The positron was discovered in 1932.

Key Points

- **Positron Excess:**
 - The excess number of high energy particles of the antimatter counterpart of the electrons, called **positrons have intrigued scientists for long**.
 - Over the years astronomers have **observed positrons having an energy of more than 10 giga-electron volts, or 10 GeV**.
 - For an estimate, this is the energy of a **positively charged electron accelerated across a 10,000,000,000 volt battery**. Positrons with energy more than 300 GeV, however, are lower in comparison to what astronomers expect.

- This behaviour of positrons between 10 and 300 GeV is what astronomers call the '**positron excess**'.

➤ **RRI's Study:**

- The **Milky Way** consists of **giant clouds of molecular hydrogen**. They are the seats of the formation of **new stars** and can be as massive as **10 million times the Sun's mass**.
 - They can extend up to **600 light-years**.
- Cosmic rays, produced in **supernovae** explosions propagate through these clouds before they reach the Earth. **Cosmic rays interact with molecular hydrogen and can give rise to other cosmic rays**.
- As they propagate through these clouds, they **decay from their original forms and intermix, lose their energy by energising the clouds, and may also get re-energised**.
- RRI studied all these astrophysical processes via a **code it set up on the computer, using a publicly available code**.

➤ **RRI's Code:**

- The code **considers 1638 molecular hydrogen clouds in the Milky Way** that other astronomers have observed across different wavelengths of the electromagnetic spectrum.
- RRI followed a comprehensive catalogue which **consists of ten molecular clouds in the immediate neighbourhood of our Sun**.
- These galactic clouds **provide the astronomers a crucial input** that is the number of giga-electron volt cosmic rays.
 - These help them **determine the excess number of positrons that reach the Earth**.
- The computer code was successfully able to **reproduce the observed number of positrons at giga-electron volt energies**.
- Not only the positron excess, the computer code accurately **reproduces the spectra of protons, antiprotons, boron, carbon, and all other components of cosmic rays**.

➤ **RRI's Proposal:**

- Cosmic rays **while propagating through the Milky Way galaxy interact with matter producing other cosmic rays**, primarily electrons and positrons.
- All mechanisms via which cosmic rays interact with the molecular clouds to show that **nearby molecular clouds can be a viable contributor to the positron excess phenomenon**.

Cosmic Rays

- Cosmic rays are **atom fragments that rain down on the Earth from outside of the solar system**. They blaze at the speed of light and have been blamed for electronics problems in satellites and other machinery. They were Discovered in 1912.

Light-Year

- The light-year is a unit of length used to express astronomical distances and is equivalent to about **9.46 trillion kilometres**.
- As defined by the International Astronomical Union, a light-year is **the distance that light travels in vacuum in one Julian year**.

SUTRA Model

Why in News

Many scientists are blaming the **government-backed model, called SUTRA (Susceptible, Undetected, Tested (positive), and Removed Approach)**, for having a larger role in creating the perception that a **second wave of Covid was unlikely in India**.

- The **second wave of Covid-19 has claimed thousands of lives since April 2021**.

Key Points

- **About:**
 - Scientists from the IITs of Kanpur and Hyderabad have applied the SUTRA Model **to predict the Covid graph in India**.
 - It first came into public attention when one of its expert members announced in October 2020 that India was "**past its peak**".
 - The model **uses three main parameters** to predict the course of the pandemic which are :
 - **Beta**: Also called **contact rate**, which measures **how many people an infected person infects per day**. It is **related to the R₀ value**, which is the number of people an infected person spreads the virus to over the course of their infection.
 - **Reach**: It is a **measure of the exposure level** of the population to the pandemic.
 - **Epsilon**: It is the **ratio of detected and undetected cases**.
- **Problems with SUTRA:**

Note:

- **Variability:**

- There have been many instances of the SUTRA forecasts being far out of bounds of the actual caseload and the **predictions of the SUTRA model are too variable to guide government policy.**

- **Too Many Parameters:**

- The SUTRA model was problematic as it **relied on too many parameters, and recalibrated those parameters whenever its predictions "broke down".**
- The more parameters you have, the more you are in danger of 'overfitting'. You can fit any curve over a short time window with 3 or 4 parameters.

- **Ignores Behaviour of the Virus:**

- The SUTRA model's **omission of the importance of the behaviour of the virus**; the fact that some people were bigger transmitters of the virus than others (say a barber or a receptionist more than someone who worked from home); **a lack of accounting for social or geographic heterogeneity and not stratifying the population by age** as it didn't account for contacts between different age groups also undermined its validity.

- **Ignores the Reason For Change:**

- New **variants** showed up in the SUTRA model as an increase in value of parameters called '**beta**' (that estimated contact rate).
- As far as the model is concerned, it is observing changes in parameter values. **It does not care about what is the reason behind the change.**

5G Trial

Why in News

The Department of Telecommunications (DoT) has given permissions to Telecom Service Providers (TSPs) for conducting trials for use and applications of **5G technology**.

- This formally **leaves out Chinese companies** like Huawei and ZTE from the 5G race in India.

Key Points

- **About the Trials:**

- In the initial phase, these trials will be for **6 months**,

including a 2 month period for procurement and setting up of the equipment.

- TSPs will be required to **test their set up in urban areas, semi-urban areas as well as rural areas.**
- TSPs will be **provided with experimental spectrum** in various bands, such as the mid-band of 3.2 GHz to 3.67 GHz, the millimeter wave band of 24.25 GHz to 28.5 GHz, and others.
- **Applications** such as tele-medicine, tele-education, augmented/virtual reality, drone-based agricultural monitoring, etc. will be tested. The **data generated during the trials will be stored in India.**
- **Use of Indigenous Technology:** The TSPs are encouraged to conduct trials using **5Gi technology** in addition to the already known 5G Technology.
 - The **5Gi technology** was advocated by India and it is approved by **International Telecommunications Union (ITU)** - the United Nations specialized agency for information and communication technologies – ICTs.
 - The **5Gi technology has been developed by** IIT Madras, Centre of Excellence in Wireless Technology (CEWiT) and IIT Hyderabad.
 - It **facilitates much larger reach of the 5G towers and Radio networks.**

- **Need for 5G Trial:**

- The **telecom market in India is left with only three private telcos**, with the rest having surrendered to the **low returns on investments** over the years. The two state-run companies, **MTNL and Bharat Sanchar Nigam Limited (BSNL)** have survived but are making losses.
- In order to **increase their average revenue per user**, it is pertinent for telcos to start offering the new 5G technology as soon as possible.

- **Chinese Telecom Companies in India:**

- India's telecom ministry has **left out Chinese equipment makers Huawei and ZTE** from its **5G trials**, becoming the latest country to lock the firms out.
 - The US says **Huawei could be used by China for spying**, via its 5G equipment and its Federal Communications Commission (FCC) has even ordered certain US telecommunications companies to remove Huawei equipment from their network.

Note:

- **India is yet to implement any type of official ban on the Chinese companies**, which currently supply a significant amount of equipment to India's mobile providers.
- However, the government has signalled a tighter, **more security-oriented approach to the country's networks**, which is widely **expected to work against the Chinese companies**.
 - In December 2020, the government said it would identify "trusted" sources of telecoms gear its carriers can use in their networks as part of the **new security directive** for the sector.
 - Those new procurement rules are expected to come into effect in June 2021, and will restrict Indian network providers to buying certain types of equipment from "trusted sources". It might also include a list of banned suppliers.

5G Technology

➤ Features of 5G Technology:

- **Bands in 5G**: 5G mainly work in 3 bands, namely low, mid and high frequency spectrum — all of which have their own uses as well as limitations.
 - **Low band spectrum**: It has shown great promise in terms of coverage and speed of internet and data exchange however the maximum speed is limited to 100 Mbps (Megabits per second).
 - **Mid-band spectrum**: It offers higher speeds compared to the low band, but has limitations in terms of coverage area and penetration of signals.
 - **High-band spectrum**: It has the highest speed of all the three bands, but has extremely limited coverage and signal penetration strength.
- **Upgraded LTE**: 5G is the latest upgrade in the **long-term evolution (LTE)** mobile broadband networks.
- **Internet Speed and Efficiency**: In the high-band spectrum of 5G, internet speeds have been tested to be as high as 20 Gbps (gigabits per second) as compared to the maximum internet data speed in 4G recorded at 1 Gbps.
 - 5G will provide up to three times greater spectrum efficiency and ultra low latency.
 - Latency is the amount of time data takes to travel between its source and destination.

➤ Utility of 5G Applications:

- **Trigger Fourth Industrial Revolution**: Combined with **IoT**, cloud, **big data**, **AI**, and **edge computing**, 5G could be a critical enabler of the **fourth industrial revolution**.
- **Real Time Relay of Information**: One of the primary applications of 5G will be implementation of sensor-embedded networks that will allow real time relay of information across fields such as manufacturing, consumer durables and agriculture.
- **Efficient Transport Infrastructure**: 5G can also help make transport infrastructure more efficient by making it smart. 5G will enable vehicle-to-vehicle and vehicle-to-infrastructure communication, making driverless cars, among other things, a reality.
- **Improve the Accessibility of Services**: 5G networks could improve the accessibility of services such as **mobile banking** and **healthcare**.
- **Local Research**: It will stimulate the local Research and Development (R&D) ecosystem to develop innovative applications tailored to commercial needs.
- **Economic Impact**: 5G is expected to create a cumulative economic impact of USD1 trillion in India by 2035, according to a report by a government-appointed panel (2018).

Evolution from First Generation to Fifth Generation

- 1G was launched in the **1980s** and worked on **analog radio signals** and supported **only voice calls**.
- 2G was launched in the **1990s** which uses **digital radio signals** and supported **both voice and data transmission** with a bandwidth of 64 Kbps.
- 3G was launched in the **2000s** with a speed of **1 Mbps to 2 Mbps** and it has the ability to transmit telephone signals including **digitised voice, video calls and conferencing**.
- 4G was launched in **2009** with a peak **speed of 100 Mbps to 1 Gbps** and it also enables **3D virtual reality**.

Recent Findings about Venus

Why in News

Recently, scientists have obtained **new data about Venus** by **bouncing radio waves** off the planet.

Note:

- The scientists transmitted radio waves toward Venus 21 times from 2006 to 2020 from NASA's Goldstone Antenna in the Mojave Desert of California and studied the radio echo, which provided information on certain planetary traits.

Key Points

- Latest Findings:
 - A single Venusian rotation takes 243.0226 Earth days. This means a day lasts longer than a year on Venus, which makes a complete orbit around the sun in 225 Earth days.
 - The Venusian planetary core has a diameter of about 7,000 km, comparable to Earth's core which is 6,970 km.
 - The Venusian tilt is at about 2.64 degrees. Earth's is about 23.5 degrees.
- Previous Findings:
 - Presence of phosphine was detected in the atmosphere of Venus. This indicates the possibility of the presence of lifeforms on Venus.
 - According to a study published in Nature Geoscience, Venus is still geologically active.
 - The study identified 37 active volcanoes, in the form of ring-like structures known as coronae, on the surface of Venus.
- About Venus:
 - Venus, the second planet from the sun, is similar in structure but slightly smaller than Earth (Earth's Twin).
 - It has a thick and toxic atmosphere that consists primarily of carbon dioxide, with clouds of sulfuric acid droplets.
 - With a runaway greenhouse effect, its surface temperatures reach 471 degrees Celsius, hot enough to melt lead.
 - The phenomenon, called the 'runaway greenhouse' effect, occurs when a planet absorbs more energy from the sun than it can radiate back to space. Under these circumstances, the hotter the surface temperature gets, the faster it warms up.
 - Venus is one of just two planets that rotate from east to west. Only Venus and Uranus have this "backwards" rotation.
 - Venus has no moons and no rings.

- On Venus, one day-night cycle takes 117 Earth days because Venus rotates in the direction opposite of its orbital revolution around the Sun.

➤ Missions Related to Venus:

- ISRO Shukrayaan: The Indian Space Research Organisation (ISRO) is also planning a mission to Venus, tentatively called Shukrayaan
- Akatsuki (Japanese 2015)
- Venus Express (European Space Agency 2005)
- NASA's Magellan (1989)

NASA's OSIRIS-REx Mission

Why in News

Recently, NASA's OSIRIS-REx spacecraft departed from asteroid Bennu, and started its two-year long journey back to Earth.

- OSIRIS-REx is NASA's first mission to visit a near-Earth asteroid, survey its surface and collect a sample from it.

Key Points

- About OSIRIS-REx Mission:
 - It is the United States' first asteroid sample return mission, aiming to collect and carry a pristine, unaltered sample from an asteroid back to earth for scientific study.
 - The OSIRIS-REx (Origins, Spectral Interpretation, Resource Identification, Security, Regolith Explorer) spacecraft was launched in 2016 for the journey to Bennu.
 - The mission is essentially a seven-year-long voyage and will conclude when at least 60 grams of samples are delivered back to the Earth (in 2023).
 - As per the National Aeronautics and Space Administration (NASA), the mission promises to bring the largest amount of extraterrestrial material back to the Earth since the Apollo era.
 - Apollo was the NASA program that resulted in American astronauts' making a total of 11 space flights and walking on the moon (1968-72).
 - The spacecraft contains five instruments meant to explore Bennu including cameras, a spectrometer and a laser altimeter.
 - Recently, the spacecraft's robotic arm called the Touch-And-Go Sample Acquisition Mechanism

Note:

(TAGSAM), made an attempt to “TAG” the asteroid at a sample site and **collected a sample**.

➤ **Significance:**

- Scientists will use the asteroid samples to study the formation of the solar system and of habitable planets such as Earth.
- NASA will also distribute a part of the samples to laboratories worldwide and will reserve about 75% of the samples for future generations who can study it with technologies not yet created.

➤ **Asteroid Bennu:**

- Bennu is an ancient asteroid, currently more than 200 million miles from Earth.
- It is about as tall as the Empire State Building (US) and is named after an Egyptian deity.
- The asteroid was discovered by a team from the NASA-funded Lincoln Near-Earth Asteroid Research team in 1999.
- It is known that this asteroid is a **B-type asteroid**, implying that it contains significant amounts of carbon and various other minerals.
 - Because of its high carbon content, it reflects about 4% of the light that hits it, which is very low when compared with a planet like Venus, which reflects about 65% of the light that hits it. Earth reflects about 30%.
- Around 20-40% of Bennu’s interior is empty space and scientists believe that it was formed in the first 10 million years of the solar system’s formation, implying that it is roughly 4.5 billion years old.
- There is a slight possibility that Bennu, which is classified as a **Near Earth Object (NEO)**, might strike the Earth in the next century, between the years 2175 and 2199.
 - **NEOs** are comets and asteroids nudged by the gravitational attraction of nearby planets into orbits which allows them to enter the Earth’s neighbourhood.
- Bennu is believed to have been born in the Main Asteroid belt between Mars and Jupiter and because of gravitational tugs from other celestial

objects and the slight push asteroids get when they release absorbed sunlight, the asteroid is coming closer to Earth.

- Bennu offers scientists a window into the early solar system as it was first taking shape billions of years ago and tossing ingredients that could have helped seed life on Earth.
 - Significantly, Bennu hasn’t undergone drastic changes since its formation over billions of years ago and therefore it contains chemicals and rocks dating back to the birth of the solar system. It is also relatively close to the Earth.

Asteroids

- These are **rocky objects that orbit the Sun**, much smaller than planets. They are also called **minor planets**.
- According to NASA, **9,94,383 is the count of known asteroids**, the remnants from the formation of the solar system over 4.6 billion years ago.
- Asteroids are divided into three classes:
 - **First**, those found in the **main asteroid belt between Mars and Jupiter**, which is estimated to contain somewhere between **1.1-1.9 million asteroids**.
 - The **second group** is that of **trojans**, which are **asteroids that share an orbit with a larger planet**.
 - The **third classification** is **Near-Earth Asteroids (NEA)**, which have orbits that pass close by the Earth. Those that cross the Earth’s orbit are called **Earth-crossers**.
 - More than 10,000 such asteroids are known, out of which over 1,400 are classified as **Potentially Hazardous Asteroids (PHAs)**.
 - **PHAs** are currently defined based on parameters that measure the asteroid’s potential to make threatening close approaches to the Earth.
 - Specifically, all asteroids with an Earth Minimum Orbit Intersection Distance (**MOID**) of 0.05 au or less and an absolute magnitude (**H**) of 22.0 or less are considered PHAs.



Note:

Environment and Ecology

Highlights

- Beema Bamboo
- NITI Aayog's Project for Great Nicobar Island
- Eco Sensitive Zone Around Thane Creek Flamingo Sanctuary
- Delhi Air Pollution
- Financial Sector & Climate Change
- Xylophis deepaki
- Asiatic Lions

- Pulayar Community and Anamalai Tiger Reserve
- Kaziranga Animal Corridor
- Third Arctic Science Ministerial
- Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions
- Biodegradable Yoga Mat
- Red-Eared Slider Turtle

Beema Bamboo

Why in News

The Tamil Nadu Agricultural University (TNAU) has designed an 'oxygen park' within its premises at Coimbatore with Beema Bamboo.

Key Points

➤ About Beema Bamboo:

- Beema or Bheema Bamboo is a superior clone, selected from **Bambusa balcooa**, a higher biomass yielding bamboo species. This bamboo clone has been developed by the conventional breeding method.
- This species is **considered to be one of the fastest-growing plants. It grows one-and-a-half feet per day** under tropical conditions.
- It is said to be the **best 'carbon sink'** to mitigate carbon dioxide emissions.

Bambusa balcooa

- Bambusa balcooa is a very large, thick-walled, clumping bamboo, growing up to a height of 25 metres, and a thickness of 150 millimetres.
- The **length and strength** of Bambusa balcooa make it a useful material for the construction industry.
- It is a **drought-resistant species** with low rainfall requirements and can reach yields upwards of 100 metric tons per hectare.

