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Polity and Governance

Highlights

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NHRC's Notice to Government on Migrant Deaths

Why in News

The **National Human Rights Commission (NHRC)** has issued notices to the **Union Home Ministry, the Railway Board and the Bihar and Gujarat governments** in connection with the reported deaths of some migrant workers on Shramik Special trains and the lack of food and water for the passengers on these trains.

Key Points

- The government had **started Shramik Special trains from 1st May, 2020** to ferry migrant workers back to their home States after they were stranded in different parts of the country due the **Covid-19** induced lockdown
 - Most of these poor migrants were daily wage workers who lost their work and livelihood as businesses and establishments shut down. In the absence of money and jobs, and bereft of any food, savings, or shelter in large cities, they started moving back to their villages.
- The **NHRC took suo motu (on its own) cognisance of media reports** about the trains not only starting late, but also taking many more days to reach their destinations.
 - Many migrant labourers lost their lives during their journey due to the longer duration and

the absence of arrangements for drinking water and food.

- The Commission observed that the contents of the media reports, if true, amount to **gross violation of human rights**. The State has failed to protect the lives of the poor labourers on board the trains.
- The NHRC has issued notices to the Chief Secretaries of Bihar and Gujarat governments, the chairman of the Railway Board and the Union Home Secretary, **seeking their reports within four weeks**.
- Also, recently, **the Supreme Court directed that the State from** where workers started their journey and the State where they were headed should pool their travel expenses between them.
 - During the train journey, railways would be in charge of providing migrant workers drinking water and meals. In case of bus journeys, the State where they started from had to take care of their food and water.

Way Forward

- The Centre **does not seem to have a nationwide action plan** to tally the exact number of labourers stranded in various parts of the country. The government should work with the grass roots administrative mechanism, including the district and panchayats, to create lists accurately identifying the stranded workers.
- Preparing a **comprehensive database of the migrant workers' source** and destination, demography, employment patterns and skill sets.

Note:



National Human Rights Commission

- **Statutory Body:** NHRC was established on **12th October, 1993**. The statute under which it is established is the Protection of Human Rights Act (PHRA), 1993 as amended by the Protection of Human Rights (Amendment) Act, 2006.
 - The **PHRA Act** also provides for the creation of a State Human Rights Commission at the state level.
 - **In Line with Paris Principles:** Paris Principles were adopted for the promotion and protection of human rights in October 1991, and were endorsed by the General Assembly of the United Nations in 1993.
 - **Watchdog of Human Rights in the Country:** The NHRC is an embodiment of India's concern for the promotion and protection of human rights.
 - **Section 2(1)(d) of the PHRA** defines Human Rights as the rights relating to life, liberty, equality and dignity of the individual guaranteed by the Constitution or embodied in the International Covenants and enforceable by courts in India.
 - **Composition:** The commission is a **multi-member body** consisting of a **chairman and five members**. The chairperson should be a retired chief justice of India or a judge of the Supreme Court.
 - **Appointment:** The chairman and members are appointed by the President on the recommendations of a six-member committee consisting of the Prime Minister as its head, the Speaker of the Lok Sabha, the Deputy Chairman of the Rajya Sabha, leaders of the Opposition in both the Houses of Parliament and the Union Home Minister.
 - **Tenure:** The chairman and members hold office for a term of three years or until they attain the age of 70 years, whichever is earlier.
 - The President can remove the chairman or any member from the office under some circumstances.
- It will help in **skill development**, providing social security benefits, planning for mass transit of migrant labour and preparing for any contingency plan in emergency situations.
 - Migrant workers related issues have complex Centre-State and inter-State dimensions. There is a need to empower the **Inter-State Council**, set up under Article 263 of the Constitution to effectively and comprehensively deal with larger issues related to migrant workers.

Domicile Certificates in J&K

Why in News

Recently, the Jammu and Kashmir administration notified the J&K Grant of Domicile Certificate (Procedure) Rules 2020.

- It **amended the rules for issuing domicile certificates** in the Union territory.
- The new rules provide a **simple time-bound and transparent procedure** for issuance of domicile certificates.

Key Points

- **J&K Grant of Domicile Certificate (Procedure) Rules 2020:**
 - It would provide the basis for issuing domicile certificates to those who meet the **conditions as stated in the Centre's gazette notification** that introduced the **domicile clause** through an **amendment to the Jammu and Kashmir Civil Services (Decentralisation and Recruitment) Act, 2010**.
 - **Domicile certificates** have now been made a **basic eligibility condition** for **appointment to any post** under the Union Territory of J&K.
 - Under the amended rules, **eligible non-locals** can also apply for the certificate. The new process will allow **West Pakistan refugees, safai karamcharis and children of women who married non-locals** to apply for jobs.
- **Domicile:**
 - Under **Jammu and Kashmir Reorganisation (Adaptation of State Laws) Order 2020**, **domicile** is defined as **any person** who has **resided for a period of 15 years in the UT of J&K** or has studied for a **period of seven years** and appeared in class **10th and 12th examination** in an educational institution located in the UT of J&K.
- **Time Stipulated under the Rules:**
 - It sets a fast track process in motion to **issue the certificates within a stipulated time of 15 days**.
 - If the application is processed within 15 days, the appellate authority will direct **tehsildars** to issue the **certificate within seven days**.
 - Any officer not able to issue the certificate within the stipulated time would be **penalised Rs 50,000**, to be recovered from his salary.

Note:

- **Eligibility:**
 - **Permanent Residents:** All Permanent Resident Certificate (PRC) holders and their children living outside J&K can apply for the certificates.
 - **Migrants:** Kashmiri migrants living in or outside J&K can get domicile certificates by producing their PRC, ration card copy, voter card or any other valid document.
 - **Government Officials:** Central government officials, All India Service officers, officials of Public Sector Undertakings, autonomous bodies of the Central Government, Public Sector Banks, Statutory bodies, Central Universities and recognised research institutes of the Central Government, who have served in the **UT of J&K for a total period of ten years**, are eligible for the certificate.

Associate Members to Delimitation Commission

Why in News

Recently, the Lok Sabha Speaker has nominated 15 MPs from **Jammu and Kashmir, Assam, Manipur, Nagaland and Arunachal Pradesh** to assist the **Delimitation Commission** in **redrawing the Lok Sabha and the Assembly constituencies** of the northeastern States and the Union Territory of Ladakh.

- The appointments were made **after the Delimitation Commission's request** to the **presiding officers of Lok Sabha and the Assemblies** to nominate associate members.

Key Points

- **Description:**
 - The government has constituted a Delimitation Commission to **redraw Lok Sabha and assembly constituencies of the Union Territory Jammu and Kashmir** and the northeastern states of Assam, Arunachal Pradesh, Manipur and Nagaland.
 - It is headed by the **former Supreme Court judge Ranjana Prakash Desai**.
- **Delimitation in Jammu and Kashmir:**
 - The Commission intends to delimit the constituencies of Jammu and Kashmir (J&K) in **accordance with the provisions of the Jammu and Kashmir Reorganisation Act (2019)**.

- According to Jammu and Kashmir Reorganisation Act, 2019, the number of seats in the Legislative Assembly are to increase with due reservations for SC and STs. It also includes few seats reserved for Pakistan occupied Jammu and Kashmir.
- The J&K experienced the **last delimitation exercise in 1995**.
- It has often been argued that the delimitation exercise was held back deliberately to ensure greater representation of Kashmir in the legislative assembly and Parliament rather than Jammu area.

➤ Delimitation in Northeastern States:

- The delimitation in Assam, Arunachal Pradesh, Manipur and Nagaland will be carried out in accordance with the provisions of the **Delimitation Act, 2002**.
- The delimitation exercise in **Assam** will be **resumed after 12 years** which was **put on hold in 2008** after situation in the state was reported not to be conducive because of **serious threat to the peace and public order**.

Delimitation Commission

➤ Establishment:

- The Delimitation Commission is **appointed** by the **President of India** and works in **collaboration with the Election Commission of India**.
- Delimitation literally means the act or process of fixing limits or boundaries of territorial constituencies in a country to represent changes in population.

➤ Constitutional Basis:

- **Article 82** provides the Parliament enacts a Delimitation Act after every Census.
 - The **Census Act (1948)** provides for the permanent scheme of conducting population Census. It is carried out in a **ten years interval**.
- **Article 170** provides division of State into territorial constituencies as per Delimitation Act after every Census.
- Once the Act enacted by the Parliament is in force, the Union government sets up a Delimitation Commission.
- The **first delimitation exercise** was carried out by the President (with the help of the Election Commission) in 1950-51.
 - The **Delimitation Commission Act** was enacted in **1952**.

Note:

➤ **Composition:**

- It is usually composed of the retired Supreme Court judge, Chief Election Commissioner and Respective State Election Commissioners.

➤ **Objectives:**

- To provide **equal representation** to equal segments of a population.
- **Fair division of geographical areas** so that one political party doesn't have an advantage over others in an election.
- To follow the principle of "**One Vote One Value**".

➤ **Functions:**

- It determines the **number and boundaries of constituencies** to make the population of all constituencies nearly equal.
- It also identifies the **seats reserved for Scheduled Castes and Scheduled Tribes**, wherever their population is relatively large.
- In case of difference of opinion among members of the Commission, the **opinion of the majority** prevails.
- The Delimitation Commission in India is a **high power body** whose orders have the force of law and **cannot be called in question before any court**.

➤ **Current Status:**

- The **42nd Amendment Act of 1976** froze the allocation of seats in the Lok Sabha to the states and the division of each State into territorial constituencies till the year 2000 at the 1971 level.
- Further, the **84th Amendment Act of 2001** extended this ban on readjustment for another **25 years (i.e., upto year 2026)**, without affecting the total number of seats based on the 1971 census.
 - The 84th Amendment Act of 2001 also empowered the government to undertake readjustment and rationalisation of territorial constituencies in the states on the basis of the **population figures of 1991 census**.
 - Later, the **87th Amendment Act of 2003** provided for the delimitation of constituencies on the **basis of the 2001 census** and not 1991 census.

Way Forward

- The appointment of associated members from the respective States will help the delimitation commission **to resolve grievances of these States** as stated above.

- The involvement of associate members from Lok Sabha and Assemblies will also help to **maintain transparency and integrity of the delimitation commission** which strives for equal representation to equal segments of the population in the country.

Hindi as Official Court Language in Haryana

Why in News

Recently, the Haryana government's decision to **enforce use of Hindi** in all **courts and tribunals** across the state has been challenged in the **Supreme Court**.

- A petition has been filed to challenge the **new Section 3A** incorporated into the Haryana Official Language (Amendment) Act, 2020.
- Petitioners argue that the amendment was made with the assumption that everyone practising law in Haryana not only knows Hindi but is also fluent in it.