➤ Importance:

○ Permanent Green Cover:

- As it is **sterile**, this bamboo does not produce any seed and does not die also for several hundred years and keeps growing without death. As a result, this particular bamboo species is **able to establish permanent green cover**.

○ Does Not Require Replanting for Decades:

- Since the plants are produced **through tissue culture**, the **culms grow almost solid and adapt** to different soil and climatic conditions. After every harvest cycle, it re-grows and does not require replanting for decades.
 - A culm is the hollow stem of a grass or cereal plant, especially that bearing the flower.

○ Can Mitigate Global Warming and Climate Change:

- As its rhizome and root formation provide a strong foundation, the plant becomes robust against natural forces and plays a major role in mitigating global warming and climate change.

○ Diverse Uses:

- The **bamboo's calorific value is equal to that of coal**. Cement industries are buying this bamboo species for their boilers. Bamboo fibre is used by the textile industry for making fabric and garments.
- Experts from the Visvesvaraya National Institute of Technology (VNIT), Nagpur, are working on the **design of crash barriers** made of beema bamboo and coir.

Note:

Government Initiatives Related to Bamboo

➤ Bamboo Clusters:

- Recently, the Union Minister for Agriculture and Farmers' Welfare has virtually inaugurated **22 bamboo clusters in 9 states** viz. Gujarat, Madhya Pradesh, Maharashtra, Odisha, Assam, Nagaland, Tripura, Uttarakhand and Karnataka.

➤ National Bamboo Mission (NBM):

- The restructured NBM was launched in 2018-19 for the holistic development of the **complete value chain of the bamboo sector** and is being implemented in a **hub (industry) and spoke model**.
- It aims at **connecting farmers** to markets so as to enable farmer producers to get a ready market for the bamboo grown and to increase the **supply of appropriate raw material** to the domestic industry.

➤ Removal of Bamboo from 'Tree' Category:

- The **Indian Forest Act 1927** was **amended in 2017** to remove bamboo for the category of trees.
- As a result, anyone can undertake cultivation and business in bamboo and its products without the need of a felling and transit permission.

➤ Issues with Project:

- Lack of details on **seismic and tsunami hazards, freshwater requirement** details, and details of the **impact on the Giant Leatherback turtle**.
- **No details of the trees to be felled** — a number that could run into millions since 130 sq. km. of the project area has some of the finest tropical forests in India.
- A number of additional issues include about **Galathea Bay**, the site of the port and the centrepiece of the NITI Aayog proposal.
 - **Galathea Bay** is an iconic nesting site in India of the enigmatic **Giant Leatherback, the world's largest marine turtle** — borne out by surveys done over three decades.
 - Ecological surveys in the last few years have reported **a number of new species**, many restricted to just the Galathea region.
 - **These include** the critically endangered Nicobar shrew, the Great Nicobar crake, the Nicobar frog, the Nicobar cat snake, a new skink (*Lipinia sp.*), a new lizard (*Dibamus sp.*) and a snake of the *Lycodon sp* that is yet to be described.
- The site selection for the port had been done **mainly on technical and financial criteria**, ignoring the environmental aspects.

➤ Action Points listed out by the Committee:

- There is a need for an **independent assessment of terrestrial and marine biodiversity**, a study on the impact of dredging, reclamation and port operations, including oil spills.
- The **need for studies of alternative sites for the port** with a focus on environmental and ecological impact, especially on turtles, analysis of risk-handling capabilities.
- A **seismic and tsunami hazard map, a disaster management plan, details of labour**, labour

NITI Aayog's Project for Great Nicobar Island

Why in News

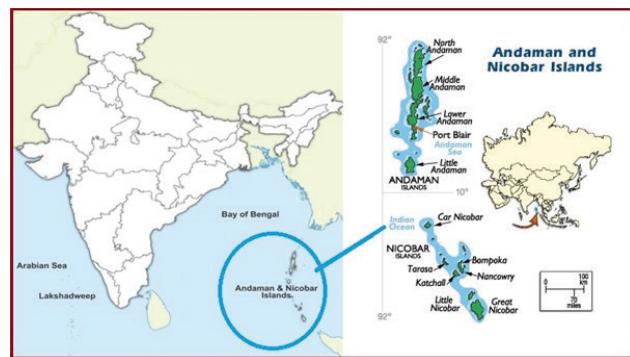
Recently, the Environment Appraisal Committee which flagged concerns over the project has now 'recommended' it '**for grant of terms of reference**' for **Environmental Impact Assessment (EIA)** studies.

- In August, 2020 the Prime Minister had declared that the Andaman and Nicobar islands will be developed as a "**maritime and startup hub**".

Key Points

➤ About the Project:

- The proposal includes an **international container trans-shipment terminal**, a greenfield international airport, a power plant and a township complex spread over 166 sq. km. (mainly pristine coastal systems and tropical forests).
- It is estimated to cost Rs. 75,000 crore.



Note:

camps and their requirements, an assessment of the cumulative impact, and a **hydro-geological study** to assess impact on ground and surface water regimes.

Great Nicobar

- **About:**
- Great Nicobar is the **southernmost island** of the Nicobar Islands Archipelago.
- It **covers 1,03,870 hectares** of unique and threatened tropical evergreen forest ecosystems.
- It is home to a very rich ecosystem, including 650 species of angiosperms, ferns, gymnosperms, bryophytes, among others.
- In terms of fauna, there are over 1800 species, some of which are endemic to this area.

Ecological Characteristics:

- The **Great Nicobar Biosphere Reserve** harbours a wide spectrum of ecosystems comprising **tropical wet evergreen forests**, mountain ranges reaching a height of 642 m (**Mt. Thullier**) above sea level, and coastal plains.

Tribe:

- The **Mongoloid Shompen Tribe**, about 200 in number, live in the forests of the biosphere reserve particularly along the rivers and streams.
- They are hunters and food gatherers, dependent on forest and marine resources for sustenance.
- Another Mongoloid Tribe, **Nicobarese**, about 300 in number, used to live in settlements along the west coast.
- After the tsunami in 2004, which devastated their settlement on the western coast, they were **relocated to Afra Bay in the North Coast** and Campbell Bay.

Eco Sensitive Zone Around Thane Creek Flamingo Sanctuary

Why in News

Recently, the **Ministry of Environment, Forest and Climate Change (MoEFCC)** has notified an **Eco Sensitive Zone (ESZ)** around the **Thane Creek Flamingo Sanctuary (TCFS, Maharashtra)**.

- The **ESZ** is meant to act as a **buffer for protected areas** and **reduces developmental pressures** around a **wildlife sanctuary or national park**.

Key Points

- **About Thane Creek Flamingo Sanctuary:**
- It is the second marine **sanctuary** of Maharashtra after **Malvan sanctuary**, and lies **along the western bank of the Thane Creek**.
- It is recognized as an "**Important Bird Area**" by the **Bombay Natural History Society**.
- TCFS is home to 39 categories of **mangrove** species, 167 species of birds like **flamingos**, 45 fish species, 59 species of butterflies, 67 insect species and mammals like jackals among others.

Thane Creek

- It is an **inlet in the shoreline of the Arabian Sea** that isolates the city of Mumbai from the Indian mainland.
- The creek is **divided into two parts**: the Ghodbunder-Thane stretch and the Thane-Trombay (Uran) stretch.
- The creek has been **formed due to seismic faults** lying below it which runs from Uran to Thane.



Other Protected Areas of Maharashtra

- Sanjay Gandhi National Park
- **Tadoba Andhari Tiger Reserve**
- Koyna Wildlife Sanctuary
- Bor Wildlife Sanctuary
- **Umed Paoni Kardhandla WS**
- Sahyadri Tiger Reserve
- **Melghat Tiger Reserve**
- Navegaon National Park

- **Eco Sensitive Zone:**

- **About:**

Note:

- **Eco-Sensitive Zones (ESZs)** or **Ecologically Fragile Areas** are areas within 10 kms around Protected Areas, National Parks and Wildlife Sanctuaries.
 - In case of places with sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkage, **even areas beyond 10 km width can be included** in the eco-sensitive zone.
- **Associated Ministry:**
 - ESZs are notified by the **Ministry of Environment, Forest and Climate Change (MoEFCC)**, under **Environment Protection Act, 1986**.
- **Aim:**
 - To **regulate certain activities** around National Parks and Wildlife Sanctuaries so as to **minimise** the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.
- **Regulation of Activities in ESZs:**
 - **Prohibited Activities:** Commercial mining, saw mills, industries causing pollution (air, water, soil, noise etc), establishment of major hydroelectric projects (HEP), commercial use of wood, Tourism activities like hot-air balloons over the National Park, discharge of effluents or any solid waste or production of hazardous substances.
 - **Regulated Activities:** Felling of trees, establishment of hotels and resorts, commercial use of natural water, erection of electrical cables, drastic change of agriculture system, e.g. adoption of heavy technology, pesticides etc, widening of roads.
 - **Permitted Activities:** Ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, use of renewable energy sources, adoption of green technology for all activities.
- **Significance:**
 - To minimise the impact of urbanisation and other developmental activities, areas adjacent to protected areas have been declared as Eco-Sensitive Zones as it **acts as a shock absorber**.
 - They also **act as a transition zone** from areas of high protection to areas involving lesser protection.

- ESZs help in **in-situ conservation**, which deals with conservation of an endangered species in its natural habitat, for example the conservation of the **One-horned Rhino** of Kaziranga National Park, Assam.
- ESZs minimise **forest depletion and man-animal conflict**.
- **Challenges:**
 - **Climate Change:** The rise in global temperature has generated land, water and ecological stress on the ESZs.
 - **Local Communities:** Slash and burn techniques used in agriculture, pressure of increasing population and the rising demand for firewood and forest produce, etc. exerts pressure on the protected areas.

Delhi Air Pollution

Why in News

Recently, according to the **SAFAR (System of Air Quality and Weather Forecasting and Research)** system, Delhi's air quality deteriorated from 'moderate' to 'poor' and 'very poor'.

Key Points

- **Causes of Deteriorating Air Quality:**
 - Delhi's air **typically worsens in October-November** and improves by March-April. Current weather conditions are not unfavourable, unlike in winter.
 - During winter, cool and calm weather traps and spikes daily pollution, particularly in north Indian cities located in the **Indo Gangetic Plain**.
 - Hence, apart from **local emissions**, the deterioration in air quality is **being attributed to an increase in fire counts, mostly due to burning of wheat crop stubble in northern India**.
 - The **most crucial reasons** for the alarming levels of air pollution in Delhi include:
 - City's landlocked geographical location.
 - Crop burning in neighbouring states (Punjab, Haryana and Rajasthan).
 - Vehicular emissions.
 - Industrial pollution.
 - Large-scale construction activities.

Note:

➤ **Concerns:**

- Deteriorating air quality is worrying amid an increasing number of **novel coronavirus disease (Covid-19)** cases and deaths.
- In the **World Air Quality report 2020**, Delhi has been listed as the **10th most polluted city and the top polluted capital city in the world**.
 - However, it **shows a boost in Delhi's air quality by approximately 15%** from 2019 to 2020.
- In July 2020, **Greenpeace (non-governmental organisation)** found out that of the 28 global cities studied, **Delhi bore the highest economic cost of air pollution** with an estimated loss of 24,000 lives in the first half of 2020 despite a strict Covid-19 lockdown.
- Long-term exposure to outdoor and **household (indoor) air pollution** contributed to over 1.67 million annual deaths from stroke, heart attack, **diabetes**, lung cancer, chronic lung diseases, and **neonatal diseases**, in India in 2019 (**State of Global Air 2020**).

➤ **Major Measures Taken:**

- Subsidy to farmers for buying **Turbo Happy Seeder (THS)** which is a machine mounted on a tractor that cuts and uproots the stubble, in order to **reduce stubble burning**.
- The introduction of **BS-VI vehicles**, push for **electric vehicles (EVs)**, **Odd-Even** as an emergency measure and construction of the **Eastern and Western Peripheral Expressways** to reduce vehicular pollution.
- Implementation of the **Graded Response Action Plan (GRAP)**. It is a set of curbs triggered in phases as the air quality deteriorates, which is typical of the October-November period.
- Development of the **National Air Quality Index (AQI)** for public information under the aegis of the **Central Pollution Control Board (CPCB)**.

System of Air Quality and Weather Forecasting And Research

- SAFAR is a national initiative introduced by the Ministry of Earth Sciences (MoES) to measure the air quality of a metropolitan city, by measuring the overall pollution level and the location-specific air quality of the city.

- The system is **indigenously developed by the Indian Institute of Tropical Meteorology (IITM), Pune** and is **operationalized by the India Meteorological Department (IMD)**.
- The ultimate objective of the project is to increase awareness among the general public regarding the air quality in their city so that appropriate mitigation measures and systematic action can be taken up.
- SAFAR is an integral part of India's first **Air Quality Early Warning System** operational in Delhi.
- It monitors all weather parameters like temperature, rainfall, humidity, wind speed, and wind direction, UV radiation, and solar radiation.
- **Pollutants Monitored:** PM2.5, PM10, Ozone, Carbon Monoxide (CO), Nitrogen Oxides (NOx), Sulfur Dioxide (SO₂), Benzene, Toluene, Xylene, and Mercury.

Financial Sector & Climate Change

Why in News

Recently, the **Reserve Bank of India (RBI)** joined the **Network for Greening the Financial System (NGFS)**.

- The RBI expects to benefit from the membership of NGFS by learning from and contributing to global efforts on **climate finance**, which has assumed significance in the context of **climate change**.

The Network for Greening the Financial System

- It is a **global network of central banks and supervisory authorities** advocating a more sustainable financial system.
- It aims to analyse the consequences of climate change for the financial system and to redirect global financial flows in order to enable low-carbon economic growth.
- It was created at the **Paris One Planet Summit in December 2017** and its secretariat is hosted by the Banque de France.

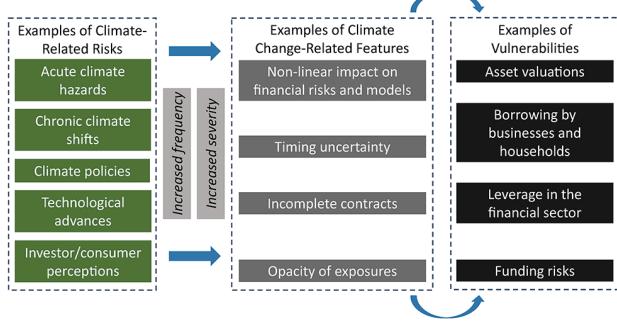
Climate Finance

- **Climate Finance** refers to local, national or transnational financing—drawn from public, private and alternative sources of financing.
- It seeks to support mitigation and adaptation actions that will address climate change.

Note:

Key Points

- Risks to Financial Stability due to Climate Change:
 - Climate change poses risks to financial stability in the form of:
 - **Physical risks:** Caused by **extreme and slow onset weather events.**
 - **Transition risks:** Caused by **changes in policy, legal and regulatory frameworks, consumer preferences and technological development** while transitioning to a low-carbon economy.
 - **Example:**
 - Under many climate projections, **climate change leads to a further rise in sea levels and increase in storm surge.**
 - These effects, in turn, **lead to increased inundation of coastal land parcels**, which could either damage existing structures on those parcels, or **require investment and adaptation for their continued productive use.**
 - As this inundation occurs, **the expected value of coastal real estate may decrease**—which may, in turn, **pose risks to real estate loans, mortgage-backed securities, the profitability of firms using the inundated property, and the finances of state and local governments** facing declining property tax revenues and rising remediation costs.



- The **World Economic Forum's (WEF) Global Risks Report 2021** noted **climate action failure and infectious diseases as the highest risks** (risks with greatest impact and likelihood).
- India's Situation:
 - A World Bank report estimates that **losses to India's Gross Domestic Product by 2050** due to climate change could be **USD 1,178 billion.**

○ The RBI has noted the importance of **climate-related financial disclosures and private green finance** as **necessary to generate the enormous amounts of investments** required to combat climate change and bring about a transformation towards sustainable and low carbon development.

○ A study by non-profit Shakti Foundation found that an assessment of BSE (**Bombay Stock Exchange**) 100 companies showcases that most of the **Indian companies are lagging in the climate change disclosure space** due to lack of relevant expertise; limited access to relevant tools and methodologies; and limited subject knowledge.

➤ Related Initiatives:

- Task Force on Climate-related Financial Disclosures (TFCD):
 - TFCD was **created in 2015** by the **Financial Stability Board (FSB)** to develop consistent climate-related financial risk disclosures for use by companies, banks, and investors in providing information to stakeholders.
 - To make the private sector contribute to climate positive action and become resilient to climate risks are the **recommendations of the TFCD**.
 - Its recommendations are now **widely recognised as the gold standard for global business sustainability reporting frameworks**, providing standardised and comprehensive guidelines for corporate climate disclosures.
 - About **32 Indian organisations have signed up for TFCD**, including the **Mahindra Group, Wipro etc.**
- Recently, **New Zealand became the first country to announce a law** that will require financial firms to disclose climate-related risks and opportunities.

Xylophis deepaki

Why in News

A tiny snake "Xylophis deepaki" has been named in honour of Indian herpetologist Deepak Veerappan for his contribution in erecting a new subfamily **Xylophiinae** to accommodate wood snakes.

- The common name suggested for the species is 'Deepak's wood snake'.

Note:



Key Points

- About **Xylophis deepaki**:
 - It is a tiny snake of just 20 cm length with iridescent scales.
 - It was first found on a coconut plantation in Kanyakumari.
 - It is now reported to be an endemic species of Tamil Nadu and also been sighted in some parts of the southern Western Ghats.
 - It is found in the drier regions and in lower altitudes around Agasthyamalai hills.
- About **Xylophis**:
 - It is a small genus of snakes in the family Pareidae.
 - It has five species, all of which are endemic to the Western Ghats in southern India.
 - **Five Species:** Xylophis Captaini, Xylophis deepaki, Xylophis Mosaicus, Xylophis Perroteti and Xylophis Stenorhynchus.
 - These five species constitute the monotypic subfamily **Xylophiinae**.
 - They are the only pareidae snakes found in India and the only snakes in the family found outside Southeast Asia.
- About **Wood Snakes**:
 - These are harmless (non-venomous), sub-fossorial and often found while digging soil in farms and under the logs in the Western Ghats forests.
 - They feed on earthworms and possibly other invertebrates.
 - Their close relatives are found in Northeast India and Southeast Asia and are known to be arboreal (living in trees).
- Related Information:

- According to the **IUCN Red List of Threatened Species**, 12% of assessed snake species are listed as threatened and their populations are in decline.
- Each year, 2.7 million people around the world suffer a serious snakebite envenomation. The World Health Organization (WHO) classified snakebite as a neglected tropical disease to reduce snakebite in developing countries.
- Save The Snakes is a dedicated initiative exclusively for snake conservation and human-snake conflict mitigation.

Agasthya Hills

- Agasthya hill is a 1,868-metre tall peak within Neyyar Wildlife Sanctuary, in the Western Ghats of Kerala. The peak lies on the border of Kerala and Tamil Nadu. This peak is a part of the Agasthyamala Biosphere Reserve.
- The peak is named after Hindu sage Agastya, who is considered to be one of the seven rishis (Saptarishi) of Hindu Puranas. It is a pilgrimage centre for devotees.
- The Thamirabarani River is a perennial river which originates from the eastern side of the range and flows into the Tirunelveli district of Tamil Nadu.
- Agasthyamala Biosphere Reserve is listed on UNESCO World Network of Biosphere Reserves (2016).

Asiatic Lions

Why in News

Recently, eight Asiatic lions at Hyderabad's Nehru Zoological Park have tested positive for the deadly coronavirus.

- It is the first known case of the human infecting the felines and making them sick in India.
- Earlier in 2020, **Tiger being infected with Covid-19** was reported in New York (Bronx Zoo).

Key Points

- About:
 - The Asiatic Lion (also known as the Persian Lion or Indian Lion) is a member of the **Panthera Leo Leo** subspecies that is restricted to India.
 - Its previous habitats consisted of West Asia and the Middle East before it became extinct in these regions.

Note:

- Asiatic lions are **slightly smaller than African lions**.
 - The most striking morphological character, which is always seen in Asiatic lions, and rarely in African lions, is a **longitudinal fold of skin running along its belly**.
- **Distribution:**
- Asiatic lions were once distributed to the state of **West Bengal** in east and **Rewa** in **Madhya Pradesh**, in central India.
 - At present **Gir National Park and Wildlife Sanctuary** is the only abode of the Asiatic lion.
 - In 2020, the Gujarat Forest Department announced an **increase in the population of Asiatic lions** in the Gir forest region.
- **Threats:**
- Its **vulnerability to unpredictable events** such as a plague or a natural disaster, **poaching** and **locals near the Gir National Park killing the lions** in retaliation for attacks on livestock.
- **Protection Status:**
- **IUCN Red List:** Endangered
 - **CITES:** Appendix I
 - **Wildlife (Protection) Act 1972:** Schedule I
- **Conservation Efforts:**
- The "**Asiatic Lion Conservation Project**" has been launched by the **Union Ministry of Environment, Forests and Climate Change (MoEFCC)**.
 - It has been **approved for three financial years from 2018 to 2021**.
 - It envisages **scientific management with the involvement of communities** in coordination with multi-sectoral agencies for **disease control and veterinary care** for overall conservation of Asiatic lions.

Nehru Zoological Park

- It is **one of the largest zoos of India** and one of the top sightseeing places to visit in Hyderabad, Telangana. **Run by the Forest department, Government of Telangana**, the zoo has been named after Jawaharlal Nehru, the first prime minister of the country.
- It was **opened to the public in the year of 1963**.
- It is situated near the historically important **Mir Alam Tank**, which is **200 year old and is the first multi-arch masonry dam in the world**.

Note:

Pulayar Community and Anamalai Tiger Reserve

Why in News

Two **Tribal settlements (Kattupatti and Kuzhipatti)** of **Pulayar community** within the limits of **Anamalai Tiger Reserve** in **Tamil Nadu** are gearing up for their annual festival of local deity **Vairappattan**.

Key Points

- **About Pulayar Community:**
 - The Pulayar, also Pulaya, or Holeya or Cheramar, are one of the main social groups **found in Kerala, Karnataka and in historical Tamil Nadu or Tamilakam**.
 - They are a **Scheduled Caste** in Kerala and Tamil Nadu.
 - Pulayas are **noted for their music, craftsmanship, and for certain dances** which include,
 - **Kōlam-thullal**, a mask dance which is part of their exorcism rituals, and
 - **Mudi-āttam or hair-dance** which has its origins in a fertility ritual.
 - **Mahatma Ayyankali** was called as **Pulaya King**.
 - **Ayyankali in 1893** rode an ox-cart challenging the 'ban' on untouchables from accessing public roads by caste-Hindus.
 - Ayyankali became a stated protestor for Pulayar rights. Because of the protests led through Ayyankali, in 1907 a decree was issued to confess students from the untouchable network to government schools.
- **Anamalai Tiger Reserve:**
 - **About:**
 - It is **one of the four Tiger Reserves in Tamil Nadu**. It forms part of the Southern Western Ghats.
 - It forms part of the **Anamalai Parambikulam Elephant Reserve** declared in 2003.
 - It is **surrounded by** Parambikulam Tiger Reserve on the East, Chinnar Wildlife Sanctuary and Eravikulam National Park on the South Western side (all belong to Kerala).
 - The reserve is **also surrounded by** Nenmara, Vazhachal, Malayattur and Marayur reserved forests of Kerala.

- The ranges found in this reserve include Amaravathi, Udumalpet, Pollachi, Ulandy, Valparai and Manamboli.
 - **Anthropological Diversity:**
 - The area has significant anthropological diversity with more than 4600 Adivasi people from six tribes of indigenous people living in 34 settlements.
 - The tribes are the **Kadars, Malasars, Malaim-alasar, Pulaiyars, Muduvans and the Eravallan (Eralaval).**
 - **Flora:**
 - It includes wet evergreen forest and semi-evergreen forest, montane shola-grassland, moist deciduous, dry deciduous, thorn forests and marshes.
 - **Fauna:**
 - The important mammals include: Asiatic elephant, Sambar, Spotted deer, Barking deer, Mouse deer, Gaur, Nilgiri tahr, Tiger, etc.
- **Other Protected Areas in Tamil Nadu:**
- **Mudumalai Tiger Reserve**
 - Kalakkad - Mundanthurai TR
 - Sathyamangalam TR
 - **Nilgiri Biosphere Reserve**
 - **Mukurthi National Park**
 - **Gulf of Mannar Marine National Park**
 - Guindy National Park

Kaziranga Animal Corridor

Why in News

There are cases of clearance of forest land, digging and construction activities on at least three animal corridors within the **eco-sensitive zone** of the **Kaziranga National Park and Tiger Reserve**.

- The Supreme Court of India in its 2019 order had said that “No new construction shall be permitted on private lands which form part of the nine identified animal corridors.”

Key Points

- **About the Animal Corridor:**
 - **Wildlife or animal corridors** are meant to ensure safe passage for animals between two isolated habitats.

- In wildlife parlance, corridors are mainly of two types: functional and structural.
 - **Functional corridors** are defined in terms of functionality from the perspective of the animal (basically areas where there have been recorded movement of wildlife).
 - **Structural corridors** are contiguous strips of forested areas and structurally connect the otherwise fragmented blocks of the landscape.
 - When structural corridors are affected by human anthropogenic activities, functional corridors automatically widen because of animal use.
- **Kaziranga Animal Corridor:**
- A special committee formed by the Supreme Court in its report had recommended the **delineation of nine animal corridors** in Kaziranga National Park (KNP). The nine identified animal corridors are:
 - Amguri, Bagori, Chirang, Deosur, Harmati, Hatidandi and Kanchanjuri are in Nagaon district and Haldibari and Panbari corridors are in Golaghat district of Assam.
 - The nine corridors that already exist behave as functional corridors, but according to the new recommendation, the corridors will **act as both structural and functional**, on the basis of need.
 - The report suggested that **structural corridors should be made free of all human induced disturbances** except for the forestry and wildlife management practices.
 - On the other hand, **functional corridors** (which might become important when structural corridors are disturbed), can have **regulated multi-use with restrictions on land use change**.
 - **Significance of Animal Corridors:**
 - These corridors are **crucial for the rhinos, elephants, tigers, deer and other animals that escape a flooded Kaziranga during the monsoon** months for the safety of the hills of Karbi Anglong district beyond the highway skirting the southern boundary of the tiger reserve.
 - Once the rain clear, the animals make their way back to the grasslands.
- **Kaziranga National Park and Tiger Reserve:**
- It is located in the State of **Assam** and covers 42,996 Hectare (ha).
 - It is the single largest undisturbed and representative area in the **Brahmaputra Valley floodplain**.

Note:



- It was declared as a National Park in 1974.
 - It has been declared a **tiger reserve** since 2007.
 - It was declared a **UNESCO World Heritage Site in 1985**.
 - It is recognized as an **Important Bird Area** by BirdLife International.
 - It is the home of the world's most **one-horned rhinos**.
 - Pobitora Wildlife Sanctuary has the highest density of one-horned rhinos in the world and second highest number of Rhinos in Assam after Kaziranga National Park.
 - The **National Highway 37** passes through the park area.
 - The park also has more than 250 seasonal water bodies, besides the **Diphlu River** running through it.
- **Other National Parks in Assam:**
- Dibru-Saikhowa National Park,
 - Manas National Park,
 - Nameri National Park,
 - Rajiv Gandhi Orang National Park.

Third Arctic Science Ministerial

Why in News

Recently, India participated in the **3rd Arctic Science Ministerial(ASM)** and shared plans for research and long-term cooperation in the **Arctic Region**.

- The first two meetings—**ASM1** and **ASM2**—were held in the **USA in 2016** and **Germany in 2018**, respectively.

Note:

Arctic Region

- The Arctic region comprises the **Arctic Ocean** and parts of countries such as **Canada, Denmark (Greenland), Norway, Russia, USA (Alaska), Finland, Sweden and Iceland**.
- These countries together form the **core of the Arctic Council**, an intergovernmental forum.
 - HQ: Norway



Key Points

- **Third Arctic Science Ministerial Conference:**
 - **Host Countries:** It was jointly organised by **Iceland and Japan**.
 - It was the **first Ministerial meeting** being held in **Asia (Tokyo in Japan)**.
 - **Objective:** It provides **opportunities to various stakeholders**, including academia, indigenous communities, governments and policymakers, to enhance collective understanding of the Arctic region, emphasize and engage in constant monitoring, and strengthen observations.
 - **Theme:** 'Knowledge for a Sustainable Arctic'.
- **India's Stand:**
 - To **contribute observing systems in the Arctic**, both in-situ and by remote sensing.
 - Would **deploy open ocean mooring in the Arctic** for long-term monitoring of upper ocean variables and marine meteorological parameters.

- The launch of **NISAR (NASA-ISRO Synthetic Aperture Radar)** satellite mission, in collaboration with the USA, is underway.
- Contributions to the **Sustained Arctic Observational Network (SAON)** would continue.

NASA-ISRO Synthetic Aperture Radar

- **NISAR** will scan the globe every 12 days over the course of its three-year mission of imaging the Earth's land, ice sheets and sea ice to give an unprecedented view of the planet.
- It aims to conduct **global measurements** of the **cause and consequences** of land surface changes using advanced **radar imaging**.

Sustaining Arctic Observing Network

- It is a joint activity of the **International Arctic Science Committee (IASC)** and the **Arctic Council**.
 - IASC is a **non-governmental, international scientific organization**.
- The purpose is to support and strengthen the development of multinational engagement for sustained and coordinated pan-Arctic observing and data sharing systems.

India's Engagement in the Arctic:

- India's engagement with the Arctic dates back to **1920** with the **signing of the Svalbard Treaty in Paris**.
- Since July 2008, India has had a **permanent research station** in the Arctic called **Himadri** at NyAlesund, Svalbard Area in **Norway**.
- India received the '**Observer**' country status in the **Arctic Council** in **2013** and is one among the 13 countries across the world, including China, to have that position which was again **renewed in 2018**.
- It has also deployed a **multi-sensor moored observatory** called **IndARC** in the **Kongsfjorden fjord** since July 2014.
- The research in the Arctic region from India is coordinated, conducted, and promoted by the **National Centre for Polar and Ocean Research (NCPOR)**, Goa, under the Ministry of Earth Sciences, Government of India.
- Recently, India drafted a **new Arctic policy** that aims at expanding scientific research, sustainable tourism and exploration of mineral oil and gas in the Arctic region.

➤ Significance of Arctic Study for India:

- Though none of India's territory directly falls in the Arctic region, it is a crucial area as the **Arctic influences atmospheric, oceanographic and biogeochemical cycles of the earth's ecosystem**.
- Arctic warming and its ice melt are global concerns as they play a pivotal role in regulating climate, sea levels, and maintaining biodiversity.
- There is **growing evidence of connection between the Arctic and the Indian Ocean** (which modulates the Indian monsoon). Hence, improving the understanding of physical processes and quantifying the impact of **Arctic ice melt** on the **Indian summer monsoon** is very important.

Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions

Why in News

- Recently, a report, titled **Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions** suggested that the world needs to dramatically cut methane emissions to avoid the worst of **climate change**.
- The report was released by the **Climate and Clean Air Coalition** and the **United Nations Environment Programme (UNEP)**.

Methane

- **About:**
 - Methane is gas that is found in small quantities in Earth's atmosphere. **Methane is the simplest hydrocarbon**, consisting of one carbon atom and four hydrogen atoms (CH_4). Methane is a **powerful greenhouse gas**. It is **flammable**, and is used as a fuel worldwide.
 - Methane is **produced by the breakdown or decay of organic material** and can be **introduced into the atmosphere by either natural processes** – such as the decay of plant material in wetlands, the seepage of gas from underground deposits or the digestion of food by cattle – or **human activities** – such as oil and gas production, rice farming or waste management.
- **Impact of Methane:**

Note:

- Methane is **84 times more potent than carbon** and **doesn't last as long in the atmosphere before it breaks down**. This makes it a critical target for reducing global warming more quickly while simultaneously working to reduce other greenhouse gases.
- It is **responsible for creating ground-level ozone**, a dangerous air pollutant.

Key Points

- **Current Situation:**
 - Human-caused **methane emissions are increasing faster currently** than at any other time since record keeping began in the 1980s.
 - **Carbon dioxide levels have dropped** during the **Covid-19 pandemic**. However, **methane in the atmosphere reached record levels last year**.
 - This is a cause of concern as it was **responsible for about 30% of warming since pre-industrial times**.
- **Reducing Methane Emissions from Major Sources:**
 - **Fossil Fuel:**
 - **Oil and gas extraction**, processing and distribution accounted for 23% of methane emissions in the fossil fuel sector. **Coal mining** accounted for 12% of emissions.
 - Fossil fuel industry had the **greatest potential for low-cost methane cuts**, up to 80% of measures in the oil and gas industry could be implemented at negative or low cost.
 - About 60% of methane cuts in this sector could make money as **reducing leaks would make more gas available for sale**.
 - **Waste:**
 - **Landfills and wastewater** made up about 20% of emissions in the waste sector.
 - The waste sector could cut its methane emissions by **improving the disposal of sewage around the world**.
 - **Agriculture:**
 - In the agricultural sector, **livestock emissions** from manure and enteric fermentation constituted for roughly 32% and **rice cultivation** 8% of emissions.
 - Three behavioural changes — **reducing food waste and loss, improving livestock management**

and adopting healthy diets (vegetarian or with a lower meat and dairy content) — could reduce methane emissions by 65–80 million tonnes per year over the next few decades.

➤ Region-wise Emission Reduction Potential:

- **Europe:**
 - Greatest potential to curb methane emissions from **farming, fossil fuel operations and waste management**.
 - The European Commission had adopted the **European Union Methane Strategy**.
- **India:**
 - Greatest potential to reduce methane emissions in the **waste sector**.
- **China:**
 - Mitigation potential was best in **coal production and livestock**.
- **Africa:**
 - Its potential to reduce methane emission was in **livestock, followed by oil and gas**.

➤ Need and Benefits:

- Human-caused **methane emissions must be cut by 45%** to avoid the worst effects of climate change.
- Such a cut would **prevent a rise in global warming by up to 0.3 degrees Celsius by 2045**. It would also prevent 260,000 premature deaths, 775,000 asthma-related hospital visits annually, as well as **25 million tonnes of crop losses**.
- However, **cutting methane emissions can rapidly reduce the rate of warming in the near-term** as the gas broke down quickly.

Related Indian Initiatives

➤ Seaweed-Based Animal Feed:

- Central Salt & Marine Chemical Research Institute (CSMCR) in collaboration with the country's three leading institutes developed a seaweed-based animal feed additive formulation that **aims to reduce methane emissions from cattle and also boost immunity of cattle and poultry**.