Key Points

- **The Haryana Official Language (Amendment) Act, 2020:**
 - The amendment has been made to the **Haryana Official Languages Act, 1969**, by introducing a **new section 3A**, designating **Hindi as the sole official language** to be used for conducting work in all **Civil Courts** and **Criminal Courts** in Haryana subordinate to the High Court of Punjab and Haryana, all **revenue Courts** and **rent tribunals** or any other court or tribunal constituted by the State Government.
 - The amendment also states that the state government shall provide the requisite infrastructure, translators and training of staff within six months of the commencement of the amended Act.
- **Arguments against the Amendment:**
 - **Unconstitutional and Arbitrary:**
 - Imposition of Hindi as the sole official language to be used in lower courts across the State would create an unreasonable classification between Hindi and non-Hindi speaking advocates.
 - The amendment is a violation of the **fundamental right** to equality (**Article 14**), freedom to practice a profession of choice (**Article 19**), dignity and livelihood and personal liberty (**Article 21**) as guaranteed under the Constitution.

Note:

- **Use of English in the Courts:**
 - English is widely used by advocates in the subordinate judiciary and the lower courts.
 - Imposing Hindi will create problems for practising lawyers since the level of fluency and expertise needed to argue and represent a matter in Hindi is much more than a simple understanding of the language.
- **The State as an Industrial Hub:**
 - There are a significant number of lawyers who would not be able to argue their cases to the fullest in Hindi as most cases are related to industry sectors.
- **Government's Stand:**
 - The government pointed out that **Haryana was separated from the erstwhile state of Punjab in 1966 on linguistic basis** as Hindi is the predominantly spoken language in the area.
 - In 1969, Hindi was declared the official language of Haryana.
 - Also, Punjab had then introduced Punjabi in all civil courts and criminal courts.
 - Different regional languages are rapidly replacing English as a medium of instructions and of official work in the states. It is but natural that the predominant languages should secure their rightful place.
 - Hindi being the predominantly spoken language in the state of Haryana, use of the same for the purposes of working in courts and tribunals subordinate to the High Court of Punjab and Haryana has thus become a matter of practical necessity.
 - The State has argued that many times the witnesses don't know what has been recorded in his or her statement in the court if the same is recorded in English. Hence, Hindi is practically necessary.
 - In a democracy, every citizen should get **justice** quickly in his **own language** and should not remain speechless during the proceedings.
 - Earlier, many MLAs of Haryana, Advocate General and hundreds of advocates, had supported Hindi language use in the courts so that the **citizens of Haryana can understand the entire justice process in their own language** and can easily put their views before the Courts.

Hindi as an Official Language

- Hindi language is the single largest spoken language (43.63% of people in India).
- The Constituent Assembly of India **adopted Hindi** written in Devnagari Script along with English as the official language of the country **on 14th September, 1949**, under the **Article 343 (1)**.

Background

- Imposition of Hindi was contested in many non-Hindi states, especially in the southern state of Tamil Nadu. Violent protests broke out in southern India leading the then Prime Minister Jawaharlal Nehru, to **introduce the 'Official Languages Act' in 1963**, which assured the **continuation of English along with Hindi** as the official language of the Union of India.
- Anti-Hindi protests of 1965 marked an important turn in India's official language policy.
- The **'Official Languages Act'** was amended in 1967 guaranteeing the **"virtual indefinite policy of bilingualism"** for all official purposes of the Union.
- Given the linguistic diversity of India, **there is no national language** as all the states are free to decide their own official languages.

Constitutional Provisions

- Part **XVII** of the Indian Constitution deals with the official languages in **Articles 343 to 351**.
 - **Article 343 (1)** states that the Official Language of the Union government shall be Hindi in Devanagari script.
 - **Article 351** gives power to the Union Government to issue a directive for the development of the Hindi language.
 - **Article 348 (1)** provides that all proceedings in the Supreme Court and in every High court shall be in English Language until Parliament by law otherwise provides.
 - Under **Article 348 (2)**, the Governor of the State may, with the previous consent of the President, authorize the use of the Hindi language or any other language used for any official purpose of the State, in the proceedings of the High Court having its principal seat in that State provided that decrees, judgments or orders passed by such High Courts shall be in English.
- The Hindi language is one of the 22 languages of the **Eighth Schedule** of the Constitution of India.

Note:

Way Forward

- There is a need for wide consultation and formation of committees, regarding the use of languages in the states especially in relation to the judiciary. So that the justice system does not get delayed due to the medium and use of languages.
- The provision of use of Hindi can be supplemented with the use of English as well. The provision of optional use of Hindi in proceedings has already been made in the High Courts of **Rajasthan, Uttar Pradesh, Madhya Pradesh and Bihar.**

Misuse of Criminal Defamation Law: Madras HC

Why in News

Recently, the **Madras High Court** has held that public servants and constitutional functionaries cannot be allowed to **misuse the law of criminal defamation** by using the State as a tool to initiate defamation proceedings against adversaries.

Key Points

- **Quashed Cases:**
 - The HC **quashed criminal defamation proceedings** launched by the **Madras state government against a host of media houses and journalists**, during Jayalithaa's tenure as Chief Minister in 2012 and 2013.
 - It was cleared out that the publications in the newspapers were **factual news** and the **quoted statements** of the politicians.
 - There was **no criminal defamation** in the case as the newspapers had not made any personal imputation against anyone.
 - However, some media houses **can be prosecuted** by the aggrieved, in their **individual capacity**, before a **Judicial Magistrate** under **Section 199 (6) of Code of Criminal Procedure** but **not before a Sessions Court** since no defamation against the State had been made out.
- **Observations of the Judgement:**
 - **For States:**
 - They cannot use criminal defamation cases to throttle democracy.

- Public servants and constitutional functionaries **must be able to face criticism** since they owed a solemn duty to the people.
- States should **act as a parent of all its citizens** when it comes to the invocation of the law of defamation and **laws cannot be misused** by **using the State as a tool** to settle personal adversaries.
- An individual or a public servant/constitutional functionary can be impulsive but not the **State which will have to show utmost restraint and maturity** in filing criminal defamation cases.
- **For Public Prosecutors:**
 - They should **apply their mind independently** before filing criminal defamation cases on behalf of the State and launching prosecutions.
 - They should **not exhibit blind eagerness to grasp a conviction** and should conduct a case with utmost fairness.
- **For Trial Courts:**
 - They should **rely on materials available on record** and issue summons to the accused only if they were satisfied that the ingredients required for taking cognisance of a criminal defamation complaint against the State had been made out.
- **For Newspapers and Media Houses:**
 - The role of a newspaper is **only to publish news as it had happened.**
 - If political personalities or constitutional functionaries disagree with the information provided, they **can refute** the allegations by a counter-press statement.

Defamation

- In India, **defamation** can both be a **civil wrong** and a **criminal offence.**
 - The **difference** between the two lies in the **objects they seek to achieve.**
 - A civil wrong tends to provide for a **redressal of wrongs by awarding compensation** and a criminal law seeks to **punish a wrongdoer and send a message** to others not to commit such acts.
- In Indian laws, **criminal defamation** has been specifically defined as an offence under the **section 499 of the Indian Penal Code (IPC)** whereas the **civil defamation is based on tort law** (an area of law which does not

Note:

rely on statutes to define wrongs but takes from ever-increasing body of case laws to define what would constitute a wrong).

- Section 499 states defamation could be **through words**, spoken or intended to be read, **through signs**, and also **through visible representations**.
 - These can either be published or spoken about a person with the intention of damaging the reputation of that person, or with the knowledge or reason to believe that the imputation will harm his reputation.
- **Section 499 also cites exceptions**. These include “**imputation of truth**” which is required for the “public good” and thus has to be published, on the public conduct of government officials, the conduct of any person touching any public question and merits of the public performance.
- **Section 500 of IPC**, which is on **punishment for defamation**, reads, “Whoever defames another shall be punished with simple imprisonment for a term which may extend to two years, or with fine, or with both.”
- Moreover, in a **criminal case**, defamation has to be **established beyond reasonable doubt** but in a **civil defamation suit**, damages can be awarded **based on probabilities**.
- The **Supreme Court of India**, in the *Subramanian Swamy vs Union of India, 2014*, upheld the **constitutional validity** of the criminal defamation law.

Antitrust Case Against Google

Why in News

Recently, the **Competition Commission of India (CCI)** has started looking into **allegations against the Alphabet Inc’s Google**.

- According to the allegations, Google is abusing its market position to unfairly promote its **mobile payments app (Google Pay) in the country**.

Key Points

- The **complaint alleges the USA tech giant more prominently showcases its Google Pay app inside its Android app store** in India, giving it an unfair advantage over apps of competitors.
 - Google Pay allows users to do **digital transactions**, inter-bank fund transfers and bill payments.

- It competes with Softbank-backed Paytm and Walmart’s PhonePe, both of which are prominently used in India.
- Facebook’s WhatsApp is also planning a similar service in the near future.
- Google has not responded to the allegations yet and is expected to respond in due course.
- The **CCI can direct its investigations unit to conduct a wider probe into the allegations** or dismiss the case if it finds no merit in it. Google will appear before the CCI, which will then decide on the way forward.
- This is **Google’s third major antitrust challenge** in India.
 - In 2018, the **CCI fined Google \$21 million for ‘search bias’**.
 - It was alleged that Google was indulging in abuse of a dominant position in the market for online search through practices leading to search bias and search manipulation, among others.
 - In 2019, the **CCI started probing Google** for allegedly misusing its dominant position to reduce the ability of smartphone manufacturers to opt for alternate versions of its Android mobile operating system.

Antitrust Law

- Antitrust law, also referred to as Competition law, aims to protect trade and commerce from unfair restraints, monopolies and price-fixing.
- It ensures that fair competition exists in an open-market economy.
- The Competition Act, 2002 is India’s antitrust law. It repealed and replaced the Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act) on the recommendations of the Raghavan committee.

The Competition Act, 2002

- It was passed in 2002 and was amended by the Competition (Amendment) Act, 2007. It follows the philosophy of modern competition laws.
- The Act prohibits anti-competitive agreements, abuse of dominant position by enterprises and regulates combinations, which causes or likely to cause an appreciable adverse effect on competition within India.
- In accordance with the provisions of the Amendment Act, the Competition Commission of India and the **Competition Appellate Tribunal (COMPAT)** were established.

Note:



- The government replaced COMPAT with the **National Company Law Appellate Tribunal (NCLAT)** in 2017.

Competition Commission of India

- It is a **statutory body** responsible for enforcing the objectives of the **Competition Act, 2002**.
- **Composition:** A Chairperson and 6 Members appointed by the Central Government.
- **Objectives:**
 - To eliminate practices having adverse effects on competition.
 - Promote and sustain competition.
 - Protect the interests of consumers.
 - Ensure freedom of trade in the markets of India.
- The Commission is also required to give an opinion on competition issues on a reference received from a statutory authority established under any law and to undertake competition advocacy, create public awareness and impart training on competition issues.

Social Protection Response Programme

Why in News

Recently, the **World Bank** has approved **USD 1 billion** for accelerating India's **Covid-19 Social Protection Response Programme**.