➤ India Greenhouse Gas Program:

- The India GHG Program led by WRI India (non-profit organization), Confederation of Indian Industry (CII) and **The Energy and Resources Institute (TERI)** is

Note:

- an industry-led voluntary framework to measure and manage greenhouse gas emissions.
- The programme **builds comprehensive measurement and management strategies to reduce emissions** and drive more profitable, competitive and sustainable businesses and organisations in India.
- **National Action Plan on Climate Change:**
 - The **National Action Plan on Climate Change (NAPCC)** was launched in 2008 which aims at creating awareness among the representatives of the public, different agencies of the government, scientists, industry and the communities on the threat posed by climate change and the steps to counter it.
- **Bharat Stage-VI Norms:**
 - India shifted from **Bharat Stage-IV (BS-IV) to Bharat Stage-VI (BS-VI)** emission norms.

Climate and Clean Air Coalition

- Launched in 2019, It is a **voluntary partnership** of governments, intergovernmental organizations, businesses, scientific institutions and civil society organizations **committed to protecting the climate and improving air quality through actions** to reduce short-lived climate pollutants.
- India is a member of the coalition.

United Nations Environment Programme

- **Launch:**
 - The UNEP is a leading global environmental authority **established on 5th june 1972**.
- **Functions:**
 - It **sets the global environmental agenda, promotes the sustainable development** within the **United Nations** system, and serves as an authoritative advocate for global environment protection.
- **Major Reports:**
 - **Emission Gap Report, Global Environment Outlook, Frontiers, Invest into Healthy Planet.**
- **Major Campaigns:**
 - Beat Pollution, UN75, **World Environment Day**, Wild for Life.
- **Headquarters:**
 - Nairobi, Kenya.

Biodegradable Yoga Mat

Why in News

Recently, six young girls from the fishing community from Assam have developed a **biodegradable and compostable yoga mat** called '**Moorhen Yoga Mat**'.

- The intervention was triggered through an initiative by **North East Centre for Technology Application and Reach (NECTAR)**.
- NECTAR is an autonomous society, set up under the Department of Science & Technology, with its headquarter at Shillong, Meghalaya.

Key Points

- **About the Mat:**
 - The 'Moorhen Yoga mat' is **named after Kam Sorai** (Purple moorhen, a resident bird of Deepor Beel Wildlife sanctuary).
 - It is a **hand-woven 100% biodegradable and 100% compostable mat** developed from water hyacinth.
 - The mat could **improve the aquatic ecosystem of the wetland (Deepor Beel)** through removal of water hyacinth, help sustainable production of utility products with community engagement and generate **livelihood for indigenous communities** to become completely '**Atamanirbhar**'.
- **Water Hyacinth:**
 - Water hyacinth is a type of **invasive floating plant** found in water bodies across the world.
 - These **invasive species** block the sunlight reaching and oxygen level in water systems, which results in damaging water quality and seriously affecting various life forms in the ecosystem.
 - It is also referred to as the **terror of Bengal** given its effect on the local ecology and lives of the people.
 - It has an effect on irrigation, hydroelectric generation and navigation.
 - It also leads to a drastic reduction in fish production, aquatic crops and an increase in diseases caused by mosquitoes.
- **Deepor Beel:**
 - Deepor Beel (Beel means wetland or large aquatic body in Assamese) **located about 10 km Southwest of Guwahati city** is considered **one of the large and important riverine wetlands in the Brahmaputra Valley of lower Assam**.

Note:

- Deepor Beel has both biological and environmental importance besides being the **only major storm-water storage basin** for Guwahati city.
- It is considered **one of the staging sites for migratory birds in India**; and some of the large congregations of aquatic birds in Assam during winter.
- Because of the richness of avian fauna it enjoys, Deepor Beel has been selected as **one of the Important Bird Area (IBA) sites** by Birdlife International.
- Deepor Beel has also been designated as a **Ramsar Site** in November 2002.

Red-Eared Slider Turtle

Why in News

The invasive red-eared slider can become a **major threat** to the biodiversity of water bodies across the Northeast region of India.

- The Northeast region of India is home to more than 72% of the turtle and tortoise species in the country.



Key Points

- **About:**
 - **Scientific Name:** Trachemys scripta elegans
 - **Habitat:** U.S. and northern Mexico
 - **Description:** The red-eared slider derives its name from red stripes around the part where its ears would be and from its ability to slide quickly off any surface into the water.
 - **Popular Pet:** This turtle is an extremely popular pet due to its small size, easy maintenance, and relatively low cost.

International Instruments and Programmes on Invasive Species

- **Cartagena Protocol on Biosafety (2000):**
 - The Protocol seeks to protect biological diversity from the potential risks posed by Living Modified Organisms resulting from modern biotechnology.
- **Convention on Biological Diversity (CBD):**
 - It was one of the key agreements adopted at the **1992 Earth Summit in Rio de Janeiro**.
 - The **Rio de Janeiro Convention on Biodiversity (1992)** had also recognised the **biological invasion of alien species of plants** as the **second-worst threat** to the environment after habitat destruction.
 - **Article 8 (h) of the Convention** calls on Parties to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species.
- **Convention on the Conservation of Migratory Species (CMS) or Bonn Convention (1979):**
 - It is an intergovernmental treaty that aims to conserve terrestrial, marine and avian migratory species throughout their range.
 - It also aims to control or to eliminate already present invasive alien species.
- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):**
 - It is an international agreement **adopted in 1975** that aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival.
 - It also considers the problems of invasive species when it is involved in trade and threatens the survival of live animals or plants.
- **Ramsar Convention (1971):**
 - The Ramsar Convention on Wetlands of International Importance is an international treaty for the conservation and sustainable use of wetlands.
 - It also addresses the environmental, economic and social impact of invasive species on wetlands within their jurisdictions and to take account of the methods of control and solutions for combating invasive species.

Note:

➤ **Reason for Concerns:**

- **Invasive Species:** Since it is an invasive species they grow fast and virtually leave nothing for the native species to eat and have a negative impact on the areas and the species living in the areas they invade.
- **Catch-22 Situation:** People who keep the turtle as pets become sensitive about turtle conservation but endanger the local ecosystem, probably unknowingly, by releasing them in natural water bodies after they outgrow an aquarium, tank or pool at home.

- **Impact on Human Health:** They can impact human health when these species may accumulate toxins in their tissues which pass on with the food chain upto humans.

Invasive Species of India

- An invasive species is an organism that causes ecological or economic harm in a new environment where it is not native.
- There are many invasive species in India. For eg : **Charru Mussel, Lantana bushes, Indian Bullfrog, etc.**

■ ■ ■



Note:

History

Highlights

- 400th Birth Anniversary of Guru Tegh Bahadur
- Birth Anniversary of Maharana Pratap
- Rabindranath Tagore

- Gopal Krishna Gokhale
- Basava Jayanti: Birth Anniversary of Guru Basaveshwara

400th Birth Anniversary of Guru Tegh Bahadur

Why in News

Sri Akhand Path was inaugurated at **Gurdwara Guru Ke Mahal**, the birthplace of the ninth Sikh guru, Guru Tegh Bahadur, to mark the 400th Prakash Purab (birth centenary) of the Guru.

Key Points

- **Guru Teg Bahadur (1621-1675):**
 - Guru Tegh Bahadur was the **ninth Sikh Guru**, often **venerated as the 'Protector of Humanity' (Srisht-di-Chadar)** by the Sikhs.
 - Known as **a great teacher**, Guru Tegh Bahadur was also an excellent warrior, thinker, and poet, who wrote detailed descriptions of the nature of God, mind, body, and physical attachments among other things spiritual.
 - His writings are housed in the sacred text, '**Guru Granth Sahib**', in the form of 116 poetic hymns.
 - He was also an avid traveler and **played a key role in setting up preaching centers** throughout the Indian subcontinent.
 - During one such mission, he **founded the town of Chak-Nanki in Punjab**, which later became a part of Punjab's Anandpur Sahib.
 - In the year 1675, Guru Tegh Bahadur was **executed in Delhi** under the orders of the **Mughal Emperor Aurangzeb**.
- **Sikhism:**
 - The word '**Sikh**' in the Punjabi language means '**disciple**'. Sikhs are the disciples of God who follow the writings and teachings of the Ten Sikh Gurus.

- Sikhs believe in **one God (Ek Onkar)**. They believe they should remember God in everything they do. This is called **simran**.
- The Sikhs call their faith **Gurmat** (Punjabi: "the Way of the Guru"). According to Sikh tradition, **Sikhism** was established by **Guru Nanak** (1469–1539) and subsequently led by a succession of nine other Gurus.
- The development of Sikhism was influenced by the **Bhakti movement** and **Vaishnava Hinduism**.
- The **Khalsa** upholds the highest Sikh virtues of commitment, dedication and a social conscience.
 - The Khalsa are men and women who have undergone the Sikh baptism ceremony and who strictly follow the **Sikh Code of Conduct and Conventions**.
 - They wear the prescribed physical articles of the faith (**5K's**: Kesh (uncut hair), Kangha (a wooden comb), Kara (an iron bracelet), Kachera (cotton underpants) and Kirpan (an iron dagger)).
- Sikhism **condemns blind rituals** such as fasting, visiting places of pilgrimage, superstitions, worship of the dead, idol worship etc.
- It preaches that **people of different races, religions, or sex are all equal** in the eyes of God.
- The Sikh Literature:
 - The **Adi Granth** is believed by Sikhs to be the abode of the eternal Guru, and for that reason it is known to all Sikhs as the **Guru Granth Sahib**.
 - The **Dasam Granth** is controversial in the Panth because of questions concerning its authorship and composition.
- **Shiromani Gurdwara Parbandhak Committee:**
 - Shiromani Gurdwara Parbandhak Committee, Amritsar, Punjab (India), an apex democratically elected body of Sikhs residing all over the

Note:

world was established under a **special Act of Parliament in 1925 to look after the religious affairs, cultural and historical monuments.**

Ten Gurus of Sikh Religion

➤ Guru Nanak Dev (1469-1539)

- He was the first guru of Sikh and the **founder of Sikh religion.**
- He started the **GURU KA LANGAR.**
- He was **contemporary of Babur.**
- **Kartarpur corridor** was commemorated on the **550th birth anniversary of Guru Nanak Dev.**

➤ Guru Angad (1504-1552)

- He invented the new script called **Guru-Mukhi** and popularized and expanded the system of Guru ka Langar.

➤ Guru Amar Das (1479-1574)

- He introduced the ceremony of the **Anand Karaj Marriage.**
- He **abolished the custom of Sati and Purdah system** among the Sikhs.
- He was **contemporary of Akbar.**

➤ Guru Ram Das (1534-1581)

- He **founded Amritsar** in **1577** on the land granted by Akbar.
- He **started the construction of Golden Temple/ Swarna mandir** at Amritsar.

➤ Guru Arjun Dev (1563-1606)

- He **composed the Adi Granth** in 1604.
- He led to the **completion of construction of Golden temple.**
- He was acclaimed as **Shaheed-e-Sartaj.**
- He was **executed by Jahangir** on charges of helping prince Khusrau.

➤ Guru Hargobind (1594-1644)

- He led to the transformation of the Sikh Community into a Military community. He is known as "**Soldier Saint**".
- He led to the establishment of **Akal Takht** and fortified the Amritsar City.
- He **waged wars against Jahangir and Shah Jahan.**

➤ Guru Har Rai (1630-1661)

- He was a man of peace thus devoted most of his life in maintaining peace with Aurangzeb and doing missionary work.

➤ Guru Har Krishan 1656-1664)

- He was the youngest guru of all and was given the title of Guru at a very early age of 5.
- He was summoned by Aurangzeb against anti-islamic blasphemy.

➤ Guru Teg Bahadur (1621-1675)

- He founded **Anandpur Sahib.**

➤ Guru Gobind Singh (1666-1708)

- He founded a warrior community known as **Khalsa** in 1699.
- He introduced a new rite "Pahul".
- He joined Bahadur Shah's as a noble.
- He was the last Sikh Guru in human form and he passed the Guruship of Sikhs to the Guru Granth Sahib.

Birth Anniversary of Maharana Pratap

Why in News

The Prime Minister of India paid tributes to Maharana Pratap on his Jayanti.

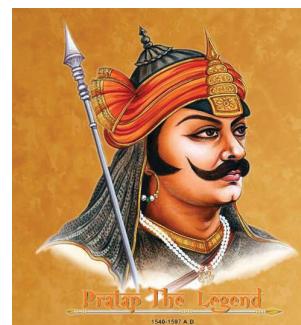
Key Points

➤ Description:

- **Rana Pratap Singh** also known as **Maharana Pratap** was born on **9th May 1540** in **Kumbhalgarh, Rajasthan.**
- He was the **13th King of Mewar** and was the eldest son of **Udai Singh II**
 - Maharana Udai Singh II ruled the kingdom of Mewar, with his capital at Chittor.
 - Udai Singh II was also a founder of the city of Udaipur (Rajasthan).

➤ Battle of Haldighati:

- The Battle of Haldighati was fought in 1576 between Rana Pratap Singh of Mewar and Raja Man Singh of Amber who was the general of the Mughal emperor Akbar.



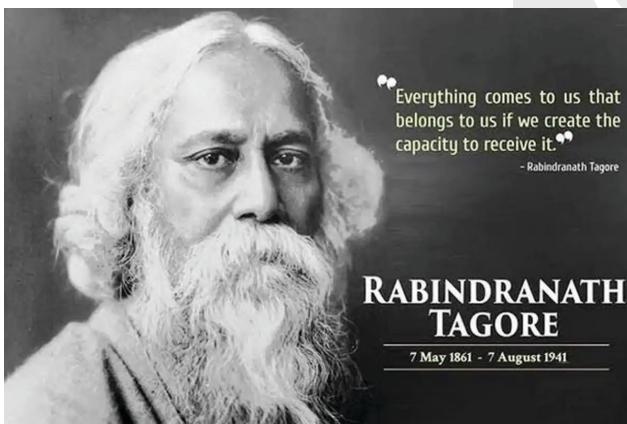
Note:

- Maharana Pratap fought a brave war, but was defeated by Mughal forces.
 - It is said that **Maharana Pratap's loyal horse named Chetak**, gave up his life as the Maharana was leaving the battlefield.
- **Reconquest:**
- After 1579, the Mughal pressure relaxed over Mewar and Pratap recovered Western Mewar including Kumbhalgarh, Udaipur and Gogunda.
 - During this period, he also built a new capital, **Chavand**, near modern Dungarpur.
- **Death:**
- He died on 19th January, 1597. He was succeeded by his son Amar Singh, who submitted in 1614 to Emperor Jahāngīr, son of Akbar.

Rabindranath Tagore

Why in News

The Prime Minister paid tribute to **Gurudev Rabindranath Tagore** on 160th Jayanti on 7th May, 2021.



Key Points

- **Birth:**
- He was born in Calcutta on 7th May 1861.
- **About:**
- He was also referred to as 'Gurudev', 'Kabiguru', and 'Biswakabi'.
 - He is regarded as the outstanding creative artist of modern India and hailed by W.B Yeats, Rabindranath Tagore was a **Bengali poet, novelist, and painter**, who was highly influential in introducing Indian culture to the west.

Note:

- He was an exceptional literary figure and a renowned polymath who singlehandedly reshaped the region's literature and music.

- He was a good friend of **Mahatma Gandhi** and is said to have given him the title of Mahatma.
- He had always stressed that **unity in diversity** is the only possible way for India's national integration.
- He had spoken at the **World Parliament for Religions in the years 1929 and 1937**.

➤ **Contributions:**

- He is said to have composed over 2000 songs and his songs and music are called '**Rabindra Sangeet**' with its own distinct lyrical and fluid style.
- He is responsible for modernising Bengali prose and poetry. His notable works include **Gitanjali, Ghare-Baire, Gora, Manasi, Balaka, Sonar Tori**. He is also remembered for his song '**Ekla Chalo Re**'.
- He published his first poems aged 16 under the pen-name '**Bhanusimha**'.
- He not only gave the **national anthems for two countries, India and Bangladesh**, but also inspired a Ceylonese student of his, to pen and compose the **national anthem of Sri Lanka**.
- Besides all his literary achievements, he was also a philosopher and educationist who in 1921 established the **Vishwa-Bharati University**, a university that challenged conventional education.

➤ **Awards:**

- In 1913 he was awarded the **Nobel Prize** in Literature for his work on *Gitanjali*.
 - He was the **first non-European** to receive the Nobel Prize.
- In 1915 he was awarded **knighthood** by the British King George V. In 1919, following the **Jallianwala Bagh massacre** he renounced his Knighthood.

➤ **Death:**

- He died on 7th August 1941 in Calcutta.

Gopal Krishna Gokhale

Why in News

The Prime Minister of India paid tribute to Gopal Krishna Gokhale on his Jayanti.

- Gopal Krishna Gokhale was a great social reformer and educationist who provided exemplary leadership to India's freedom movement.

Key Points

- **Birth:** 9th May, 1866 in Kotluk village in present-day Maharashtra (then part of the Bombay Presidency).
- **Ideology:**
 - Gokhale worked towards social empowerment, expansion of education, struggle for freedom in India for three decades and rejected the use of reactionary or revolutionary ways.
- **Role in Colonial Legislatures:**
 - Between 1899 and 1902, he was a member of the **Bombay Legislative Council** followed by work at the **Imperial Legislative Council from 1902 till his death (1915)**.
 - At the Imperial legislature, Gokhale played a key role in framing the **Morley-Minto reforms of 1909**.
- **Role in INC:**
 - He was associated with the Moderate Group of **Indian National Congress** (joined in 1889).
 - He became **president of INC in 1905 in Banaras session**.
 - This was the time when bitter differences had arisen between his group of 'Moderates' and the 'Extremists' led by **Lala Lajpat Rai** and **Bal Gangadhar Tilak** among others. The two factions split at the Surat session of 1907.
 - Despite the ideological difference, in 1907, he intensely campaigned for the release of **Lala Lajpat Rai**, who was imprisoned that year by the British at Mandalay in present-day Myanmar.
- **Related Societies and Other Works:**
 - He established the **Servants of India Society in 1905** for the expansion of Indian education.
 - He was also associated with the **Sarvajanik sabha journal** started by Govind Ranade.
 - In 1908, Gokhale founded the **Ranade Institute of Economics**.
 - He started English weekly newspaper, **The Hitavada** (The people's paper).
- **Mentor to Gandhi:**
 - As a liberal nationalist, he is regarded by **Mahatma Gandhi as his political guru**.
 - Gandhi wrote a book in Gujarati dedicated to the leader titled '**Dharmatma Gokhale**'.



Morley-Minto Reforms 1909

- The reforms included the **admission of Indians to the Secretary of State's council, to the viceroy's executive council**, and to the executive councils of Bombay and Madras, and the **introduction of an elected element into legislative councils** with provision for **separate electorates for Muslims**.
- The reforms were regarded by Indian nationalists as too cautious, and the provision of separate electorates for Muslims was resented by Hindus.
- The **legislative councils** at the **Centre and the provinces** were increased in size.
 - The Act increased the maximum **additional membership of the Imperial Legislative Council from 16 to 60**.
- The legislative councils at the Centre and the provinces were to have **four categories of members** as follows:
 - **Ex officio members:** Governor-General and members of the executive council.
 - **Nominated official members:** Government officials who were nominated by the Governor-General.
 - **Nominated non-official members:** Nominated by the Governor-General but were not government officials.
 - **Elected members:** Elected by different categories of Indians.
 - The elected members were **elected indirectly**.
- **Indians were given membership** to the Imperial Legislative Council for the **first time**.
- It introduced **separate electorates for the Muslims**.
 - Some constituencies were earmarked for Muslims and only Muslims could vote for their representatives.
- **Satyendra P Sinha** was appointed the first Indian member of the **Viceroy's Executive Council**.

Basava Jayanti: Birth Anniversary of Guru Basaveshwara

Why in News

The Prime Minister of India paid tribute to Jagadguru Basaveshwara on the occasion of Basava Jayanthi.

Note:

- In November 2015, the Prime Minister of India inaugurated the **statue of Basaveshwara** along the **bank of the river Thames** at Lambeth in London.

Key Points

- **Birth:**
 - He was born in Karnataka in 1131 CE.
- **About:**
 - He was an Indian 12th-century Philosopher, Statesman and a social reformer.
 - He was **Lingayat saint** in the Shiva-focussed **Bhakti movement**, and Hindu Shaivite social reformer during the reign of the **Kalyani Chalukya/Kalachuri dynasty**.
 - The Lingayats are a Hindu sect with a wide following in southern India that worships **Shiva as the only deity**.
 - He is also known as **Bhakti Bhandari** (literally, the treasurer of devotion), or **Basaveswara** (Lord **Basava**).
- **Contribution:**
 - Basavanna spread social awareness through his poetry known as **Vachanaas**.
 - Several important Lingayat works are credited to Basavanna, including Vachana such as the **Shasthala-vachana**, **Kala-jnana-vachana**, **Mantra-gopya**, **Ghatna Chakra-vachana** and **Raja-yoga-vachana**.
 - Basavanna, like **Gautama Buddha**, taught people how to live happily in a rational social order which later came to be known as the **Sharana movement**.



- The Sharana movement attracted people from all castes, and like most strands of the Bhakti movement, produced a corpus of literature, the vachanas, that unveiled the spiritual universe of the Veerashaiva saints.

- Basava fought against the inhuman practice of the **caste system**, which discriminated against people based on their birth.
- The **Anubhava Mantapa** established by Basava laid down the foundation of social democracy.
- Basava believed that man becomes great not by his birth but by **his conduct** in the society.
- He taught the dignity of manual labour by insisting on work as worship.
- **Death:**
 - He died in 1167 CE.

Bhakti movement

- The movement probably began in the Tamil region around the **6th and 7th century AD** and achieved a great deal of popularity through the poems of the **Alvars (devotees of Vishnu)** and **Nayanars (devotees of Shiva)**, the Vaishnavite and Shaivite poets.
- These saints looked upon religion not as a cold formal worship but as a loving bond based upon love between the worshipped and worshipper.
- Originally began in South India in the 9th century with **Shankaracharya** spread over all parts of India and by the 16th century was a great spiritual force to reckon with, especially after the great wave made by Kabir, Nanak and Shri Chaitanya.



Note:

Geography

Highlights

- Illegal Sale of Uranium
- Indian Monsoon Resembled Australian Monsoon

- Climate Change Causing Shift in Earth's Axis
- Lack of Fire Safety in India

Illegal Sale of Uranium

Why in News

Two people were arrested under the **Atomic Energy Act, 1962** for possessing uranium without licence and selling it illegally.

- On testing, the sample was **confirmed as natural uranium** by Bhabha Atomic Research Centre (BARC).

Key Points

- **Uranium:**
 - **About:**
 - Uranium occurs naturally in low concentrations in soil, rock and water. It is a hard, dense, malleable, ductile, silver-white, radioactive metal.
 - Uranium metal has a very high density.
 - When finely divided, it can react with cold water. In air it is coated by uranium oxide, tarnishing rapidly.
 - It can form solid solutions and intermetallic compounds with many of the metals.
 - **Applications:**
 - **Energy Production:** The main use of uranium in the civilian sector is to fuel commercial nuclear power plants for generation of **nuclear energy**.
 - This requires uranium to be enriched with the **uranium-235 isotope** and the chain reaction to be controlled so that the energy is released in a more manageable way.
 - **Making Atomic Bomb:** The first atomic bomb used in warfare was an uranium bomb.
 - This bomb contained **enough of the uranium-235 isotope** to start a runaway chain reaction which in a fraction of a second

caused a large number of the uranium atoms to undergo fission, thereby releasing a fireball of energy.

- **Used as Shield against Radiation:** Depleted uranium is also used as shield against radiation in **medical processes** using radiation therapy and also while **transporting radioactive materials**.
 - Though itself radioactive, uranium's high density makes it effective in halting radiation.
- **Used as Counterweights in Industry:** Its high density also makes it useful as counterweights in aircraft and industrial machinery.
- **Radiometric Dating:** The isotope **uranium 238** is used to estimate the age of the earliest igneous rocks and for other types of radiometric dating.
- **Fertilizer: Phosphate fertilizers** are made from material typically high in uranium, so they usually contain high amounts of it.
- **Health and Environmental Impacts:**
 - **Impact on Health:** Potentially depleted uranium has both chemical and radiological toxicity with the two important target organs being the **kidneys and the lungs**.
 - **Impact on Environment:** Uranium mining facilities produce tailings that generally are disposed of in near surface impoundments close to the mine.
 - These tailings pose serious environmental and health risks in the form of **Radon emission, windblown dust dispersal and leaching of contaminants** including heavy metals and arsenic into the water.
- **Uranium Deposits In India:**
 - In India, Uranium deposits occur in the **Dharwar rocks**.
 - It occurs along the **Singhbhum Copper belt (Jharkhand); Udaipur, Alwar and Jhunjhunu**

Note:

districts of Rajasthan, **Durg** district of Chhattisgarh, **Bhandara** district of Maharashtra and **Kullu** district of Himachal Pradesh.

- Significant quantities of reserves have been recently discovered in parts of **Andhra Pradesh and Telangana** between Seshachalam forest and Sresailam (Southern edge of Andhra to Southern edge of Telangana).

➤ **Legal Framework in India:**

- In pursuance to **entry at serial No. 54 of List I (Union List)**, the Parliament has passed '**The Mines & Minerals (Development and Regulation) Act, 1957 (MMDR Act)**'.
 - However, with respect to **minor minerals**, the **rulemaking powers have been delegated to the States** through this Act.
 - Since Uranium is a major mineral, it is **managed by the Union Government** under provisions of **MMDR Act**.
- The policy and legislation relating to Major minerals are managed by the Ministry of Mines, but **Uranium being an atomic mineral is managed by the Department of Atomic Energy (DAE)**.
 - The **Atomic Energy Act, 1962** seeks to provide standards of controlling radioactive substances and plants and measures to prevent radiation accidents, retain public safety, assure cautious disposal of radioactive wastes, and so on.
- Many of these mineral deposits are found in rich forest reserves and thus **approval of the Union Ministry of Environment, Forest and Climate Change** becomes necessary.

Bhabha Atomic Research Centre

- Dr. Homi Jehangir Bhabha conceived the Nuclear Program in India. Dr Bhabha established the Tata Institute of Fundamental Research (TIFR) for carrying out nuclear science research in 1945.
- To intensify the effort to exploit nuclear energy for the benefit of the nation, Dr Bhabha established the Atomic Energy Establishment, Trombay (AEET) in January 1954 for a multidisciplinary research program essential for the ambitious nuclear program of India. AEET was renamed Bhabha Atomic Research Centre (BARC) in 1966.

Note:

Indian Monsoon Resembled Australian Monsoon

Why in News

According to a recent **study based on fossil leaves**, **Indian monsoon 25 million years ago resembled present day Australia's**.

- Understanding the past dynamics of Indian monsoon **will help in climate modelling for future monsoon prediction**.

Key Points

➤ **About the Study:**

- The morphological characters of fossil leaves from different geological ages collected from Deccan Volcanic Province, East Garo Hills of Meghalaya, Gurha mine in Rajasthan and Makum Coalfield in Assam were analysed.
 - Plant leaf morphological characters such as apex, base and shape are **ecologically tuned with the prevailing climatic conditions** to adapt for all the seasons throughout the year.
- The results indicated that the **fossil leaves from India were adapted to an Australian type of monsoon and not the current Indian monsoon system during its voyage**.
 - After **India separated from Gondwana**, its 9000 km northward **voyage from the Southern Hemisphere to its modern position joined with Eurasia** took 160 million years.
- The reconstructed temperature data show that the **climate was warm (tropical to subtropical)** at all the studied fossil sites with **temperatures varying from 16.3–21.3 degrees C**.
- All the fossil sites **experienced high rainfall**, which varied from 191.6 cm to 232 cm.
- **Separation of India from Gondwana:**
 - More than 140 million years ago, **India was a part of the supercontinent called Gondwana**.
 - The **Gondwana** was composed of modern **South America, Africa, Antarctica, and Australia**.
 - **Tethys Ocean** - an immense body of water separated Gondwana from Eurasia.
 - When this **supercontinent split up**, a tectonic

- plate composed of India and modern Madagascar started to drift away.
- Then, **India split from Madagascar** and **drifted north-eastward** with a velocity of about 20 cm/year.
 - The continent **collided with Eurasia** about **50 million years ago**, giving **rise to the Himalayas**.
 - Nowadays, **India is still moving in the same direction** but with a lower velocity of about 4 cm/year, due to the resistance of the Eurasian plate.



Indian Monsoon

- The climate of India is described as the 'monsoon type'. In Asia, this type of climate is found mainly in the south and the southeast.
- Out of a total of 4 seasonal divisions of India, **monsoon occupies 2 divisions**, namely,
 - **The southwest monsoon season** - Rainfall received from the southwest monsoons is seasonal in character, which occurs between June and September.
 - **The retreating monsoon season** - The months of October and November are known for retreating monsoons.
- **Factors Influencing Southwest Monsoon Formation:**
 - **The differential heating and cooling of land and water** creates a low pressure on the landmass of India while the seas around experience comparatively high pressure.
 - **The shift of the position of Inter Tropical Convergence Zone (ITCZ)** in summer, over the Ganga plain (this is the equatorial trough normally positioned about 5°N of the equator. It is also known as the monsoon-trough during the monsoon season).
 - **The presence of the high-pressure area, east**

Note:

- of Madagascar**, approximately at 20°S over the Indian Ocean. The intensity and position of this high-pressure area affect the Indian Monsoon.
- **The Tibetan plateau** gets intensely heated during summer, which results in strong vertical air currents and the formation of low pressure over the plateau at about 9 km above sea level.
 - **The movement of the westerly jet stream** to the north of the Himalayas and the presence of the tropical easterly jet stream over the Indian peninsula during summer.
 - Tropical Easterly Jet (African Easterly Jet).
 - **El Nino/Southern Oscillation (SO):** Normally when the tropical eastern south Pacific Ocean experiences high pressure, the tropical eastern Indian Ocean experiences low pressure. But in certain years, there is a reversal in the pressure conditions and the eastern Pacific has lower pressure in comparison to the eastern Indian Ocean. This periodic change in pressure conditions is known as the SO.

Climate Change Causing Shift in Earth's Axis

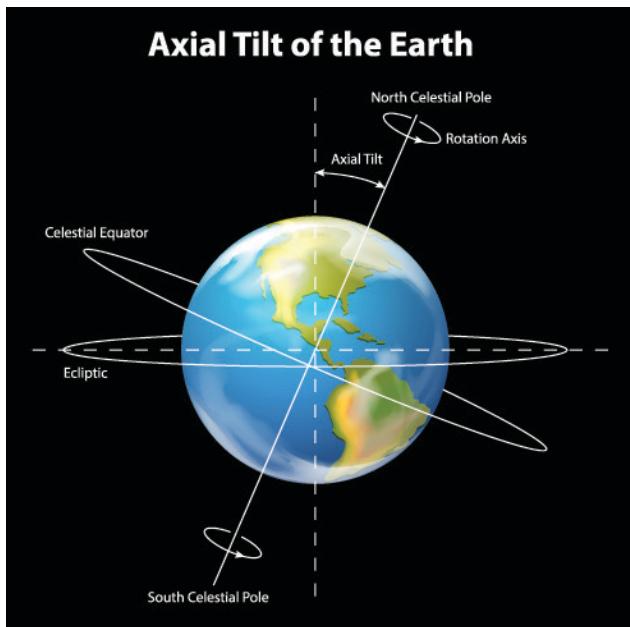
Why in News

A study published in Geophysical Research Letters of the American Geophysical Union (AGU) says that **due to the significant melting of glaciers** because of global temperature rise, **Earth's axis of rotation has been moving more than usual** since the 1990s.

- While this change is **not expected to affect daily life**, it can **change the length of the day by a few milliseconds**.

Key Points

- **Earth's Axis of Rotation:**
 - It is the **line along which it spins around itself** as it revolves around the Sun.
 - **Earth's axial tilt** (also known as the obliquity of the ecliptic) is about **23.5 degrees**. Due to this axial tilt, the sun shines on different latitudes at different angles throughout the year. This **causes the seasons**.
 - The **points on which the axis intersects the planet's surface** are the **geographical north and south poles**.



- The **location of the poles is not fixed**. The **axis moves due to changes in how the Earth's mass is distributed** around the planet. Thus, the **poles move when the axis moves**, and the movement is called "**polar motion**".
- Generally, polar motion is **caused by** changes in the hydrosphere, atmosphere, oceans, or solid Earth. But now, climate change is adding to the degree with which the poles wander.
- According to NASA, data from the **20th century** shows that the **spin axis drifted about 10 centimetres per year**. Meaning over a century, **polar motion exceeds 10 metres**.

➤ **Findings from the New Study:**

- Since the **1990s**, **climate change has caused billions of tonnes of glacial ice to melt** into oceans. This has **caused the Earth's poles to move in new directions**.
- The **north pole has shifted in a new eastward direction** since the 1990s, **because of changes in the hydrosphere** (meaning the way in which water is stored on Earth).
- From 1995 to 2020, the average speed of drift was **17 times faster** than from 1981 to 1995.
- Also, in the last four decades, the **poles moved by about 4 metres in distance**.
- The calculations were based on satellite data from **NASA's Gravity Recovery and Climate Experiment (GRACE) mission**.

○ **Causes of Polar Drift:**

● **Ice Melting:**

- The faster ice melting under global warming was the most likely cause of the directional change of the polar drift in the 1990s.
- As glaciers melt, water mass redistributes, causing shifts in the planet's axis.

● **Change in Non-Glacial Regions (Terrestrial Water Storage):**

- Due to climate change and unsustainable consumption of groundwater for irrigation and other anthropogenic activities.

● **Groundwater Depletion:**

- As millions of tonnes of water from below the land is pumped out every year for drinking, industries or agriculture, most of it eventually joins the sea, thus redistributing the planet's mass.

Lack of Fire Safety in India

Why in News

Over the past year, there have been deadly fires in hospital buildings, including those treating **Covid-19** patients.

- The **National Crime Records Bureau (NCRB)** says 330 people died in commercial building fires in 2019, while fatalities for residential or dwelling buildings were much higher at 6,329.

Key Points

➤ **Leading Cause:**

- Electrical faults are cited as the leading cause of fires but State governments are widely criticised for being lax with **building safety laws** and for failing to equip public buildings with modern technology.
- **Hospital ICUs (intensive care units)** are a great fire risk because they are oxygen-suffused, and need to meet high standards.

➤ **Provisions in India Related to Fire Safety:**

○ **Constitutional Provision:**

- The **Fire Services is a State subject** and has been included as a **Municipal function** in the **XIIth Schedule** of the Constitution of India under **Article 243 (W)**.

Note:

- The National Building Code (NBC) of India, 2016:
 - Part 4 of the NBC is titled 'Fire and Life Safety'.
 - NBC, published by the Bureau of Indian Standards, is a "recommendatory document", and States have been asked to incorporate it into their local building bylaws, making the recommendations a mandatory requirement.
 - All existing and new buildings are classified by nature of use, such as residential, educational, institutional, assembly (like cinemas and auditoria), business, mercantile, industrial, storage and hazardous.
 - The code broadly covers the following areas:
 - Fire Prevention: This covers aspects of fire prevention pertaining to the design and construction of buildings. It also describes the various types of buildings materials and their fire rating.
 - Life Safety: This covers life safety provisions in the event of fire and similar emergencies, also addressing construction and occupancy features that are necessary to minimise danger to life from fire, smoke, fumes or panic.
- The Model Building Bye Laws, 2016:
 - The Ministry of Urban Development has devised a circular called "Model Building By Laws 2016" which states the regulatory mechanism and engineering parameters to keep in mind before starting any construction project in India.
 - Point-specific responsibility for all fire-related clearance rests with the Chief Fire Officer.
 - The concerned Development Authority shall refer the building plans to the Chief Fire Officer for obtaining clearance in respect of buildings.