- With this announcement, **commitment from the World Bank** towards emergency Covid-19 response in India has reached to **USD 2 billion**.
- Earlier, a **USD 1 billion support** was announced in April to support **India's health sector**.

Key Points

- **Social Protection Response Programme:**
 - It is pivoted towards **migrants, unorganised workers, informal sector**, and creating an **integration of the existing infrastructure of safety nets like the Public distribution system, Jan Dhan, Aadhar & mobile**.
 - It will expand the coverage of India's social protection system by helping **vulnerable groups access to more social benefits directly and across the country**.

- **Geographic portability** would be introduced to ensure that social protection benefits could be accessed from anywhere in the country, providing relief to inter-State migrant workers.

- It will support the Government of India's efforts towards a **more consolidated delivery platform** accessible to both rural and urban populations across state boundaries.
- Such a system will also **strengthen India's federalism** by enabling and supporting states to respond quickly and effectively.
- **Phased Implementation:** This new support will be funded and operated in two phases:
 - Immediate allocation of **\$750 million** for the fiscal year 2020.
 - A **\$250 million** second tranche that will be made available for the fiscal year 2021.
- **First Phase:** It will be implemented countrywide through the **Pradhan Mantri Garib Kalyan Yojana (PMGKY)** to benefit vulnerable groups, particularly migrants and informal workers.
- **Second phase:** It would deepen the social protection package, whereby additional cash and in-kind benefits based on local needs will be extended through state governments and portable social protection delivery systems.

Need

- Unprecedented **introduction of social distancing and lock downs** due to Covid-19, to slow down the spread of the virus, have impacted economies and jobs especially in the informal sector.
- **Over 90% of India's workforce** is employed in the **informal sector**, without access to significant savings or workplace based social protection benefits such as **paid sick leave or social insurance**.
- **Over 9 million migrants**, who cross state borders to work each year, are also at greater risk as social assistance programmes in India largely provide benefits to residents.
- In an urbanising India, **cities and towns need targeted support** as its social protection programmes are focused on rural populations.
- **Social protection is critical** when **half of India's population earns less than \$3 a day** and are close to the poverty line.

Note:

National Migrant Information System

Why in News

Recently, the **National Disaster Management Authority (NDMA)** has developed an online dashboard called '**National Migrant Information System (NMIS)**'.

Key Points

- The online portal (NMIS) would maintain a central repository of migrant workers and help in speedy inter-state communication to facilitate the smooth movement of migrant workers to their native places.
- The key data pertaining to the persons migrating has been standardized for uploading such as name, age, mobile no., originating and destination district, date of travel etc.
- States will be able to visualize how many people are going out from where and how many are reaching their destination States.
- It has additional advantages like contact tracing, which may be useful in overall Covid-19 response work.
 - Contact tracing is the process of identification of persons who may have come into contact with an infected person and subsequent collection of further information about these contacts.

National Disaster Management Authority

- The National Disaster Management Authority (NDMA) is the apex **statutory body for disaster management in India**.
- It was constituted in accordance with the **Disaster Management Act, 2005** with the **Prime Minister** as its **Chairperson** and nine other members, and one such member to be designated as Vice-Chairperson.
- Its primary purpose is to coordinate response to natural or man-made disasters and for capacity-building in disaster resiliency and crisis response.
 - It is also the apex body to lay down policies, plans and guidelines for Disaster Management to ensure timely and effective response to disasters.

Star Rating of Garbage Free Cities

Why in News

Recently, the **Ministry of Housing & Urban Affairs (MOHUA)** has announced the results of the Star Rating of Garbage Free Cities for the assessment year 2019-2020.

- A total of **six cities** have been certified as **5-Star**, **65 cities as 3-Star** and **70 cities as 1-Star**.
- The 5-Star cities include **Ambikapur (Chhattisgarh), Surat and Rajkot (Gujarat), Indore (Madhya Pradesh) and Navi Mumbai (Maharashtra)**.

Key Points

- **Aim:**
 - The Star Rating Protocol was launched by the Ministry in 2018 to institutionalize a mechanism for cities to achieve Garbage Free status, and to motivate cities to achieve higher degrees of sustainable cleanliness.
 - It is one of the various initiatives which intends to make **Swachh Bharat Mission-Urban (SBM-U)** as a successful project.
- **Basis:**
 - It is based on 12 parameters which follow a **SMART framework** – Single metric, Measurable, Achievable, Rigorous verification mechanism and Targeted towards outcomes.
 - It is a comprehensive framework that assesses cities across 24 different components of **Solid Waste Management (SWM)** and is graded based on overall marks received.
- **Procedure:**
 - The Star Rating is supported by self-assessment and self-verification for achieving a certain star rating. It also ensures the involvement of citizen groups for a transparent system of self-declaration.
 - Further, the self-declaration is further verified through an independent third party agency appointed by MoHUA.
- **Significance:**
 - The performance of cities under the Star Rating Protocol is crucial as it carries significant weightage for their final assessment in **Swachh Survekshan**.

Note:

- Swachh Survekshan is the **annual urban cleanliness survey** conducted by the government.
- It also ensures certain **minimum standards of sanitation** through a set of prerequisites defined in the framework.
- Since the rating is conducted at a city level, it makes the process easier to implement and helps the cities incrementally improve their overall cleanliness.
- The rating protocol is an **outcome-based tool** that helps MoHUA and other stakeholders to evaluate cities on the basis of this single rating.

Pradhan Mantri Vaya Vandana Yojana Extended

Why in News

The Union Cabinet has extended **Pradhan Mantri Vaya Vandana Yojana (PMVVY)** for a period of three years. This social security scheme for senior citizens will **now be valid till March 2023**.

- Earlier, the scheme was open till 31st March, 2020.
- Initially an **assured rate of return of 7.40% per annum** for the year 2020-21 per annum will be provided and thereafter to be reset every year in line with the Senior Citizen Savings Scheme (SCSS).
- The **Finance Minister will approve an annual reset rate of return at the beginning of every financial year**.

Key Points

- The **Pradhan Mantri Vaya Vandana Yojana** was **launched in 2017 by the Ministry of Finance** to offer a guaranteed payout of pension to senior citizens every month.
- The Scheme can be purchased offline as well as online through the **Life Insurance Corporation (LIC)** which has been given the sole privilege to operate this scheme.
- **Eligibility:**
 - Minimum Entry Age: 60 years (completed).
 - Maximum Entry Age: No limit.
- **Components:**
 - One can **invest a maximum amount of Rs 15 lakh** under PMVVY scheme. The tenure of policy is set at 10 years.
 - Senior citizens can draw a **minimum pension of Rs 1,000 per month** depending on the amount

invested in the scheme. The **maximum pension amount is limited at Rs 10,000 per month**.

- Pension will be payable as per the frequency of monthly, quarterly, half-yearly, yearly as chosen by the pensioner at the time of purchase.
- **Aadhar has been made mandatory** to avail the benefit of the scheme.
- **Role of the Government:**
 - The Government's financial liability is limited to the extent of the difference between the market return generated by LIC and the assured rate of return (7.4% for 2020-21).
 - The **pension is based on the assured rate of return**.
 - This protects elderly persons aged 60 years and above against a future fall in their interest income due to uncertain market conditions.
- **Other Benefits:**
 - Loan upto 75% of Purchase Price shall be allowed after 3 policy years.
 - The scheme is **exempted from Goods & Services Tax (GST)**.

Rajiv Gandhi Kisan Nyay Yojana

Why in News

Chhattisgarh is set to launch the Rajiv Gandhi Kisan Nyay Yojana **to encourage farmers to produce more crops** and help them get the right price.

- The scheme will formally be launched in the state on May 21, the death anniversary of former prime minister Rajiv Gandhi.

Key Points

- Under the scheme, based on registered area and area under cultivation during **Kharif crop season 2019, Rs. 10,000 per acre** will be deposited in the bank accounts of farmers as agriculture assistance grant for sowing crops such as paddy, maize and sugarcane.
- According to the government, at least **19 lakh farmers** will benefit from the scheme, for which the state government had allocated Rs 5,756 crore in the budget 2020-21.
- The money will be given to the farmers in **four instalments**.

Note:

TRAI Recommends New Numbering Plan

Why in News

Recently, the **Telecom Regulatory Authority of India (TRAI)** has given few recommendations for the development of the **new National Numbering Plan for the fixed as well as mobile telecommunication services** in the country to ensure availability of the **uniquely identifiable numbers to every subscriber in India**.

Background

➤ Current Scenario:

- Currently, the Department of Telecommunications (DoT) administers the numbers for **fixed and the mobile networks** on the basis of the **National Numbering Plan (NNP), 2003**.
 - NNP (2003) provides a set of rules and guidelines for the use and assignment of numbers to telephone services delivered over the public networks.
 - It also describes the assignment of numbers to international services, trunk service, emergency services and special services such as voicemail and Intelligent Network (IN) services.
- Thus, the **management of numbering resources** is governed by the NNP.
- NNP is based on the **International Telecommunication Union's (ITU)** standardization sector recommendations.

➤ Challenges:

- The availability of numbering resources is threatened due to an **increase in the range of services and massive growth** in the **number of connections**, especially in the mobile segment.
 - The total number of telephone subscribers in India stands at **1,177.02 million** with a **tele-density of 87.45%** at the end of January 2020.
 - Telephone density or teledensity is the number of telephone connections for every hundred individuals living within an area.

Key Points

➤ Recommendations:

- **Switching to a 11-digit mobile number** instead of existing 10-digit mobile number.

- **Reallocation** of mobile numbering resources **surrendered by operators** who have closed the telecommunication business.
 - **Prefixing zero** for all mobile calls made from a fixed line to create **sufficient numbering space**.
 - The numbering space includes numbers that cannot be preceded by a prefix.
 - All the SIM-based M2M (Machine to Machine) connections using 10-digit mobile numbering series to be **shifted to the 13-digit numbering series** allocated by DoT.
 - Machine-to-Machine SIM (or M2M SIM) refers to technologies that enable devices and sensors to communicate with one other, along with other Internet-enabled devices and systems. It is used for receiving and sending data.
 - **Enlistment of all newly allocated numbering resources** for fixed line as well as mobile services **every year**.
 - **Automated allocation of numbering resources** using number management system software to speed up the process of allocation in an efficient and transparent manner.
- #### ➤ Possible Future Challenges:
- The migration to 11 digits mobile numbers would require **modifications in the configuration of switches** involving cost.
 - It would also cause **inconvenience to the customers** in the form of dialing extra digits and updating phone memory.
 - It may lead to **more dialing errors, infructuous traffic**, and subsequently **loss of revenue** to the Telecom Service Providers (TSP).
 - Further, the telephone numbers are also associated with the **digital identity of individuals**, and, hence, changes will be required in the databases of all services requiring telephone numbers for identity like financial banking services, e-commerce, and government welfare schemes.