- Guidelines by National Disaster Management Authority (NDMA):
 - It has also stipulated requirements for fire safety in public buildings, including hospitals, which incorporate elements of the NBC, besides design guidelines on maintaining minimum open safety space, protected exit mechanisms, dedicated staircases, and crucial drills to carry out evacuations.
- The Central Government has also circulated 'Model Bill on Maintenance of Fire & Emergency Services 2019'.
- Concerns:
 - Lack of unified fire services in some of the states as unified fire services provide all the necessary guidelines and instruction in fire fighting.
 - Proper organisational structure, training and career progression of its personnel lacking in most of the fire departments in India.
 - Inadequate modern equipment and their scaling, authorization & standardization.
 - Appropriate and adequate funding is not available, which inhibits technological progression for fire fighting.
 - Unavailability of training institutions impinges real-time environmental understanding.
 - Lack of infrastructural facilities – fire stations and accommodation of personnel etc.
 - Vulnerability analysis is mostly not done.
 - Lack of Public awareness (DOs & DON'Ts), and regular mock exercises and evacuation drills are not conducted.
 - Lack of Uniform fire safety legislation.
 - Recently few states such as Maharashtra, Tamil Nadu and Kerala were found not complying with the NBC.



Note:

Social Issues

Highlights

- Overcrowding of Prison
- 'State of Working India 2021: One Year of Covid-19' Report
- International Labour Day
- Covid-19: India's Leading Cause of Death
- Maratha Reservation Struck Down: SC
- Unique Disability Identification Portal

- Effect of Covid on Urban and Rural Poor
- Covid-19: Make it the Last Pandemic Report
- Increased Child Marriages in Lockdown
- Enforced or Involuntary Disappearances
- New Approach for Post-Covid Education

Overcrowding of Prison

Why in News

The **Supreme Court (SC)** of India has ordered the **interim release of eligible prisoners** in view of the uncontrolled second surge in the raging Covid-19 pandemic.

- The Court's order aims to decongest jails and a measure that **protects the right to life and health of the prisoners**.

Key Points

- **Important Points of Supreme Court Order:**
 - Emphasised the need to adhere to the norms it had laid down in ***Arnesh Kumar vs State of Bihar (2014) case***.
 - Under this case, the police were asked not to effect unnecessary arrests, especially in cases that involve jail terms **less than seven years**.
 - Authorities in all districts in the country to give effect to **Section 436A of the Code of Criminal Procedure (Cr.P.C.)**.
 - Under the Section 436A of the Cr.P.C, the undertrials who have **completed half of the maximum prison term** prescribed for the offence may be released on **personal bond**.
 - Suggested the legislature to consider the idea of **placing convicts under house arrest** to avoid overcrowding of prisons.
 - The **occupancy rate in prisons** climbed to 118.5% in 2019. Moreover, a **very large sum of the budget** is used for the maintenance of prisons.

○ Ordered all States to **take preventive steps** as well as **constitute high-powered committees** to determine the class of prisoners who could be released on bail or parole for a specified period.

➤ Status of Indian Prisons:

- Indian prisons face **three long-standing structural constraints**:
 - Overcrowding,
 - Understaffing and underfunding and
 - Violent clashes.
- The **Prison Statistics India 2016**, published by the **National Crime Records Bureau (NCRB)** in 2019 highlights the plight of prisoners in India.
- **Under-trial Population:** India's under-trial population remains among the highest in the world and more than half of all undertrials were detained for less than six months in 2016.
 - The report highlights that at the end of 2016, there were 4,33,033 people in prison, of whom **68% were undertrials**.
 - This suggests that the high proportion of undertrials in the overall prison population may be the result of **unnecessary arrests** and **ineffective legal aid** during remand hearings.
- **People Held Under Preventive Detention:** There is the rise in the number of people held under **administrative (or 'prevention') detention laws** in Jammu and Kashmir.
 - A 300% increase, with 431 detainees in 2016, compared to 90 in 2015.
 - Administrative, or 'preventive', detention is used by authorities to detain persons without

Note:

- charge or trial and circumvent regular criminal justice procedures.
- **Unawareness about Section 436A of C.R.P.C.:** There is a gap between the number of prisoners eligible to be released and actually released, under Section 436A of the Code of Criminal Procedure.
 - In 2016, out of 1,557 undertrials found eligible for release under Section 436A, only 929 were released.
 - Also, research by Amnesty India has found that prison officials are frequently unaware of this section and unwilling to apply it.
 - **Unnatural Deaths in Prison:** The number of “unnatural” deaths in prisons has doubled between 2015 and 2016, from 115 to 231.
 - The rate of suicide among prisoners also increased by 28%, from 77 suicides in 2015 to 102 in 2016.
 - The **National Human Rights Commission (NHRC)** in 2014 had stated that on average, a person is one-and-a-half times more likely to commit suicide in prison than outside. This is a possible indicator of the magnitude of **mental health concerns** within Indian prisons.
 - **Lack of Mental Health Professional:** There was only one mental health professional for every 21,650 prisoners in 2016, with only six States and one Union Territory having psychologists /psychiatrists.
 - Also, the NCRB had said that about 6,013 individuals with mental illness were in jail in 2016.
 - As per the Prison Act, 1894 and Prisoner Act, 1900, there should be a **welfare officer and a law officer** in each jail but recruitment of these officers is still pending. This state explains the low political and budgetary priority which prisons have received during the preceding century.

Recommendation for Prison Reforms

- The Supreme Court appointed **Justice Amitava Roy (retd.) Committee** has given the following recommendations to reform prisons.
 - **For Overcrowding:**

- **Speedy Trial:** Speedy trial remains one of the best ways to remedy the unwarranted phenomenon of overcrowding.
- **Lawyer to Prisoner Ratio:** There should be at least **one lawyer for every 30 prisoners**, which is not the case at present.
- **Special Courts:** Special fast-track courts should be set up to deal exclusively with petty offences which have been pending for more than five years.
 - Further, accused persons who are charged with petty offences and those granted bail, but who are unable to arrange surety should be released on a **Personal Recognizance (PR) Bond**.
- **Avoid Adjournment:** An adjournment should not be granted in cases where witnesses are present and the concept of plea bargaining, in which the accused admits guilt for a lesser sentence, should be promoted.

- **For Prisoners:**

- **Accommodative Transition:** Every new prisoner should be allowed a free phone call a day to his family members to see him through his first week in jail.
- **Legal Aid:** Providing effective legal aid to prisoners and taking steps to provide vocational skills and education to prisoners.
- **Use of ICT:** Use of video-conferencing for trial.
- **Alternatives:** The courts may be asked to use their “discretionary powers” and award sentences like “fine and admonition” if possible instead of sending the offenders to jails.
 - Further, courts may be encouraged to release offenders on probation at pre-trial stage or after trial in deserving cases.

- **Filling Vacancies:**

- The Supreme Court should pass directions asking authorities to start the recruitment process against permanent vacancies within three months and the process should be completed in a year.
- **For Food:** Modern cooking facilities and canteens to buy essential items.
- In 2017, the **Law Commission of India** had recommended that undertrials who have completed a third of their maximum sentence for offences attracting up to seven years of imprisonment be released on bail.

Note:

Constitutional Provisions

- **State Subject:** 'Prisons/persons detained therein' is a State subject under Entry 4 of List II of the Seventh Schedule to the Constitution of India.
 - Administration and management of prisons is the responsibility of respective State Governments.
 - However, the **Ministry of Home Affairs** provides regular guidance and advice to States and UTs on various issues concerning prisons and prison inmates.
- **Article 39A:** Article 39A of the Constitution directs the State to ensure that the operation of the legal system promotes justice on a basis of equal opportunity and shall, in particular, **provide free legal aid by suitable legislation or schemes or in any other way**, to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities.
 - **Right to free legal aid or free legal service** is an essential fundamental right guaranteed by the Constitution.
 - It forms the basis of reasonable, fair and just liberty under **Article 21** of the Constitution of India, which says, "**No person shall be deprived of his life or personal liberty except according to procedure established by law**".

Key Terms

- **Undertrials:** These are the people who are yet to be found guilty of the crimes they have been accused of.
- **Preventive Detention:** The imprisonment of a person with the aim of preventing them from committing further offences or of maintaining public order.
 - **Article 22 (3) (b)** of the Constitution allows for preventive detention and restriction on personal liberty for reasons of state security and public order.
 - Further, **Article 22 (4)** states that no law providing for preventive detention shall authorise the detention of a person for a longer period than three months unless:
 - An Advisory Board reports sufficient cause for extended detention.
 - Such a person is detained in accordance with the provisions of any law made by the Parliament.

- **Personal Recognizance (PR) Bond:** It is also known as Own Recognizance (OR) bond, and sometimes referred to as "no cost bail". With this type of bond, a person is released from custody and is not required to post bail.
 - They are, however, responsible for showing up on their specified court date, and must sign a release form stating this promise in writing.
 - The person is then released from custody based on their promise to appear in court and abide by any conditions of release set by the court.

'State of Working India 2021: One Year of Covid-19' Report

Why in News

A report titled '**State of Working India 2021: One Year of Covid19**' brought out annually by Azim Premji University's Centre for Sustainable Employment, Bengaluru has been released.

- The report covers the period March 2020 to December 2020, dwells on the impact of one year of Covid-19 on **employment, incomes, inequality and poverty**.

Key Points

- **Impact on Employment:**
 - **100 million jobs were lost** during the April-May 2020 lockdown.
 - Though most of these workers had found employment by June 2020, **about 15 million remained out of work**.
- **Impact on Income:**
 - For an average **household** of four members, the **monthly per capita income in October 2020 (Rs. 4,979)** was still below its level in January 2020 (Rs. 5,989).
 - **Monthly earnings of workers fell on an average by 17%** during the pandemic, with self employed and informal salaried workers facing the highest loss of earnings.
- **Informalisation:**
 - Post-lockdown, nearly half of salaried workers had moved into informal work, either as self-employed (30%), casual wage (10%) or informal salaried (9%).

Note:

- **Retrograde Nature of Economic Impact:**
 - The bottom 20% of households earned nothing in the months of April and May 2020.
 - On the other hand, the top 10% suffered the least during the lockdown, and only lost about 20% of their February income during the lockdown months.
- **Disproportionate Impact on Women:**
 - During the lockdown and in the post lockdown months, 61% of working men remained employed while 7% lost their job and did not return to work.
 - But in the case of women, only 19% remained employed while 47% suffered a permanent job loss, "not returning to work even by the end of 2020".
- **Increase in Poverty Rate:**
 - The job loss and fall in earnings caused a large increase in poverty.
 - Households coped with the loss of income by **decreasing their food intake, selling assets and borrowing informally** from friends, relatives and moneylenders.
 - With 230 million falling below the national minimum wage threshold of Rs. 375 per day during the pandemic, poverty rate has "**increased by 15 percentage points in rural and nearly 20 percentage points in urban areas**".

Suggestions

- As India confronts the second wave and what is possibly its worst humanitarian crisis in recent years, urgent policy measures are needed to support an already beleaguered population.
- The extra **Public Distribution System (PDS)** entitlements under **Pradhan Mantri Garib Kalyan Yojana (PMGKY)** need to be extended till the end of the year.
- **Cash transfers of Rs. 5,000 for three months** to as many vulnerable households as can be reached with the existing digital infrastructure, including but not limited to **Jan Dhan accounts**.
- **MGNREGA (Mahatma National Gandhi Employment Guarantee Act)** has played a vital role and its allocation needs to be expanded.
- A pilot **urban employment programme** can be launched in the worst hit districts, possibly focused on women workers.
- A **Covid-19 hardship allowance of Rs. 30,000** (Rs.5,000 per month for six months) should be announced for

2.5 million **Anganwadi and ASHA workers** who have been at the frontlines of the grassroots fight against the virus.

International Labour Day

Why in News

Every year 1st May is observed as May Day and is also known as **International Labour Day worldwide**.

- The day is observed as an occasion to **commemorate the contributions of labourers and the working class**.
- The **International Labour Organization**, a United Nations agency, works towards setting international labour standards.

Key Points

- **History and Significance:**
 - **United States:**
 - Labour Day **has its origins in the labour union movement in the United States** in the 19th Century.
 - However, the **USA and Canada celebrate Labour day on the first Monday of September, every year**.
 - Labour day was designated as a day in support of workers by trade unions and socialist groups in the memory of the **Haymarket affair of 1886 in Chicago, USA**.
 - **Haymarket Affair** was a peaceful rally in support of workers which led to a violent clash with the police, leading to severe casualties. Those who died were hailed as "Haymarket Martyrs".
 - Workers' rights violations, straining work hours, poor working conditions, low wages and child labour were the issues highlighted in the protest.
 - **Europe:**
 - May Day was **first celebrated on 1st May, 1890**, after it was declared by the first **International Congress of Socialist Parties** in Europe in July 1889.
 - **USSR:**
 - The Soviet Union and the Eastern bloc nations **started celebrating the Labour day after the Russian Revolution, 1917**.

Note:

- New ideologies such as **Marxism and Socialism** inspired many socialist and communist groups and they attracted peasants and workers and made them an integral part of national movement.
- **India:**
 - The first Labour's Day was celebrated in 1923 in Chennai. This day was observed by the **Labour Kisan Party of Hindustan**.
 - On this day, communist leader **Malayapuram Singaravelu Chettiar** asked the government that 1st May should be considered as a national holiday to symbolise the efforts and work of the workers.
 - This day is also known as Kamgar Divas, Kamgar Din and Antarrashtriya Shramik Divas in India.

Constitutional Provisions Related to Labour

- Indian constitution provides numerous safeguards for the protection of labour rights. These safeguards are in the **form of fundamental rights and the Directive principle of State policy**.
- **Article 14** commands the State to **treat any person equally before the law**.
- **Article (19) (1) (c)** grants citizens the **right to form associations or unions**.
- **Article 21** promises **protection of life and personal liberty**.
- **Article 23** prohibits forced labour.
- **Article 24** prohibits employment of children below the age of fourteen years.
- **Article 39(a)** provides that the State shall secure to its citizens equal right to an adequate means of livelihood.
- **Article 41** provides that within the limits of its economic capacity the State shall secure for the **Right to work and education**.
- **Article 42** instructs the State to make provisions for securing just and humane conditions of work and for maternity relief.
- **Article 43** orders the State to secure a **living wage, decent conditions of work and social and cultural opportunities** to all workers through legislation or economic organisation.
- **Article 43A** provides for the participation of workers in **Management of Industries through legislation**.

Legal Provisions

- Parliament has passed **3 labour code bills** aimed at labour welfare reforms covering more than 50 crores organized and unorganized workers in the country.
- These three Bills are
 - **Social Security Code, 2020**.
 - **Code on Occupational Safety, Health & Working Conditions Code, 2020**
 - **Industrial Relations Code, 2020**

Covid-19: India's Leading Cause of Death

Why in News

According to the most recent estimates by the **Institute for Health Metrics and Evaluation (IHME)**, the **Covid-19 pandemic has emerged the biggest cause of death in India**.

- IHME is an independent global health research centre at the University of Washington, US.

Key Points

- **Death due to Covid-19 Pandemic:**
 - India has recorded **more than 19 million cases of coronavirus** - second only to the US and has confirmed **more than 2,15,000 deaths**.
 - The **human toll of the pandemic is more than double the number of humans killed in over 320 natural disasters** during the recent two decades (2000-2019).
- **Other Top Causes of Deaths in India:**
 - Ischemic heart disease (second),
 - Chronic obstructive pulmonary disease (third),
 - Strokes (fourth),
 - **Diarrhoeal diseases** (fifth),
 - **Neonatal disorders** (sixth),
 - **Lower respiratory infections** (seventh),
 - **Tuberculosis** (eighth),
 - **Diabetes mellitus** (ninth) and
 - **Chronic liver diseases**, including cirrhosis (tenth).
- **Reasons for Covid-19 being the Leading Cause of Death:**
 - The '**double mutant**' **B.1.617** Indian variant of SARS-CoV-2 has heightened risk.

Note:

- Lives have been lost due to the lack of preparedness of governments, India's poor health infrastructure, lack of medical oxygen and even medicines.
- The Centre and state governments have been accused and held responsible by the Supreme Court and High Court for undermining the scale of crisis and failure to manage it.
- Experts have also been unhappy with India's Covid-19 vaccine procurement and pricing policy. States have to await their quota of vaccines.

Maratha Reservation Struck Down: SC

Why in News

Recently, the Supreme Court (SC) declared a Maharashtra law which provides reservation benefits to the Maratha community, taking the quota limit in the State in excess of 50%, as unconstitutional.

Key Points

- **Background:**
 - 2017: A 11-member commission headed by Retired Justice N G Gaikwad recommended Marathas should be given reservation under Socially and Educationally Backward Class (SEBC).
 - 2018: Maharashtra Assembly passed a Bill proposing 16% reservation for Maratha community.
 - 2018: The Bombay High Court while upholding the reservation pointed out that instead of 16% it should be reduced to 12% in education and 13% in jobs.
 - 2020: The SC stayed its implementation and referred the case to Chief Justice of India for a larger bench.
- **Current Ruling:**
 - **Violation of Fundamental Rights:**
 - A separate reservation for the Maratha community violates Articles 14 (right to equality) and 21 (due process of law).
 - Reservation breaching the 50% limit will create a society based on "caste rule".
 - The Maratha reservation of 12% and 13% (in education and jobs) had increased the overall reservation ceiling to 64% and 65%, respectively.