Way Forward

- The mobile users in the country has increased massively due to **increasing digitisation**. This increasing digitisation would pave the way towards the **dream of digital India and mobile economy**.
- Thus, it has become necessary to **review the utilisation of the numbering resources** in the country.

Note:



Considering the above scenario the implementation of the TRAI's recommendation with solutions to possible issues would help for **sustainable growth of the telecommunication services.**

CoAST India

Why in News

Recently, India Observatory has come up with a **Geographic Information System (GIS)-enabled dashboard** called **Collaboration/Covid Action Support Group (CoAST India)** to monitor the movements of migrants.

Key Points

- The CoAST India dashboard includes an **India map**, which **reflects the movement of migrants in real time**, often on foot, **along with facilities and relief organisations on their routes.**
- It **draws information from 55 organisations** on the ground, mostly in villages.
- The dashboard **aims to make such data available to governments and small local civil society groups** to be used for planning and providing assistance to migrants.
- The dashboard has been made in collaboration with **Foundation for Ecological Security (FES).**
- India Observatory was set up in December 2019, with FES. It focused on ecological issues about forests, water bodies, conservation, etc.
 - However, after **Covid-19** broke out, it has decided to focus on the movements of people.
- The National Disaster Management Authority has also developed '**National Migrant Information System (NMIS)**' to maintain a central repository of migrant workers.

Geographic Information System

- A GIS is a **computer system for capturing, storing,**

checking, and displaying data related to positions on Earth's surface.

- By relating seemingly unrelated data, GIS can help individuals and organizations better understand spatial patterns and relationships.
- GIS can use **any information that includes location.** The location can be expressed in many different ways, such as latitude and longitude, address, or ZIP code.
- GIS can include **data about people, such as population, income, or education level.**
 - It can also include **information about the sites of factories, farms, and schools, or storm drains, roads, and electric power lines etc.**

India Observatory

- It is **India's first socio, economic and ecological open-source** integrated Geospatial data platform.
- The observatory is **designed to supplement local level decision** making by village communities, Panchayats, NGOs and government officials.
- It has the '**India Data Platform**' at its core, which is built on open source and brings together data on over 1,600 parameters, ranging from village to national level in the form of maps, graphs, tables and infographics.
- It is freely available for civil society organizations, students, government departments and citizens.

Foundation for Ecological Security

- The Foundation for Ecological Security (FES) is a registered **non-profit organisation** based in Anand, Gujarat.
- It works towards the **ecological restoration and conservation of land and water resources** in ecologically fragile, degraded and marginalised regions of the country.
- It works with the concentrated and collective efforts of village communities.



Note:



drishti

Economic Scenario

Highlights

- *RBI Cuts Repo Rate*
- *22nd Meeting of FSDC*
- *Rise in Foreign Direct Investment*
- *Steps to Boost Ease of Doing Business*
- *GDP Decreases to 11-year Low*
- *Banks Board Bureau*
- *MSMEs Loans to Get 'Risk-Free' Tag*
- *ReStart Programme for MSMEs*
- *Relaxation for Limited Category of OCl's*
- *States' Share in PMMSY and FME*

RBI Cuts Repo Rate

Why in News

The **Reserve Bank of India** has **extended the moratorium on loan repayments by three more months** in view of **Covid-19**. Further, a **40 basis points (bps) cut to both the repo and reverse repo rates** has been announced.

- The decision has been taken by the **RBI's Monetary Policy Committee** which met ahead of its scheduled meeting in early June.
- The latest moves are expected to ease the financial burden on businesses due to the extended lockdown.

Key Points

- **Repo Rate and Reverse Repo Rate:**
 - **Decision:** The **repo rate** is presently at **4%**, while the **reverse repo rate** stands at **3.35%**.
 - **Impact:** This will make funds cheaper for banks, thus aiding them to bring down loan lending rates. **Repo rate** is the rate at which a country's central bank (RBI) lends money to commercial banks.
 - The cut in reverse repo rate will prompt banks to lend more rather than keeping their funds with the RBI. **Reverse repo** rate is the rate at which the central bank of a country borrows money from commercial banks within the country.
- **Extension of Moratorium on Loan Repayments by Another 3 Months:**
 - **Decision:** The lending institutions have been permitted to extend the moratorium (suspension)

on term loan instalments by **another three months**, i.e., from 1st June, 2020 to 31st August, 2020.

- A **term loan** is a loan from a bank for a specific amount that has a specified repayment schedule and either a fixed or floating interest rate.
- **Impact:** This is expected to help borrowers, especially companies, which have halted production and are facing cash flow problems, to get more time to restart their units.
- Earlier, the **RBI announced the moratorium for a three-month period**, 1st March to 25th May 2020.
- **All Conditions Unchanged:** All conditions related to the extension remain unchanged, that is, the loan will not be classified by the lender as a '**non-performing asset**' and there will not be any impact on the creditworthiness of any individual/firm.
 - A **Non Performing Asset (NPA)** is a loan or advance for which the principal or interest payment remained overdue for a period of 90 days.
- **Conversion of Interest Charges into a Term Loan:**
 - The RBI has allowed borrowers and banks to convert the interest charges during the moratorium period (from 1st March to 31st August) into a term loan which can be repaid by March 2021.
 - This is expected to reduce the burden on borrowers who have gone for moratorium.
- **Group Exposure Limit Raised:**
 - The group exposure limit of banks has been **increased from 25% to 30% of the capital base** for a temporary period till 30th June, 2021.
 - Group exposure limit determines the maximum amount a bank can lend to one business house.

Note:



Under the existing guidelines on the Large Exposures Framework, the exposure of a bank to a group of connected counterparties should not be higher than 25% of its capital base.

- The decision was taken to facilitate flow of resources to the companies as many of them were unable to raise funds from capital markets and are predominantly dependent on funding from banks.
- **For Boosting Foreign Trade:**
 - **A Rs.15,000 crore line of credit for a period of 90 days would be extended to the Exim Bank** to boost the foreign trade. Export-Import (Exim) Bank is the premier export finance institution of the country.
 - The **maximum permissible period of pre-shipment and post-shipment export credit sanctioned by banks has been increased from the existing one year to 15 months** (for loan disbursements made up to 31st July, 2020).
 - This was done to help exporters support their production and realisation cycles. Simply put, any exporter who has taken credit from a bank can repay it in 15 months instead of one year.
- **Views on GDP and Inflation:**
 - The **RBI refrained from providing a Gross Domestic Product (GDP)** growth forecast for the year, or likely trajectory for inflation.
 - GDP growth will **slip into negative territory** this year, blaming it on the collapse in demand due to a fall in private consumption following the Covid-19 lockdown.
 - The central bank has, however, pointed to the likelihood of **some pick-up in growth impulses beginning the second half of 2020-21.**

Criticism

- Some believe that the latest cut **may be no more than a sentiment booster** as economic activity is at its nadir (worst) and there are not many investment proposals that may benefit from the lower interest rate. Existing borrowers may be the only beneficiaries of the rate cut at this point in time.
- The smaller **Non-Banking Financial Companies (NBFCs) and corporates** may remain stressed, despite liquidity being provided.
- Bankers **expect a spurt in Non-Performing Assets** down the road as nearly six months of non-payment of debt would likely affect credit culture.

- RBI **did not permit a one time restructuring of existing loans** to the seriously affected sectors such as real estate, hotels etc. as demanded by banks.

Way Forward

- The stress in the economy will continue. The government can provide subvention on existing loans.
- The banks are unwilling to take risks in the current scenario. Thus, there is a need to remove risk averseness in the financial system.

22nd Meeting of FSDC

Why in News

Recently, the **22nd meeting** of the **Financial Stability and Development Council (FSDC)** chaired by the Finance Minister was held through a video conference.

- The meeting reviewed issues relating to market volatility, domestic resource mobilisation and capital flows in the country in the wake of **Covid-19 pandemic** and the **nation-wide lockdown** imposed to contain it.

Financial Stability and Development Council

➤ Establishment:

- The Financial Stability and Development Council (FSDC) is a **non-statutory apex council under the Ministry of Finance** constituted by the Executive Order in 2010.
- The **Raghuram Rajan committee (2008)** on financial sector reforms first proposed the creation of FSDC.

➤ Composition:

- It is chaired by the **Finance Minister** and its members include the heads of all Financial Sector Regulators (RBI, SEBI, PFRDA & IRDA), Finance Secretary, Secretary of Department of Economic Affairs (DEA), Secretary of Department of Financial Services (DFS), and Chief Economic Adviser.
 - In 2018, the government reconstituted FSDC to include the Minister of State responsible for the Department of Economic Affairs (DEA), Secretary of Department of Electronics and Information Technology, Chairperson of the **Insolvency and Bankruptcy Board of India (IBBI)** and the Revenue Secretary.

Note:

- FSDC sub-committee is headed by the Governor of RBI.
- The Council can invite experts to its meeting if required.

➤ Functions:

- The objective of **FSDC is to strengthen and institutionalize** the mechanism for maintaining financial stability, enhancing inter-regulatory coordination and promoting financial sector development.
- It also **intends to monitor macro-prudential supervision** of the economy. It will assess the functioning of the large financial conglomerates.

Key Points

➤ Covid-19 as a Threat to Global Economy:

- The Council has noted that the **Covid-19 pandemic poses a serious threat to the stability of the global financial system**, as the ultimate impact of the crisis and the timing of recovery remains uncertain.
- The pandemic has thrown the global economy into its worst recession since the Great Depression in the 1930s, and India is no exception.

➤ Projected Domestic Economic Growth:

- Domestic economic growth is expected to contract for the first time in forty years in FY21 (April 2020 to March 2021).
- Crisil, Goldman Sachs and Fitch Ratings have projected the Indian economy to contract 5% during the current financial year.

➤ Announced Measures and its Impact:

- The Council quoted the various short term **fiscal measures taken by the government** and **monetary measures taken by the Reserve Bank of India (RBI)** to address the liquidity and capital requirements of the financial institutions to manage the economic scenario due to global pandemic.
- It also reviewed the liquidity and solvency position of the **Non-Banking Financial Companies (NBFCs)**, **housing finance companies** and **micro-finance institutions**.
- Moratoriums on loan payments due to pandemic induced lockdowns have put a pressure on inflows of these companies while banks have turned resistant to lend them in the wake of possible defaults. NBFCs have also sought moratorium on their dues to banks.

➤ Role of Government and Regulators:

- It **highlighted the need for the government** and regulators to remain vigilant on financial conditions that could expose systemic vulnerabilities in the medium and long-term.
- The Council stressed that the government and regulators would continue to provide liquidity and capital support to domestic financial institutions.
 - It is expected to provide comfort to the markets, which are disturbed by the extreme volatility due to pandemic.

Way Forward

- The **financial system resilience, fiscal support, regulatory flexibility and liquidity** provision announced till date have ensured that the financial system is supportive of economic recovery but more protracted slowdown may present new risks to the financial system.
- There is a possibility that the current crisis may **transform from a “liquidity phase” into a “solvency phase”**. Thus, governments need to consider a range of policy tools, including efficient bankruptcy and restructuring systems, government guarantees for private investments, programmes for sector-specific government equity injections, and establishing asset management companies.
- Thus, **FSDC is expected to take further appropriate measures to bolster the liquidity and capital base of domestic financial institutions** which would stabilize financial sectors for long term.

Rise in Foreign Direct Investment

Why in News

According to data released by the **Department for Promotion of Industry and Internal Trade (DPIIT)**, total **Foreign Direct Investment (FDI)** in India increased by **18% to \$73.46 billion** in the 2019-20 financial year.

- DPIIT is under the Ministry of Commerce and Industry.

Key Points

- Total FDI has **doubled** from the year **2013-14** when it was only \$36 billion.
- The total investment by Foreign Institutional Investors was \$247 million.

Note:



- The sectors that attracted the most foreign inflows during 2019-20 included **services, computer software and hardware, telecommunications, trading and automobiles**.
- Singapore emerged as the largest equity FDI source, contributing to inflows of \$14.67.
- The inflows have been attributed to the government's **Make in India** programme.

Foreign Direct Investment

- FDI is an investment made by a firm or individual in one country into business interests located in another country.
- Generally, FDI takes place when an investor establishes foreign business operations or acquires foreign business assets, including establishing ownership or controlling interest in a foreign company.
- It is different from Foreign Portfolio Investment where the foreign entity merely buys equity shares of a company. FPI does not provide the investor with control over the business.
- **Routes through which India gets FDI:**
 - Automatic Route: In this, the foreign entity does not require the prior approval of the government or the RBI.
 - Government route: In this, the foreign entity has to take the approval of the government.
 - The **Foreign Investment Facilitation Portal (FIFP)** facilitates the single window clearance of applications which are through approval route.
 - This portal is administered by the Department for Promotion of Industry and Internal Trade (DPIIT).

Steps to Boost Ease of Doing Business

Why in News

Recently, the Government of India has decided to bring various amendments to **Insolvency and Bankruptcy Code (IBC) and Companies Act, 2013** to enhance ease of doing business in the country.

- The amendments to these laws are a part of the government's **economic stimulus** package announced under **Atmanirbhar Bharat Abhiyan**.

- India was placed at 63rd position in the World Bank's **ease of doing business report, 2020** out of 190 countries.

Key Points

- **Changes in Insolvency and Bankruptcy Code (IBC):**
 - Minimum threshold to initiate insolvency proceedings has been raised to Rs.1 crore (from Rs1 lakh, which largely insulates **Micro, Small and Medium Enterprises-MSMEs**).
 - Suspension of fresh initiation of insolvency proceedings up to one year, depending upon the pandemic.
 - Empowering the Central Government to exclude Covid-19 related debt from the **definition of "default"** under the IBC for the purpose of triggering insolvency proceedings.
- **Decriminalisation under Companies Act, 2013:**
 - The move seeks to remove criminal penalties from all provisions of the Companies Act, except provisions dealing with fraudulent conduct.
 - The decriminalised offences include administrative offences such as delays in filing **Corporate Social Responsibility (CSR)** reports, or failure to rectify the register of members in compliance with orders from the **National Company Law Tribunal (NCLT)**.
 - A number of offences under the Act previously classified as compoundable offences will not have imprisonment penalty now.
 - Compoundable offences are those offences that have either imprisonment or fines as punishments.
 - Some of the offences under the Act have been omitted altogether while others have been shifted from the purview of the NCLT to an in-house adjudication mechanism.
 - Under the in-house adjudication mechanism the matter will be dealt by the Registrar of Companies (RoC).
 - The RoC is empowered to decide penalties for the offences under the Act.
- **Other changes to raise funds for companies:**
 - Direct listing of securities by Indian public companies in permissible foreign jurisdictions.
 - Private companies which just want to list **Non-Convertible Debentures (NCDs)** on stock exchanges not to be regarded as listed companies.

Note:

- This will bring additional sources of funding to companies who do not wish to comply with the regulations applicable to listed companies.
- **Rationale behind the Amendment:**
 - The decriminalisation efforts are to pull back on regulations introduced in 2014 aimed at boosting corporate compliance.
 - As compliance levels have improved, the government now felt a need to boost ease of doing business and therefore, it has started to relax criminal provisions.
 - These moves will bring great relief to companies as they can focus on business revival rather than worry about defaults and compliance.
 - These measures will prove to be instrumental in easing the financial situation of firms especially, MSMEs who have been one of the biggest victims of this pandemic crisis.
 - These amendments are admirable steps towards the three-pronged goal of:
 - Reducing the burden on company courts,
 - Ensuring investor interests, and
 - Facilitating the ease of doing business.
 - This could well be the step towards showing intent to incentivize domestic and global investments, especially post Covid-19.
- **Issues involved:**
 - The move will hamper the recovery proceedings of financial institutions and lead to an increase in the non-performing asset.
 - Suspension of insolvency initiation for up to a year may protect promoters from losing control of their companies but will not prevent creditors from seeking recoveries through other means.
 - Decriminalisation of provisions in Companies Act are unrelated to Covid-19 and had been announced before the lockdown as part of previously planned reforms.

GDP Decreases to 11-year Low

Why in News

According to the provisional data released by the **National Statistical Office (NSO)**, economic growth slowed to an **11-year low of 4.2% in 2019-20**.

Key Points

- **Growth in Fiscal Year 2019-20:**
 - The provisional growth estimate for the year 2019-20 is at 4.2%.
 - The budget estimate for **Gross Domestic Product (GDP)** growth in 2019-2020 was stated at 8.5%, the NSO's previous estimates had pushed the projection down to 5%.
 - The Indian economy grew at 6.1% in 2018-19.
 - Growth rate in terms of **Gross Value Added (GVA)**, slowed to 3.9% in 2019-20 from 6% growth in the previous year.
 - GVA is GDP minus net product taxes and reflects supply-side growth.
 - The **nominal GDP growth rate**, which accounts for inflation, is estimated to have grown at 7.2% in 2019-20, sharply lower than 11% in the previous year.
- **Growth in Final Quarter of 2019-20:**
 - In the final quarter of the year, that is, January 2020 - March 2020, the growth rate of GDP fell to 3.1%. This is the lowest growth rate in the last 44 quarters.
 - Agriculture and mining sectors grew in the fourth quarter at rates of 5.9% and 5.2% respectively.
 - Public administration, defence and other services grew at 10.1%.
 - The manufacturing sector contracted to a negative growth of 1.4%.
 - The **three components of demand** have also fallen i.e. **consumption** demand has slowed, while **investments** and **exports** are both in negative territory.
- **Analysis of the Growth Data:**
 - **Nominal GDP growth:** There are two reasons why the sharp deceleration in the nominal GDP matters.
 - First, the nominal GDP growth rate is the **base of all fiscal calculations** (revenue and spending) in the country.
 - A sharp divergence in nominal GDP growth rate basically upsets all other calculations in the economy.
 - For instance, a sharp fall means the government does not get the revenues it had hoped for and, as such, it can't spend as much as it wanted to.

Note:



- Second, this substantial deceleration reflects poorly on the government's **fiscal marksmanship**.
 - In other words, it shows that the government was **not able to assess the magnitude of economic growth deceleration** that was underway.
 - Poor fiscal marksmanship, in turn, leads to inaccurate policy making because a government could end up making policies for an economy that doesn't actually exist on the ground.
- This sharp deceleration also shows the continued weakening of India's growth momentum even before it was hit by the **Covid-19** lockdown in the last week of March.
- **Negative Growth of Manufacturing:**
 - It has been argued in the past, that for India to grow and create jobs for the millions that enter its workforce each year, **manufacturing growth has to rise**.
 - But 2019 paints a dismal picture in this regard. Manufacturing contracted for three of the four quarters.

Indian manufacturing has lost its way

Quarterly GDP growth rate (in %)	Q1	Q2	Q3	Q4
Agriculturing	3	3.5	3.6	5.9
Manufacturing	3	-0.6	-0.8	-1.4
Construction	5.2	2.6	-0.4	-2.2

Source: Mospi

Key Terms

- **Gross Domestic Product (GDP):**
 - It is a **measure of economic activity in a country**. It is the total value of a country's annual output of goods and services. It gives the economic output from the consumers' side.
 - **GDP = Private consumption + Gross investment + Government investment + Government spending + (exports-imports)**
- **Gross Value Added (GVA):**
 - It is the **sum of a country's GDP and net of subsidies and taxes in the economy**. It provides the rupee value for the amount of goods and services produced in an economy after deducting the cost of inputs and raw materials that have gone into the production of those goods and services.

- **Gross Value Added = GDP + subsidies on products - taxes on products**

➤ **Nominal GDP:**

- It is **GDP evaluated at current market prices**. It includes all of the changes in market prices that have occurred during the current year due to **inflation or deflation**.
- It is **different from the Real GDP** which is calculated in a way such that **goods and services are evaluated at some constant set of prices**.

The National Statistical Office

- NSO is the **central statistical agency of the Government** mandated under the **Statistical Services Act, 1980** under the **Ministry of Statistics and Programme Implementation**.
- It is responsible for the development of arrangements for **providing statistical information services** to meet the needs of the Government and other users for information on which to base policy, planning, monitoring and management decisions.

Conclusion

- Economists have highlighted that GDP is headed for a contraction in 2020-21 due to the impact of Covid-19. Therefore, government expenditure will be the growth engine in the year 2020-21. Weak commodity prices and import demand may also provide some support to growth.

Banks Board Bureau

Why in News

- The **Banks Board Bureau (BBB)** has selected SN Rajeswari as the Chairman and Managing Director (CMD) of the Delhi-based Oriental Insurance Company (OIC).
- The Ministry of Finance will now start the process of appointing Rajeswari as the CMD of OIC.
- This will be followed by the Finance Ministry's nod and a further approval from the **Appointments Committee of the Cabinet** and the Prime Minister's Office.

Key Points

- **Background:** The Banks Board Bureau (BBB) has its genesis in the recommendations of '**The Committee to Review Governance of Boards of Banks in India, May 2014 (Chairman - P. J. Nayak)**'.

Note:

- **Formation:** The government, in 2016, approved the constitution of the BBB as a body of eminent professionals and officials to **make recommendations for appointment of whole-time directors as well as non-executive chairpersons of Public Sector Banks (PSBs)** and state-owned financial institutions.
 - It is an **autonomous recommendatory body**.
 - The Ministry of Finance takes the final decision on the appointments in consultation with the Prime Minister's Office.
- **Functions:**
 - Apart from recommending personnel for the PSBs, the Bureau has also been assigned with the task of recommending **personnel for appointment as directors in government-owned insurance companies**.
 - It engages with the board of directors of all the public sector banks to formulate appropriate strategies for their growth and development.
 - It is tasked with improving corporate governance at public sector banks, building capacities, etc.
- The Banks Board Bureau is a **public authority as defined in the Right to Information Act, 2005**.