Note:

- In the *Indira Sawhney judgment* 1992, SC had categorically said 50% shall be the rule, only in certain exceptional and extraordinary situations for bringing far-flung and remote areas' population into mainstream said 50% rule can be relaxed.

○ No Further Benefits:

- Appointments made under the Maratha quota following the Bombay High Court judgment endorsing the State law would hold, but they would get no further benefits.

○ Deprived States of the Power to Identify SEBCs:

- There will only be a single list of SEBC with respect to each State and Union Territory notified by the President of India, and that States can only make recommendations for inclusion or exclusion, with any subsequent change to be made only by Parliament.
- The Bench unanimously upheld the constitutional validity of the 102nd Constitution Amendment but differed on the question whether it affected the power of states to identify SEBCs.

○ Direction to NCBC:

- Asked the National Commission for Backward Classes (NCBC) to expedite the recommendation of SEBCs so that the President can publish the notification containing the list of SEBCs in relation to States and Union Territories expeditiously.

102nd Amendment Act of 2018

- It introduced Articles 338B and 342A in the Constitution.
- Article 338B deals with the newly established National Commission for Backward Classes.
- Article 342A empowers the President to specify the socially and educationally backward communities in a State.
- It says that it is for the Parliament to include a community in the Central List for socially and backward classes for grant of reservation benefits.

Unique Disability Identification Portal

Why in News

The Ministry of Social Justice & Empowerment has

issued a notification making it mandatory for all States/UTs to grant **certificate of disability** through online mode only using **UDID (Unique Disability ID)** portal w.e.f. 01.06.2021.

Key Points

- **Unique Disability Identification (UDID) Portal:**
 - The project is being implemented with a view of **creating a National Database for persons with disabilities (PwDs)**, and to issue a **Unique Disability Identity Card** to each PwDs.
 - The project will not only **encourage transparency, efficiency and ease of delivering the government benefits** to the person with disabilities, but also **ensure uniformity**.
 - The project will **also help in stream-lining the tracking of physical and financial progress of beneficiaries** at all levels of hierarchy of implementation – from village level, block level, District level, State level and National level.
- **Right of Persons with Disabilities Act 2016:**
 - **Right of Persons with Disabilities Act 2016** replaces the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995.
 - **Disability has been** defined based on an evolving and dynamic concept.
 - **It increases the quantum of reservation** for people suffering from disabilities **from 3% to 4% in government jobs** and **from 3% to 5% in higher education institutes**.
 - This Act brings our law in line with the **United National Convention on the Rights of Persons with Disabilities (UNCRPD)**, to which India is a signatory.
- **Other Programmes/Initiatives for Disableds:**
 - **Accessible India Campaign:** Creation of Accessible Environment for PwDs.
 - **DeenDayal Disabled Rehabilitation Scheme:** Financial assistance is provided to NGOs for providing various services to Persons with Disabilities.
 - **Assistance to Disabled Persons for Purchase / fitting of Aids and Appliances (ADIP):** It aims at helping the disabled persons by bringing suitable, durable, scientifically-manufactured, modern, standard aids and appliances within their reach.
 - **National Fellowship for Students with Disabilities:** It aims to increase opportunities to students with disabilities for pursuing higher education.

Note:

Effect of Covid on Urban and Rural Poor

Why in News

Recently, a report by Hunger Watch claimed that **Covid-19** has left the urban poor in India poorer, more hungry and with less nutrition than their rural counterparts.

- Hunger Watch is a loose collection of social groups and movements.
- Earlier, a **study from the United Nations Development Programme (UNDP)** had found that an additional 207 million people could be pushed into extreme poverty by 2030 due to the severe long-term impact of the coronavirus pandemic
- Also a **new research conducted by Pew Research Center** has found that the Covid-19 has pushed about 32 million Indians out of the middle class and increased poverty in the country.

Key Points

- **Economic Effect:**
 - The food insecurity has prompted more people to enter the labour force (55% increase in the labour force among the respondents).
 - It also noted a silent rise in **child labour** as well.
 - The economic crisis was deepening as people who lost their jobs were yet to find replacements and little had been accomplished after the **lockdown** for the revival of livelihoods in the informal sector.
 - Incomes reduced by half or a quarter for more than half the urban respondents while it was a little over one-third for rural respondents.
- **Public Distribution System & Social Sector Scheme Coverage:**
 - A large section of rural residents could cushion the blow of pandemic-driven economic disruption due to foodgrain via the **Public Distribution System (PDS)**. The urban poor's access to such ration, however, was minimal.
 - The social security schemes also had relatively better coverage among the rural poor as rural areas had better access to PDS rations.
 - A larger proportion of households in urban areas did not have access to ration cards.

➤ **Nutrition and Hunger:**

- A decline in nutritional quality and quantity was more among the urban respondents as was the need to borrow money for buying food.
- Overall, levels of hunger and food insecurity remained high, with little hope of the situation improving without measures specifically aimed at providing employment opportunities as well as food support.
- Even when India had a record food grain production at 296.65 million tonnes in the 2019-20 crop year (July-June), beating the target of 291.1 million tonnes and 4% higher than 2018-19, the net of hunger became more widespread as more people had to start skipping some meals in a day.
- Things were much worse for socially vulnerable groups such as households headed by single women, households with people having disabilities, transgender people and old persons without caregivers.

➤ **National Family Health Survey (NFHS) data:**

- The figures in the Hunger Watch report are alarming, especially when seen in conjunction with the recent rounds of NFHS data.
 - The NFHS data has shown either a worsening or stagnation in malnutrition outcomes such as prevalence of stunting and wasting among children and high levels of anaemia among women and children.
- **Government Initiatives to Mitigate the Effects of Covid:**
- Pradhan Mantri Garib Kalyan Yojana.
 - Reserve Bank of India's Covid-19 Economic Relief Package.
 - Atmanirbhar Bharat Abhiyan (self-reliant India).

Covid-19: Make it the Last Pandemic Report

Why in News

Recently, an independent global panel, the **Independent Panel for Pandemic Preparedness and Response (IPPPR)** in its report named "**Covid-19: Make it the Last Pandemic**" concluded that the **catastrophic scale of the Covid-19 pandemic could have been prevented**.

➤ The report was requested by **World Health Organization (WHO)** member states in May 2020.

Key points

➤ **Reasons for Inflated Covid Catastrophe:**

○ **Bad Decisions:**

- A series of **bad decisions meant Covid-19 went on to kill at least 3.3 million people so far and devastate the global economy.**
- **Poor strategic choices, unwillingness to tackle inequalities and an uncoordinated system** created a toxic cocktail which allowed the pandemic to turn into a catastrophic human crisis.

○ **Failure of Institutions:**

- Institutions **failed to protect people and science-denying leaders eroded public trust in health interventions.**
- The **threat of a pandemic had been overlooked** and countries were woefully unprepared to deal with one.

○ **Lack of Urgency:**

- Early responses to the outbreak detected in Wuhan, China in December 2019 **lacked urgency**, with **February 2020 a costly "lost month"** as countries failed to heed the alarm.

○ **Delay:**

- The emergence of Covid-19 was characterised by a mixture of some early and rapid action, but also by **delay, hesitation, and denial.**
- WHO could have declared the situation a **Public Health Emergency of International Concern (PHEIC)**, its highest level of alarm in January 2020.

➤ **Recommendations:**

○ **Rich Should Help Poor:**

- Rich, well-vaccinated countries should provide the 92 poorest territories in the **Covax scheme** with at least **one billion vaccine doses by September 2021, and more than two billion by mid-2022.**

- The **G7** industrialised nations should pay 60% of the USD19 billion required to **fund vaccines, diagnostics and therapeutics** via the WHO's access to **Covid Tools Accelerator programme in 2021.**
- **G20** nations and others should provide the rest.

○ **International Organizations should Facilitate Technology Transfer:**

Note:

- The WHO and the **World Trade Organization (WTO)** should also get major vaccine-producing countries and manufacturers to agree to voluntary licensing and technology transfers for Covid-19 vaccines.
 - If actions do not occur within three months, a **waiver of intellectual property rights should come into force immediately.**
 - India and South Africa are already attempting to get WTO member countries to agree to such a **waiver to fight the pandemic equitably.**
- **Suggestions to Prevent Future Pandemics:**
 - **Global Health Threats Council:**
 - To tackle future outbreaks and pandemics, the panel called for a **Global Health Threats Council** made up of world leaders, plus a **pandemic convention.**
 - **International Pandemic Financing Facility:**
 - The **G20** should also create an International Pandemic Financing Facility, able to spend **USD 5-10 billion a year on preparedness**, with USD 50 to USD 100 billion ready to roll in the event of a crisis.
 - **Overhauling WHO:**
 - Proposed an overhaul of the WHO to give it greater control over its funding and more authority for its leadership.
 - Its alert system needed to be faster and it should have the authority to send expert missions to countries immediately without waiting for their green light.

Independent Panel for Pandemic Preparedness and Response

- **About:**
 - It was established in 2020 by the WHO Director-General in response to the World Health Assembly resolution 73.1.
 - Resolution 73.1 renewed the commitment to better prepare for health emergencies and compliance with the International Health Regulations.
- **Secretariat:**
 - The Independent Panel is supported by its own independent Secretariat, based in Geneva.
- **Mission:**

- To provide an **evidence-based path for the future**, grounded in lessons of the present and the past to ensure countries and global institutions, including specifically WHO, effectively address health threats.

Increased Child Marriages in Lockdown

Why in News

Recently, some activists and organisations of Karnataka have raised the issue of **increased child marriages in Lockdown** with the **Ministry of Women and Child Development**.

- According to a report published in December 2020 by ChildLine India, **the pandemic and the subsequent lockdown have proved to be new drivers of child marriages** in rural Madhya Pradesh.

Key Points

- **Child Marriage:**
 - It is defined as a **marriage of a girl or boy before the age of 18** and refers to both formal marriages and informal unions in which **children under the age of 18 live with a partner as if married.**
 - **United Nations Children's Fund (UNICEF)** estimates suggest that each year, at least 1.5 million girls under 18 get married in India, which makes it home to the largest number of child brides in the world - accounting for a third of the global total.
 - Recent study by **The Lancet** shows that up to 2.5 million more girls (below the age of 18) around the world are at risk of marriage in the next 5 years because of the Covid-19 pandemic.
- **Reason for Increased Child Marriages during Lockdowns:**
 - **Lack of Alert Mechanism:**
 - Earlier, when child marriages happened at wedding halls, temples, etc, there were people who would alert the relevant authorities or activists who would be able to reach on time to stop it. But now, with marriages happening at homes, we may get fewer alerts and our going there could be treated as trespass.
 - **Pandemic Induced Pressures:**

Note:

- Economic pressures due to the pandemic have pushed poor parents to marry off girls early.
 - With no schools, safety of children, particularly girls, was a major reason for increase in violence against children and child marriages.
- General Causes for Child Marriages:
- Age Factor:
 - Some parents consider the age period of 15-18 as unproductive, especially for girls, so they start finding a match for their child during this age period.
 - Underaged girls are more prone to child marriage than boys.
 - Further, the **Right To Education Act** makes education free and compulsory up to the age of 14 only.
 - Insecurity:
 - Law and Order are still not able to provide a secure environment for the girls in adolescent age, so some parents get their girl child married at a young age.
 - Other Reasons:
 - Poverty,
 - Political and financial reasons,
 - Lack of education,
 - Patriarchy and gender inequalities, etc.
- Impact:
- Delays Demographic Dividend:
 - Child Marriage contributes to larger families and in turn, population growth. This delays the demographic dividend that would have come from reduced fertility and investment in education.
 - Bad for Family:
 - Children married at a young age do not understand the responsibilities of marriage. This results in a lack of understanding among family members. Hence, disturbs the institution of the family.
 - On the Child Bride:
 - It negatively influences children's rights to education, health and protection.
 - A girl who is married as a child is more likely to be out of school and not earn money and contribute to the community.

- She is more likely to experience domestic violence and become infected with HIV/AIDS.
 - There are more chances of her dying due to complications during pregnancy and childbirth.
- Government Initiatives to Prevent Child Marriages:
- The **Child Marriage Restraint Act of 1929** restricts the practice of child marriage.
 - The **Special Marriage Act, 1954** and the **Prohibition of Child Marriage Act, 2006** prescribe 18 and 21 years as the minimum age of consent for marriage for women and men respectively.
 - The **Prohibition of Child Marriage Act, 2006** was enacted to address and fix the shortcomings of the Child Marriage Restraint Act.
 - The **Union Ministry for Women and Child Development** has set up a committee to examine matters pertaining to age of motherhood, imperatives of lowering **Maternal Mortality Ratio** and the improvement of nutritional levels among women. The Committee is headed by Jaya Jaitely.
 - The Committee was proposed in the **Union Budget 2020-21**.
 - Prevention of Child Marriage is a part of **SDG 5** which deals with gender equality and empowerment of all women and girls.

Enforced or Involuntary Disappearances

Why in News

Since the coup in Myanmar, the **United Nations Working Group on Enforced or Involuntary Disappearances (WGEID)** has received reports of enforced disappearances from the family members of victims.

- Many Asian regimes are using enforced disappearances as a tool to suppress the people.

Key Points

- About:
- Enforced disappearance occurs when a person is secretly abducted or imprisoned by a state or political organization, or by a third party with the authorization, support, of a state or political organization, followed by a refusal to acknowledge the person's fate and whereabouts, with the intent to prevent, for a prolonged period, the person's freedom of movement and/or the person's right to liberty.

Note:

intent of placing the victim outside the protection of the law.

- Enforced disappearances became widely known to the world in the **1970s and the early 1980s during the 'Dirty War' in Argentina**.
- **Dirty War, also called Process of National Reorganization, was a infamous campaign waged by Argentina's military dictatorship against suspected left-wing political opponents.**

➤ **Constituents of Enforced Disappearances:**

- **Deprivation of liberty** against the will of the person.
- **Involvement of government officials**, at least by acquiescence.
- **Refusal to acknowledge the deprivation of liberty** or concealment of the fate or whereabouts of the disappeared person.

➤ **Recent Occurrences:**

- **Myanmar:**
 - The **military is committed to suppressing the people's movement**, and the police are carrying out unimaginable acts of violence and oppression against those demanding freedom of expression and the restoration of democracy.
- **China:**
 - Under the pretext of re-education to prevent terrorism, **Uyghur minority ethnic group members are forcibly sent to what Chinese authorities call 'vocational education and training centers'**, with no information on their whereabouts.
- **Sri Lanka:**
 - It has experienced more than three decades of **domestic conflict accompanied by various forms of enforced disappearances**.
- **Pakistan and Bangladesh:**
 - Enforced disappearances are **being committed in the name of counter-terrorism measures**.

➤ **Global Measures:**

- **United Nations Working Group on Enforced or Involuntary Disappearances (WGEID):**
 - **About:**
 - In 1980, the **UN Commission on Human Rights** (now replaced with UN Human Rights Council) decided to "establish for a period of one year a working group consisting of five of its members, to serve as experts

in their individual capacities, to examine questions relevant to enforced or involuntary disappearances of persons".

● **Functions:**

■ **Assist Families:**

1. It **assists families in determining the fate or whereabouts** of their family members who have reportedly disappeared.

■ **Oblige States:**

1. It is **entrusted with monitoring the progress of States in fulfilling their obligations** deriving from the Declaration and to provide to Governments assistance in its implementation.

■ **Involves NGOs:**

1. It **draws the attention of Governments and non-governmental organizations (NGOs)** to different aspects of the Declaration and recommends ways of overcoming obstacles to the realization of its provisions.

○ **International Convention for the Protection of all Persons from Enforced Disappearance in 2006:**

- To protect the right to be free from enforced disappearances, the international community adopted the International Convention for the Protection of all Persons from Enforced Disappearance in 2006.
 - This became effective in 2010 and the **Committee on Enforced Disappearances(CED)** was established .
 - CED and WGEID coexist side by side and seek to collaborate and coordinate their activities with a view to strengthen the joint efforts to prevent and eradicate enforced disappearances.
 - The number of participating states is still very low compared to other treaties.
 - Among **63 member states** of the treaty, only eight states from the Asia-Pacific region have ratified or acceded to the treaty.
 - Only four East Asian states — Cambodia, Japan, Mongolia, and Sri Lanka have ratified it.
 - **India has signed but not ratified it.**

➤ **Relevant Indian Laws:**

- In India there is **no specific legislation for enforced disappearances** but there are international, constitutional legal protections available for torture,

Note:

extra judicial killings and forced disappearances such as the **Armed forces and special powers Act, 1958**, Prevention of torture bill, 2017, **Right to Information act 2005** etc.

New Approach for Post-Covid Education

Why in News

Due to a **surge in Covid-19 infections** in the **Second Wave** of infections, the education of students in the entire nation is affected.

Key Points

➤ Concerns:

- **Availability of Online Education:**

- Online education was envisioned as an alternative means of spreading education, but it too fails, given the Indian students' conditions.
- The **availability and affordability of this system poses a barrier**.
- While e-education is a privilege for the students from an upper and middle class, it has proved to be a **nuisance for students from the lower middle class** and people living **below the poverty line**.

- **Long-Term Exposure to Internet:**

- There are also implications of longer exposure to the internet for these young kids.
- This may create **impediments to the development of the thinking process** in the younger generation.

- **Decreasing Analytical Thinking:**

- The other important question is about the **learning outcomes of online education**.
- Google is the prominent and only platform to all queries, and as a result of that, **students are not thinking on their own**.
 - Scientific outlook was the key parameter stressed upon since the inception of modern education in India.