MSMEs Loans to Get 'Risk-Free' Tag

Why in News

The **Reserve Bank of India (RBI)** is likely to allow banks to assign **zero risk weight** for loans that will be extended to the **Micro, Medium and Small Enterprises (MSMEs)** under the **Rs 20 lakh crore economic package** announced by the Union government.

Key Points

- As a part of the package, a **Rs.3 lakh crore loan for the MSME sector** was announced.
- However, such loans would attract a risk weight of a minimum 20% since these loans did not come with direct government guarantee.
 - The claims will not be settled unconditionally. The government will ask questions and see the loan appraisal process once a claim is made when the borrower defaults.
 - And, if the claim is not settled, banks have to make provision in line with the age of default.

- This facility is similar to the loans that are guaranteed by the **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)**.
- The government has made available a corpus of Rs. 41,600 crore for the Rs. 3 lakh crore scheme. **The government is factoring in less than 15% non-performing assets**, as of now.
- After **banks highlighted the issue of risk weight associated** with the loan with the government, the government has asked the RBI to waive the requirement of assigning a risk weight to the loans.
- **Benefit:**
 - Zero risk would mean that banks will not have to set aside additional capital for these loans.
 - The move will encourage lenders to extend credit, as banks have turned risk averse and have been reluctant to lend.
- **Rs. 3 lakh crore scheme**
 - Under the scheme, **100% guarantee coverage will be provided by the National Credit Guarantee Trustee Company Limited (NCGTC)** to eligible MSMEs, in the form of a **Guaranteed Emergency Credit Line (GECL) facility**.
 - Though primarily meant for the MSME sector, other small borrowers including the **Non-banking Financial Companies (NBFCs)** can also avail themselves of the scheme.
 - The **tenure of loan under this scheme is four years** with a moratorium period of one year on the principal amount.
 - The scheme would be applicable to all loans sanctioned under GECL till 31st October, 2020 or till an amount of Rs.3 lakh crore is sanctioned, whichever is earlier.

Credit offered by CGTMSE

- **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)** was set up by the Government of India and **Small Industries Development Bank of India (SIDBI)**.
- CGTMSE has introduced a new **"Hybrid Security"** product allowing guarantee cover for the portion of the credit facility not covered by collateral security.
- In the partial collateral security model, the Member Lending Institutions (MLIs) will be allowed to obtain collateral security for a part of the credit facility, whereas the remaining part of the credit facility,

Note:

up to a maximum of Rs. 200 lakh, can be covered under Credit Guarantee Scheme of CGTMSE.

- The main objective is that the lender should give importance to project viability and secure the credit facility purely on the primary security of the assets financed.
- The other objective is that the lender availing guarantee facility should endeavor to give composite credit to the borrowers so that the borrowers obtain both term loan and working capital facilities from a single agency.

National Credit

Guarantee Trustee Company Limited

- National Credit Guarantee Trustee Company Limited (NCGTC) is a **Union Government Company. It is classified as a company limited by shares.**
- It was set up by the Government of India to, inter alia, act as a common trustee company to manage and operate various credit guarantee trust funds.

ReStart Programme for MSMEs

Why in News

Recently, the Chief Minister of **Andhra Pradesh** has launched a new programme '**ReStart**' to support the **Micro, Small and Medium Enterprise (MSME)** sector in the State.

Key Points

- **Package:** The government will spend Rs 1,100 crore on revival of the sector which is expected to benefit 98,000 units that provide employment to more than 10 lakh people.
- **Special Fund:** A special fund of Rs 200 crore to provide input capital loan to the firms at low interest rates.
- **Waiving Off Power Charges:** The minimum power demand charges of the MSMEs for the months of April, May and June, amounting to Rs 188 crore to be waived off.
- **Mandatory Purchasing by Government:** The government will purchase around 360 products from the MSMEs and payments towards it would be cleared in 45 days.
 - Of the total purchases, almost 25% would be done from the micro and small enterprises, 4% from the SC/ST community enterprises, and 3% from women entrepreneurs.

- **Capacity Development:** Skills required by the industries (MSMEs) to be imparted through Skill Development Colleges.

Importance of MSMEs for Indian Economy

- **Employment:** It is the second largest employment generating sector after agriculture. It provides employment to around 120 million persons in India.
- **Contribution to GDP:** With around 36.1 million units throughout the geographical expanse of the country, MSMEs contribute around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities.
 - The MSME ministry has set a target to up its contribution to GDP to 50% by 2025 as India becomes a USD 5 trillion economy.
- **Exports:** It contributes around 45% of the overall exports from India.
- **Inclusive growth:** MSMEs promote inclusive growth by providing employment opportunities in rural areas especially to people belonging to weaker sections of the society.
 - For example, Khadi and Village industries require low per capita investment and employ a large number of women in rural areas.
- **Financial inclusion:** Small industries and retail businesses in tier-II and tier-III cities create opportunities for people to use banking services and products.
- **Promote innovation:** It provides opportunity for budding entrepreneurs to build creative products boosting business competition and fuels growth.

Problems Faced by MSMEs in India

- **Too Small for Registration:** Being out of the formal network, these MSMEs do not have to maintain accounts, pay taxes or adhere to regulatory norms etc., which brings down their costs. But in a time of crisis, it also constrains a government's ability to help them.
- **Lack of Financing:** According to a 2018 report by the **International Finance Corporation (part of the World Bank)**, the formal banking system supplies less than one-third (or about Rs 11 lakh crore) of the MSME credit need that it can potentially fund.
- **Delays in Payments to MSMEs:** MSMEs face delays in payment from their buyers which also includes the government. It also faces delays in GST refunds.

Note:

Revised definition for MSME

- Under the new MSME Classification MSMEs will now be defined in a composite manner, taking **both investments** as well as **turnover into account**.
 - **Micro:** Any firm with **investment up to Rs 1 crore** and **turnover under Rs 5 crore**
 - **Small:** Any firm with **investment up to Rs 10 crore** and **turnover upto Rs 50 crore**.
 - **Medium:** Any firm with **investment up to Rs 20 crore** and **turnover under Rs 100 crore**.

Way Forward

- Along with the **Atma Nirbhar Bharat Abhiyan package** of the Central Government, the ReStart Programme will further provide much needed relief to the people engaged in this sector. Other States may also follow in the true spirit of cooperative and competitive federalism in order to support the backbone of Indian Economy.
- Further, the government can provide tax relief, give swifter refunds, and provide liquidity to rural India to boost demand for MSME products.

Relaxation for Limited Category of OCIs**Why in News**

The Ministry of Home Affairs has relaxed the Visa and travel restrictions for a limited category of stranded **Overseas Citizen of India (OCI)** cardholders to come to the country.

Key Points

- The life-long visa to OCIs was temporarily suspended in March in the wake of **Covid-19** pandemic.
- Several OCIs were feeling discriminated against as it stopped them from flying to India on the special flights being arranged by the government under the **Vande Bharat scheme**.
- The **categories allowed** by the MHA on include:
 - Minors born to Indian nationals abroad and holding OCI cards.
 - Those who wish to come to India on account of family emergencies.
 - Couples where one spouse is a cardholder and the other is an Indian national and they have a permanent residence in India.

- University students who are cardholders (not legally minors) but whose parents are Indian citizens living in India.

Overseas Citizenship of India Scheme

- A Committee on the Indian Diaspora under the **Chairmanship of L.M. Singhvi, in 2002** recommended the amendment of the Citizenship Act (1955) to provide for grant of **dual citizenship to the Persons of Indian Origin (PIOs)** belonging to certain specified countries.
- Accordingly, the Citizenship (Amendment) Act, 2003, made provision for acquisition of Overseas Citizenship of India (OCI) by the PIOs of 16 specified countries other than Pakistan and Bangladesh.
- Later, the Citizenship (Amendment) Act, 2005, expanded the scope of grant of **OCI for PIOs of all countries** except **Pakistan and Bangladesh** as long as their home countries allow dual citizenship under their local laws.
- It must be noted here that the **OCI is not actually a dual citizenship** as the Indian Constitution **forbids dual citizenship or dual nationality (Article 9)**.
 - OCI does **not confer political rights**.
 - The registered Overseas Citizens of India shall not be entitled to the rights conferred on a citizen of India under article 16 of the Constitution with regard to equality of opportunity in matters of public employment.
- The Citizenship (Amendment) Act, 2015, replaced the nomenclature of "Overseas Citizen of India" with that of "Overseas Citizen of India Cardholder".
- The OCI scheme provides facilities like life-long visa, exemption from registration with Foreigners Regional Registration Office and parity with NRIs in economic, financial and educational fields except purchase of agricultural properties, political and public employment rights.

States' Share in PMMSY and FME**Why in News**

Recently, the Cabinet has approved the implementation of the **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** and **Formalisation of Micro Food Processing Enterprises (FME)**.

Note:

- Both the schemes were announced in the **third tranche of the Rs. 20 lakh crore economic package** under **Atmanirbhar Bharat Abhiyan**.
- It has been observed that about Rs. 30,000 crore worth of above schemes will rely on **40% share from states**.

Pradhan Mantri Matsya Sampada Yojana

- **Aim:** The Pradhan Mantri Matsya Sampada Yojana (PMMSY) was first mentioned during the 2019-20 Budget.
 - It aims to bring a **blue revolution** through sustainable and responsible development of the fisheries sector in India.
 - It also intends to augment fish production and productivity at an annual growth rate of **9% to achieve a target of 22 million metric tons by 2024-25**.
 - It strives to create direct employment to **15 lakh fishers, fish farmers**, etc. and about thrice this number as indirect employment opportunities.
 - It also aims to **double the incomes** of fishers, fish farmers and fish workers by **2024**.
- **Time Period:** The Scheme will be implemented during a **period of 5 years** from the Financial Year (FY) 2020-21 to FY 2024-25.
- **Funding:** It has a total estimated investment of Rs 20,050 crore. The investment share is segregated as:
 - **Central Share:** Rs 9,407 crores.
 - **States' Share:** Rs 4,880 crores.
 - **Beneficiaries' Share:** Rs 5,763 crores.
- **Implementation:** The PMMSY will be implemented as an umbrella scheme with two separate Components namely,
 - **Central Sector Scheme (CS):**
 - **Non-beneficiary Oriented:** The entire project cost will be borne by the Central government (i.e. 100% central funding).
 - **Beneficiary Oriented:** The individual/group activities undertaken by the entities of central government including the National Fisheries Development Board (NFDB), the central assistance will be up to 40% of the project cost for General category and 60% for SC/ST/Women category.
 - **Centrally Sponsored Scheme (CSS):**
 - **Non-beneficiary Oriented:** All the sub-components/activities will be implemented by

the States/UTs, the entire project/unit cost will be shared between Centre and State.

- **Beneficiary Oriented:** The individual/group activities under this component to be implemented by the States/UTs. The financial assistance of both Centre and State/UTs governments together will be limited to **40% of the project cost** for General category and **60% of the project cost for SC/ST/Women**.
- The Centre and State financial assistance for **CS** and **CSS** as mentioned above will be shared as given below:
 - **North Eastern & Himalayan States:** 90% Central share and 10% State share.
 - **Other States:** 60% Central share and 40% State share.
 - **Union Territories (with legislature and without legislature):** 100% Central share.

Formalisation of Micro

Food Processing Enterprises

- **Aim:**
 - The Scheme for Formalisation of Micro Food Processing Enterprises (FME) intends to increase access to finance and revenue targets for the micro **food processing enterprises**. It also targets **2,00,000 micro-enterprises** to be assisted with credit linked subsidies.
 - It envisages increased access to credit by existing micro food processing entrepreneurs, women entrepreneurs and entrepreneurs in the **Aspirational Districts**.
 - The project is likely to generate **9 lakh skilled and semi-skilled jobs**.
 - It will also help to integrate micro food processing enterprises with the organized markets.
- **Features:**
 - It is a **Centrally Sponsored Scheme (CSS)** on All India basis with an outlay of Rs. 10,000 crore.
 - The expenditure will be shared by the Centre and the States in a **ratio of 60:40**.
 - Scheme will be implemented over a **5 year period from 2020-21 to 2024-25**.
 - The Scheme will majorly **focus on perishables**.
 - The Scheme would be monitored at Centre by an Inter-Ministerial Empowered Committee (IMEC)

Note:



under the Chairmanship of Food Processing Industries Minister.

- A State/UT Level Committee (SLC) chaired by the Chief Secretary will monitor and sanction/recommend proposals for expansion of micro

units and setting up of new units by the **Self Help Groups (SHGs)/Farmer Producer Organizations (FPO)s/ Cooperatives.**

- The Scheme also envisages the third party evaluation and mid-term review mechanism in the programme.



Note:



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International Relations

Highlights

- G-7 Summit
- Aksai Chin
- Increased Chinese Transgression
- USA Offers Mediation Between India and China
- USA Bill to Put Sanction on China
- India-Nepal Border Dispute
- Afghanistan's Power-Sharing Deal
- WHO Foundation
- India to Chair WHO Executive Board
- Push for Probe into Covid-19 Origin
- United Nations Relief and Works Agency
- Protocol on Inland Water Transit and Trade
- India Resumes Purchase of Malaysian Palm Oil
- Open Skies Treaty
- One Sun One World One Grid
- Egypt-Ethiopia Conflict on GERD

G-7 Summit

Why in News

Recently, the President of the USA made an announcement to host the **46th G7 summit** in-person instead of remotely by videoconference.

- Originally, the annual **G7** summit was scheduled to be held on 10th June to 12th June 2020 in **Camp David, United States**.

Key Point

➤ G7:

- G-7 is a bloc of industrialized democracies (**France, Germany, Italy, the UK, Japan, the USA and Canada**).
- The world's biggest population and second-biggest economy, China has relatively low levels of wealth per head of population. Thus it is not considered as an advanced economy like other G7 members. **Hence China is not a member of G7.**
- 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 was known as the '**G8**' for several years after the original seven were **joined by Russia in 1997**.
 - The Group returned to being called G7 after **Russia was expelled as a member in 2014** following the latter's annexation of the Crimea region of Ukraine.
- **Summit Participation:**
 - Summits are held annually and hosted on a **rotation basis by the group's members**.
 - The host country not only holds the G7 presidency but also sets the agenda for the year.
 - 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.
- **Challenges and Concerns:**
 - Internally the G7 has a number of disagreements like clash of the USA with other members over taxes on imports and action on climate change.
 - The organisation has also been criticised for **not reflecting the current state of global politics or economics**.
 - There are **no G7 members from Africa, Latin America or the southern hemisphere**.
 - It is also facing a challenge from fast-growing

Note:

emerging economies, like India and Brazil are not members of the G7.

India and G-7

- The participation of India at the **45th summit in Biarritz, France**, is a reflection of deepening strategic partnership and recognition of India as a major economic power.
- While India has found the **European Union** a difficult jurisdiction to navigate diplomatically, a better relationship between India and European Union is emerging as a policy priority under G-7.
- India's ability to safeguard its core sovereign concerns such as trade, **Kashmir issue** and **India's relations with Russia** and Iran can be discussed with G7 members.
- India raised issues on **climate change** and at meetings which signaled India's growing willingness to lead on issues that are points of contention for countries like China and the USA.

Way Forward

- G-7 must focus on the key international issues like terrorism, climate change, trade and internal conflicts between the countries.
- As a platform it must reflect the solutions for the pressing issues and global concerns like elimination of poverty and diseases.
- It should support the economies at the global level and help to establish the equal levels for each country.

Aksai Chin

Why in News

Recently, Chinese media has accused India of building defence facilities in the Galwan Valley region of the contested Aksai Chin area.

Key Points

- China controls Aksai Chin area, while India claims that it is part of Indian territory (Union territory of Ladakh).
- The latest round of conflict comes days after Indian and Chinese troops clashed in the **NakuLa area in north Sikkim and Pangong Tso in eastern Ladakh**.
- India and China have an **unresolved 3488 km long border dispute** that has cast a shadow on ties for decades.

- However, in the **Wuhan** and **Mahabalipuram** summits, both China and India had reaffirmed that they will make efforts to "ensure peace and tranquility in the border areas".
- Also, on 1st April, 2020 **India and China completed their 70 years of diplomatic relations**.

Dispute over Aksai Chin

- During the time of British rule in India, two borders between India and China were proposed- **Johnson's Line and McDonald Line**.
 - The Johnson's line (proposed in 1865) shows Aksai Chin in erstwhile Jammu and Kashmir (now Ladakh) i.e. under India's control whereas McDonald Line (proposed in 1893) places it under China's control.
 - India considers Johnson Line as a correct, rightful national border with China, while on the other hand, China considers the McDonald Line as the correct border with India.
- At present, Line of Actual Control (LAC) is the line separating Indian areas of Ladakh from Aksai Chin. It is concurrent with the Chinese Aksai Chin claim line.



Increased Chinese Transgression

Why in News

Recently, there has been a marked increase in the number of **Chinese transgressions** across the disputed India-China border in Ladakh.

- In Ladakh, a **surge of 75%** have been observed in **2019** compared to 2018 and the **first four months of 2020** have also witnessed an **increase** compared to 2019.

Note:

Key Points

- **Chinese Transgression:**
 - The **border** between India and China is **not fully demarcated** and the **Line of Actual Control (LAC)** is neither clarified nor confirmed by the two countries.
 - This leads to different perceptions of the LAC for the two sides while soldiers from either side try to patrol the area.
 - **Observation Methods:** Use of surveillance equipment, face-offs by patrols, reliable indications by locals, or evidence left by the Chinese in the form of wrappers, biscuit packets etc. in an unmanned area.
 - Official data shows that **80%** of Chinese transgressions across the LAC since 2015 have taken place in **four locations** of which **three are in eastern Ladakh** in the western sector.
 - These areas of eastern Ladakh are **Pangong Tso, Trig Heights and Burtse**.
 - The fourth area is the **Dichu Area/Madan Ridge area** (Arunachal Pradesh) of the Eastern sector.
 - **Implications of Increased Number of Transgressions:**
 - It is an indicator of **increased Chinese assertiveness**.
 - Even if there are no major incidents, it should not be taken lightly.
 - So far, there has been **no major standoff** between the two sides after the 73-day **Doklam standoff** on Sikkim-Bhutan border in 2017.

Different Sectors of India-China Border

- India and China share a boundary that stretches **3,488 km** from **Ladakh to Arunachal Pradesh**.
- The **border dispute** still stands **unresolved**.
- It is **divided into three sectors:**
 - **Western Sector:** It falls in the Union Territory (UT) of Ladakh and is 1597 km long.
 - It witnesses the **highest transgressions** between the two sides.
 - **Middle Sector:** It falls in Uttarakhand and Himachal Pradesh and is 545 km long.
 - It is the **least disputed** sector between the two countries.
 - **Eastern Sector:** It falls in the states of Sikkim and Arunachal Pradesh and is 1346 km long.

Concerns

- India is worried about the **tensions at Naku La in Sikkim and at Galwan river and Pangong Tso in Ladakh**.
- The increased transgressions lead to **more tensions** between both countries which are already struggling to contain the **Covid-19 pandemic**.
- **Nepal's recent behaviour on the Mansarovar Link Road** raising the **border map issue** also raises Indian concerns.
- The **constant accusations** on each other also cause tensions and disrupt the peace on borders.
 - Recently, Chinese media accused India of building defence facilities in the **Galwan Valley region** of the contested **Aksai Chin area**.
- India and China are both **nuclear-armed countries** with **strong militaries** and the constant border conflicts are not a desirable thing.

Way Forward

- In the **Wuhan and Mahabalipuram summits**, both China and India had **reaffirmed** that they will make efforts to **ensure peace and tranquility in the border areas**.
- On 1st April, 2020 **India and China completed their 70 years of diplomatic relations**.
- Both countries have **resolved border issues peacefully in the past** four decades which gives the **hope** that the tensions will subside soon.
- **Establishment of peace** between the two big powers of such an **important geopolitical region** is essential for their own **growth and development** as well as for **maintenance of global peace**.

USA Offers Mediation Between India and China

Why in News

- Recently, the USA President has offered to **mediate between India and China** over the Indo-China border standoff.
- The offer has come in the backdrop of the **ongoing standoff between India and China** along the **Line of Actual Control (LAC)**.

Note:

Background

- Currently, India and China faces standoff at least four points along the LAC, including Pangong Tso lake, Demchok and **Galwan Valley** in Ladakh and **Naku La in Sikkim**.
- The tensions between two countries escalated along the LAC after China ordered the military to scale up battle preparedness and asked it to resolutely defend the country's sovereignty.
 - Subsequently, India has also increased its presence on **the boundary** with China in **North Sikkim, Uttarakhand, Arunachal Pradesh, along with Ladakh**.
- So far, at least six rounds of talks have been held between **Indian and Chinese military commanders in Ladakh** on the ground but have failed to achieve a breakthrough.

Key Points

- **Offer by USA:**
 - The USA President has informed both India and China that the United States is willing and able to mediate or arbitrate their raging border dispute.
 - It is the first time that the USA made such an offer to India and China, referring to the LAC situation as a "raging border dispute".
 - In the past, the USA had offered to **mediate between India and Pakistan** over Kashmir but it was rejected by India. India had cleared its position stating that the issue can only be discussed bilaterally.
 - The offer comes amid ongoing issues between the **USA and China** over the origin of **Covid-19** and trade tensions between the two countries.
 - Recently, the USA's National Security Adviser also said that the U.S. could impose sanctions on both Beijing and Hong Kong, if China were to go ahead and impose a **national security law on Hong Kong**.
- **China's Stand:**
 - China has cleared that both countries would resolve the standoff bilaterally. It has also stated that the situation at the border with India is "overall stable and controllable".
 - It has also stated that India and China have good border related mechanisms and communication channels and any issue can be resolved through dialogue and consultation.