- **Increasing Student Isolation:**

- Due to the pandemic and lack of physical classroom teaching, a peculiar **feeling of isolation is developing in the minds of students**. That's a very serious issue. The trauma of the second

wave will put a deep imprint on the student's mind.

- **Physical interaction and activities have been entirely absent**, and that may also be contributing to new problems.

➤ Possible Solutions:

- **Use of Infrastructure:**

- The whole **infrastructure should be fully utilised**, and if necessary, many **more facilities should be invested in** (and created) to impart education.
 - As classroom teaching gives us the opportunity to impart many more things apart from information.

- **New Content:**

- Institutions should **contemplate new content generation for each subject** to overcome the absence of classroom teaching within the framework of the existing syllabus.
- This content would be of a **new type, self-explanatory, and considering the lowest IQ of the class**, it has to be attractive.
- The content **should produce the same effect on the minds of the students that the best book imparts** on the thinking faculty.

- **Personal Supervision:**

- The teachers and non-teaching staff should **visit the locality of the students (in and around the school area)** on a weekly basis to supervise the whole work.
- They should **take notes on the problems faced by students** in understanding the reading material and also whether things are reaching them on time.

- **New Evaluation System:**

- The evaluation should be **based on the capacity of analysis, and the questions** should be framed in such a way that **students need to apply their minds** to answer the questions on each subject.

- **Prioritizing Vaccination:**

- In addition, the **government should take the responsibility to vaccinate** the whole teaching community as fast as possible to advance this learning process.

➤ Related Government Initiatives for E-Learning:

- **E-PG Pathshala:**

Note:

- An initiative of the Ministry of Human Resource Development to provide e-content for studies.
- **SWAYAM:**
 - It provides for an integrated platform for online courses.
- **NEAT:**
 - It aims to use **Artificial Intelligence** to make learning more personalized and customized as per the requirements of the learner
- **PRAGYATA:**
 - The Ministry of Human Resource Development (MHRD) released guidelines on **digital education** titled PRAGYATA.
- Under the PRAGYATA guidelines, only 30 minutes of screen time per day for interacting with parents is recommended for kindergarten, nursery and pre-school.
- **National Programme on Technology Enhanced Learning:**
 - The NPTEL is a project of MHRD initiated by seven Indian Institutes of Technology (IIT), along with the Indian Institute of Science Bangalore.
 - It was started in 2003 and its aim was to have **web and video courses in engineering, sciences, and management**.

■ ■ ■



Note:

Security

Highlights

- Myanmar Refugees Can Approach UNHCR: Manipur HC
- P-8I Patrol Aircraft
- Iron Dome Air Defence System: Israel

Myanmar Refugees Can Approach UNHCR: Manipur HC

Why in News

The **High Court of Manipur** has ordered safe passage to seven **Myanmar nationals**, stranded at a border town in Manipur, to travel to the **United Nations High Commissioner for Refugees (UNHCR)** in New Delhi.

- The seven nationals entered India secretly after the **military coup** in Myanmar.
- The coup returned Myanmar to full **military rule** after a short span of **quasi-democracy** that began in 2011, when the military, which had been in power since 1962, implemented parliamentary elections and other reforms.

Key Points

- **Observation made by Manipur HC:**
 - Although **India has no clear refugee protection policy or framework**, it does grant asylum to a large number of refugees from the neighbouring country.
 - India usually respects UNHCR's recognition of the status of such asylum seekers, mainly from Afghanistan and Myanmar.
- Though **India is not a party to the UN Refugee Conventions**, it is a party to the **Universal Declaration of Human Rights of 1948** and the **International Covenant on Civil and Political Rights of 1966**.
- Article 21 of the Constitution encompasses the right of non-refoulement.
 - **Non-refoulement** is the principle under **international law** which states that a person fleeing persecution from his own country should not be forced to return to his own country.

➤ India-Myanmar Border:



- **Bordering States:** India and Myanmar share a 1,643 km border and people on either side have familial ties.

- Arunachal Pradesh shares 520 kms.
- Nagaland shares 215 kms.
- Manipur shares 398-km.
- Mizoram shares 510-km.
- The border along the four states is **unfenced and porous**.

○ Free Movement Regime (FMR):

- A Free Movement Regime (FMR) exists between India and Myanmar.
- Under FMR, every member of the hill tribes, who is either a citizen of India or a citizen of Myanmar and who is resident of any area **within 16 km** on either side of the Indo-Myanmar Border (IMB) can cross the border with a border pass (with one-year validity) issued by the competent authority and can stay up to two weeks per visit.

➤ Recent Influx of People from Myanmar:

Note:

- India already has a lot of **Rohingya** migrated from **Myanmar**.
 - Rohingyas are **ethnic Muslims of Myanmar** living in Rakhine province in the Arakan region.
 - About 1,68,000 Rohingyas had fled Myanmar since 2012, when clashes with Buddhists erupted in the trouble-torn Arakan region.
- Since the **Myanmar Army seized power** on 1st February 2021, there has been an **influx of people into India's north eastern states**.
 - Many of them are democracy activists **belonging to the Chin ethnic group**, or policemen who said they disobeyed orders to shoot at protesters.

➤ **India's Stand on Refugees:**

- India has **welcomed refugees in the past**, and on date, nearly 3,00,000 people here are categorised as refugees. But **India is not a signatory to the 1951 Refugee Convention or its 1967 Protocol**. **Nor does India have a refugee policy or a refugee law of its own**.
- This has allowed India to keep its options open on the question of refugees. The government can declare any set of refugees as illegal immigrants — as has happened with Rohingya despite the UNHCR verification — and decide to deal with them as trespassers under the **Foreigners Act** or the **Indian Passport Act**.
- The closest India has come to a refugee policy in recent years is the **Citizenship Amendment Act, 2019**, which discriminates between refugees on the basis of religion in offering them Indian citizenship.

United Nations Refugee Convention 1951

- It is a United Nations multilateral treaty that **defines who is a refugee**, and sets out the rights of individuals who are granted asylum and the responsibilities of nations that grant asylum.
- It also **set out which people do not qualify as refugees**, such as war criminals.
- It grants certain rights to people fleeing persecution because of race, religion, nationality, affiliation to a particular social group, or political opinion.
- It builds on Article 14 of the Universal Declaration of Human Rights 1948, which recognizes the right of persons to seek asylum from persecution in other countries.

- The **1967 Protocol** included refugees from all countries as opposed to the 1951 Convention that only included refugees from Europe.
- **India is not a party** to this convention.

United Nations High Commissioner for Refugees

- United Nations High Commissioner for Refugees (UNHCR) is a **UN Refugee Agency** and a global organization dedicated to saving lives, protecting the rights and building a better future for refugees, forcibly displaced communities and stateless people.
- It was **created in 1950** to help millions of Europeans who had fled or lost their homes.
- It is **headquartered at Geneva, Switzerland**.

P-8I Patrol Aircraft

Why in News

- The US State Department has approved the sale of six **P-8I patrol aircraft** and related equipment to India.
- The six aircraft will come fitted with encrypted systems, as India has signed the **Communications Compatibility and Security Agreement (COMCASA)** with the US.
 - The **Defence Acquisition Council** approved the procurement of the aircraft in 2019.

Key Points

- **About the P-8I Aircraft:**
 - It is a **long-range maritime reconnaissance and Anti-Submarine Warfare Aircraft**.
 - It is a **variant of the P-8A Poseidon aircraft** that Boeing company developed as a replacement for the US Navy's ageing P-3 fleet.
 - With a **maximum speed of 907 kmph** and an operating range of over 1,200 nautical miles, the P-8Is detect threats and neutralize them if required, far before they come anywhere near Indian shores.
 - **Indian Navy became the first international customer** for the P-8 aircraft in 2009.
- **Indo-US Defence Ties:**
 - This proposed sale will help to **strengthen the US-Indian strategic relationship**.
 - For the US, **India** continues to be an important force for political stability, peace, and economic progress in the **Indo-Pacific and South Asia region**.

Note:

- Defense purchases from the United States have been increasingly an integral part of growing ties between the two countries.
 - From **near zero in 2008**, India-US defence trade **touched USD 20 billion in 2020**, helped along by major policy upgrades.
- The US **designating India a Major Defence Partner** (in 2016) and then **granting it the same access to defence technology as NATO allies** and Australia, Japan and South Korea under Strategic Trade Authorization-1 (STA) in 2018.
- **COMCASA Agreement:**
 - **COMCASA (Communications Compatibility and Security Agreement)** is meant to provide a legal framework for the **transfer of communication security equipment** from the US to India that would facilitate “interoperability” between their forces — and potentially with other militaries that use US-origin systems for secured data links.
 - It is **one of the four foundational agreements** that the US signs with allies and close partners to facilitate interoperability between militaries and sale of high end technology.
 - It is an **India-specific version of the Communication and Information on Security Memorandum of Agreement (CISMOA)**.

Four Foundational Agreements between the US and its Partners

- **General Security Of Military Information Agreement (GSOMIA)**
 - GSOMIA allows militaries to share the intelligence gathered by them.
 - Signed by India in 2002.
- **Logistics Exchange Memorandum of Agreement (LEMOA)**
 - LEMOA allows both countries to have access to each other's designated military facilities for refueling and replenishment.
 - Signed by India in 2016.
- **Communications and Information Security Memorandum of Agreement (CISMOA)**
 - **Communications Compatibility and Security Agreement (COMCASA)** is the India specific version of CISMOA.
 - Signed by India in 2018.

- **Basic Exchange and Cooperation Agreement (BECA)**
 - BECA will allow India and US militaries to share geospatial and satellite data with each other.
 - India has **signed BECA** in 2020.

Defence Acquisition Council

- The Defence Acquisition Council is the **highest decision-making body in the Defence Ministry** for deciding on new policies and capital acquisitions for the three services (Army, Navy and Air Force) and the Indian Coast Guard.
- The **Minister of Defence is the Chairman** of the Council.
- It was formed, after the Group of Ministers recommendations on ‘Reforming the National Security System’, in 2001, post Kargil War (1999).

Iron Dome Air Defence System: Israel

Why in News

Israel used its Iron Dome air defence system in recent **violent clashes over Jerusalem**.

Key Points

- **About:**
 - It is a **short-range, ground-to-air, air defence system** that includes a **radar** and **Tamir interceptor missiles** that track and neutralise any rockets or missiles aimed at Israeli targets.
 - It is **used for countering** rockets, artillery & mortars as well as aircraft, helicopters and Unmanned Aerial Vehicles (UAV).
 - It is capable of being **used in all weather conditions**, including during the day and night.
 - It was **developed by the state-run Rafael Advanced Defense Systems and Israel Aerospace Industries** and was **deployed in 2011**.
 - Rafael claims a **success rate of over 90%, with more than 2,000 interceptions**, however experts agree the **success rate is over 80%**.
 - It can **protect** deployed and manoeuvring forces, as well as the **Forward Operating Base (FOB)** and urban areas, against a wide range of indirect and aerial threats.

Note:

➤ Components:

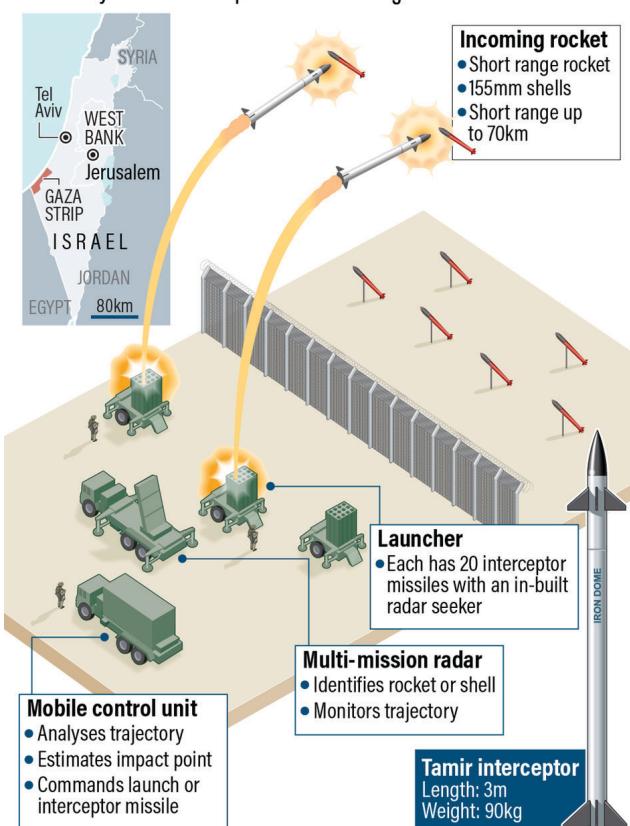
- The Iron Dome has **three main systems that work together** to provide a shield over the area where it is deployed which are:
 - **Radar:** It has a detection and tracking radar to spot any incoming threats.
 - **Weapon Control:** It has a battle management and weapon control system (BMC),
 - **Missile Fire:** It also has a missile firing unit. The BMC basically liaises between the radar and the interceptor missile.

➤ Indian Alternatives:

- S-400 TRIUMF:

ISRAEL'S IRON DOME DEFENCE SYSTEM

Mobile system to intercept rockets with range of 4-70km



● About:

- India has **S-400 TRIUMF**, which also caters to the three threats (rockets, missiles and cruise missiles). But they have **much longer range**.

- It has a much **larger air defence bubble** to knock off threats.

- It is a mobile, surface-to-air missile system (SAM) designed by Russia.

● Range & Effectiveness:

- The system can **engage all types of aerial targets** within the **range of 400km**, at an **altitude of up to 30km**.
- The system can **track 100 airborne targets** and engage six of them simultaneously.

○ Prithvi Air Defence and Advance Air Defence:

● About:

- It is a **double-tiered system** consisting of two land and sea-based interceptor missiles, namely the **Prithvi Air Defence (PAD)** missile for high altitude interception, and the **Advanced Air Defence (AAD)** Missile for lower altitude interception.

● Range:

- It is able to **intercept any incoming missile** launched **5,000 kilometres away**. The system also **includes an overlapping network of early warning and tracking radars**, as well as command and control posts.

○ Ashwin Advanced Air Defence Interceptor Missile:

● About:

- It is also an indigenously produced Advanced Air Defence (AAD) interceptor missile developed by **Defence Research and Development Organisation (DRDO)**.

- It is the advanced version of the low altitude supersonic ballistic interceptor missile.
- The missile also has its own mobile launcher, secure data link for interception, independent tracking and homing capabilities and sophisticated radars.

● Range:

- It uses an endo-spheric (within the Earth's atmosphere) interceptor that knocks out ballistic missiles at a **maximum altitude of 60,000 to 100,000 feet**, and across a range between **90 and 125 miles**.

Note:



Miscellaneous

Highlights

- Hakkipikki Tribe of Karnataka
- Dahla Dam
- National Technology Day

Hakkipikki Tribe of Karnataka

Why in News

Recently, some people of the Hakkipikki Tribe survived **Covid-19** in **Karnataka**.

Key Points

- **About:**
 - The Hakkipikki tribes are **semi nomadic** tribal people, have **four clans** namely the **Gujrathioa, Kaliwala, Mewara and Panwara**.
 - They speak many **south Indian languages** such as **Kannada, Tamil, Telugu and Malayalam** along with **Vagribooli** which is similar to **Gujarati**.
 - The Hakkipikki, meaning “bird catchers” in Kannada.
 - It is a **Scheduled Tribe** in Karnataka.
- **Origin and History:**
 - The origin of Hakkipikki tribal communities has a rich history and is said to be an ancestral relation with the legendary **Ranapratap Singh**.
 - The Hakkipikki tribal community are a **Kshatriya or warrior tribal community** who had to migrate to southern India after their defeat with Mughal kings.

Dahla Dam

Why in News

Recently, the **Taliban** has captured Afghanistan's second-biggest dam - Dahla Dam.

Key Points

- **Dahla Dam:**
 - It is also known as Arghandab Dam.



- It is located in the **Shah Wali Kot District of Kandahar Province, Afghanistan**.
 - It was constructed in **1952** by the USA.
 - It is built on the **Arghandab River**.
- **Dams built by India in Afghanistan:**
 - Pact for Construction of **Shahtoot Dam** on Kabul River.
 - **Afghanistan-India Friendship Dam** (Salma Dam).

National Technology Day

Why in News

India observes its **National Technology Day** on 11th May every year.

Key Points

- **About:**
 - The day, which was **first observed on 11th May, 1999**, aims to commemorate the scientific and technological achievements of Indian scientists, engineers.

Note:

- The day was named by the former Prime Minister **Atal Bihari Vajpayee**.
- Every year, the **Technology Development Board of India** celebrates the day by awarding individuals with the **National Award** for their contribution to science and technology in India.
 - **Technology Development Board** is a statutory body of Government of India functioning under the **Department of Science of Technology**.
 - It provides financial assistance to Indian industrial concerns and other agencies, for commercialization of indigenized technologies or adaptation of imported technologies for wider domestic applications.

➤ **2021 Theme:**

- Science and Technology for a Sustainable Future.

➤ **Significance:**

- It is the day India successfully tested nuclear bombs in Pokhran on 11th May, 1998.
- India successfully test-fired its **Shakti-1** nuclear missile in an operation called **Pokhran-II**, also codenamed as **Operation Shakti** which was led by late president **Dr APJ Abdul Kalam**.
- The nuclear missile was tested at the Indian Army's Pokhran Test Range in Rajasthan. This was the second test which was conducted after Pokhran-I codenamed **Operation Smiling Buddha**, in May 1974.
- On the same day, India performed a successful test firing of the **Trishul Missile (surface to air short range missile)** and had test flown the first indigenous aircraft – ‘Hansa – 3’.



Note:

Key Points**Details**

Summary

Key Points**Details**

Summary