India's Stand:

- India has not given any official response to the USA's offer for mediation between India and China.
- But, in the past India has rejected all offers for third party mediation.
- India has been carrying out high level meetings to open diplomatic channels to resolve the issue peacefully.

Way Forward

- The differing accounts in national and international media of escalation and continuing stalemate has created uncertainty in the scenario.
- In the **Wuhan** and **Mahabalipuram** summits, both China and India had reaffirmed that they will make efforts to ensure peace and tranquility in the border areas.
- Both countries have resolved border issues peacefully in the past four decades which gives the hope that the tensions will subside soon.
- The peaceful resolution between India and China is essential for their own growth and development as well as for maintenance of global peace.

USA Bill to Put Sanction on China

Recently, the United States House of Representatives approved a legislation **calling for sanctions on Chinese officials responsible for oppression of Uighur Muslims**.

Key Points

- The bill calls for **sanctions against those responsible for repression of Uighurs** and other **Muslim groups in China's Xinjiang province**.
 - According to the **United Nations** estimates, more than **one million Uighurs Muslims** and members of other largely Muslim minority groups have been detained in camps in Xinjiang in a crackdown.
- The bill also **calls on USA companies or individuals operating in the Xinjiang region** to take steps to ensure their products do not include parts using forced labor of Uighurs.
- By passing the bill, the United States Congress has taken a firm step to counter China's human rights abuses against the Uighurs.
 - It has sent a clear message that the Chinese government cannot act with impunity.

Note:



- However, China denies the mistreatment in the camps and says the camps provide vocational training. China also refuses to allow independent inspections.
- The bill has now been sent to the White House for President Donald Trump to veto or sign into law.
- This approval of legislation should be observed in the context of recent developments in the US-China relationship which have become increasingly tense. Few noteworthy developments are:
 - **Covid-19 Blame:** The **USA President has blamed China** again and again for worsening the Covid-19 pandemic.
 - **Trade War:** Growing **trade war** between USA and China.
 - Issue of Panchen Lama: **Over the release of Tibetan Buddhism's 11th Panchen Lama**, who was taken into captivity at the age of six.
 - Hong Kong's Autonomy: China has approved a proposal for **bringing new national security legislation** in Hong Kong, despite apprehensions raised by the USA.
 - **South China Sea:** China's growing assertiveness over the **South China Sea**.

Uighurs Muslims

- The Uighurs are a **predominantly Muslim minority** Turkic ethnic group, whose origins can be traced to Central and East Asia.
- The Uighurs are considered to be one of the 55 officially recognized ethnic minority communities in China.
 - However, China recognises the community only as a regional minority and rejects that they are an indigenous group.
- Currently, the largest population of the **Uighur ethnic community lives in Xinjiang region of China**.
 - A significant population of Uighurs also lives in the neighbouring Central Asian countries such as Uzbekistan, Kyrgyzstan and Kazakhstan.

Way Forward

- With the **USA signing out of major global deals** and taking a backstage in global scenario, China certainly has taken advantage of this and has become more assertive in recent past. It's up to the global community now to fix responsibility and accountability of major powers according to international laws and humanitarian values.

India-Nepal Border Dispute

Why in News

Recently, Nepal has released a **new political map that claims Kalapani, Limpiyadhura and Lipulekh of Uttarakhand as part of Nepal's territory**. The area of **Susta (West Champaran district, Bihar)** can also be noted in the new map.

Key Points

- **India rejected the new map of Nepal** saying that Nepal's new map involves artificial enlargement of territories, which is **not based on historical facts and evidence**.
 - Nepal's act is an unilateral act and is contrary to the bilateral understanding to resolve the outstanding boundary issues through diplomatic dialogue.
- India has urged the Government of Nepal **to refrain from such an unjustified cartographic assertion and respect India's sovereignty and territorial integrity**.
- India has also asked Nepal **to return to dialogue**.
- Nepal's move came after India's Defence Minister recently **inaugurated a motorable link road** that connects **India and China**, significantly reducing the time of Kailash Mansarovar Yatra.
 - The road passes through territory at the Lipulekh pass that Nepal claims as its own territory.
 - Earlier, Nepal had protested strongly against India, when India published **a new map which showed the region of Kalapani as part of the Indian territory**.
 - Nepal had also expressed **displeasure on the 2015 agreement between India and China** for using the Lipulekh pass for trade, without consulting Nepal.

Border Dispute Between India and Nepal

- Currently, India and Nepal have border disputes over **Kalapani-Limpiyadhura-Lipulekh trijunction between India-Nepal and China** and **Susta area (West Champaran district, Bihar)**.
- **Kalapani Region:**
 - Kalapani is a valley that is administered by India as a part of the Pithoragarh district of Uttarakhand. It is situated on the Kailash Mansarovar route.
 - Kalapani is advantageously located at a height of over 20,000 ft and serves as an observation post for that area.

Note:

- The **Kali River** in the **Kalapani region** demarcates the border between India and Nepal.
 - The **Treaty of Sugauli** signed by the **Kingdom of Nepal and British India** (after **Anglo-Nepalese War**) in **1816** located the Kali River as Nepal's western boundary with India.
- The discrepancy in locating the **source of the Kali river** led to boundary disputes between India and Nepal, with each country producing maps supporting their own claims.
- **Susta Region:**
 - The **change of course by the Gandak river** is the main reason for disputes in the Susta area.
 - Susta is located on the bank of the **Gandak river**.
 - It is called Narayani river in Nepal.
 - It joins Ganga near Patna, Bihar.
- **Nepal's Stand:**
 - Nepal's claim is that the **Kali river originates from a stream at Limpiyadhura, north-west of Lipu Lekh**. Thus Kalapani, Limpiyadhura and Lipu Lekh, fall to the east of the river and are part of Nepal's Dharchula district.
 - Nepal says Lipulekh was deleted from the country's map by the kings to get favours from India.
 - Nepal also argues that it's new map is in fact a document that was in circulation in Nepal till the 1950s.
 - It says, the territory of **Kalapani was offered to India by King Mahendra** after the 1962 India-China war who wanted to help India's security concerns due to perceived lingering Chinese threats.
 - Nepal says Kalapani was **not a part of Nepal-India dispute**. It was Nepal's territory that the king had allowed India to use temporarily.
- **India's Stand:**
 - India's position is that the Kali originates in springs well below the **Lipu-lekh pass**, and **the Sugauli Treaty does not demarcate the area north of these streams**.
 - The administrative and revenue **records of the nineteenth century also show that Kalapani was on the Indian side**, and counted as part of Pithoragarh district of Uttarakhand.
- **Efforts to Solve Border Dispute:**
 - In the 1980s, the two sides set up the **Joint Technical Level Boundary Working Group** to delineate the boundary.

- The group demarcated everything except Kalapani and Susta area.
- Officially, **Nepal brought the issue of Kalapani before India in 1998**. Both sides agreed to demarcate the outstanding areas (including Kalpani) by 2002 at the prime ministerial level talk held in 2000. But that has not happened yet.
- **Issues Involved:**
 - Nepal's **deliberate effort to make the Lipu-Lekh Pass a disputed tri-junction** (between India-China and Nepal) in which Nepal has an equal share.
 - India perceives **Nepal to be tilting towards China** under the leadership of Prime Minister K P Oli and his Nepal Communist Party.
 - Despite the open border between both countries and the people to people contact, **the levels of distrust in Nepal about India have only increased**.

Way Forward

- Given the **importance of ties with Nepal**, often romanticised as one of "roti-beti" (food and marriage), India must not delay dealing with the matter, and at a time **when it already has a faceoff with China in Ladakh and Sikkim**.
- Since the free movement of people is permitted across the border, Nepal enjoys immense strategic relevance from India's national security point of view, as terrorists often use Nepal to enter India.
 - Therefore, **stable and friendly relations with Nepal** is one of prerequisites which India can't afford to overlook.
- India should also try to convey to Nepal's leadership about the **congenial and friendly environment** that 6 to 8 million Nepali citizens living in India enjoy.
 - Therefore, any thoughtless erosion of this centuries old togetherness may prove difficult for both countries.
- The existing bilateral treaties between India and Nepal have not taken the shifting of Himalayan rivers into consideration. A primary reason for this is the **lack of an approach where ecological concerns** and needs of rivers are often discussed.
 - Therefore, India and Nepal should try to resolve the boundary dispute by taking into account **all shared environmental characteristics**.

Note:



Afghanistan's Power-Sharing Deal

Why in News

Recently, Afghanistan's President Ashraf Ghani and his political rival Abdullah Abdullah have signed a power-sharing agreement.

Key Points

- **Power-sharing Deal:**
 - According to the deal, Mr Ghani will remain the president while both Mr Ghani and Mr Abdullah will choose an equal number of ministers in the cabinet.
 - The deal calls for Mr Abdullah to lead the country's **National Reconciliation High Council**.
 - The **Reconciliation Council** has been given the authority to handle and approve all **affairs related to Afghanistan's peace process including the peace talks with the Taliban**.
- **Background:**
 - The deal has been signed two months **after the presidential election dispute** of September 2020 between Mr Ghani and Mr Abdullah.
 - The Election Commission **declared Mr Ghani to be the winner** of the presidential election **but Mr Abdullah** and the Elections Complaint Commission **charged widespread voting irregularities** in the election.
 - Following which both declared themselves the winner of the presidential election and have been locked in a power struggle since then.
- **USA-Taliban Peace Deal:**
 - Earlier, a **peace deal between the USA Government and the Taliban** was signed on 29th February 2020.
 - The deal calls for **USA and North Atlantic Treaty Organization (NATO) troops to leave Afghanistan**.
 - The USA-Taliban peace deal is seen as Afghanistan's **best chance to come at peace in decades of war**.
 - Since then, the USA has been trying to get the **Taliban and the Afghan government to begin intra-Afghan negotiations** but the political turmoil and personal hostility between Mr Ghani and Mr Abdullah have impeded talks.

- This prompted the USA government to announce that it would cut \$1 billion in assistance to Afghanistan if the two weren't able to work out their differences.
- **India's Stand:**
 - India has welcomed the power-sharing deal.
 - It hopes that the **power-sharing deal** will result in renewed efforts for **establishing enduring peace and stability** and **putting an end to externally-sponsored terrorism and violence in Afghanistan**.
- **Importance of Afghanistan for India:**
 - Afghanistan's main advantage is its geography.
 - Anyone who controls Afghanistan controls the land routes between the Indian subcontinent, Iran and resource-rich Central Asia.
 - Economically, it is a gateway to the oil and mineral-rich Central Asian republics.
 - Afghanistan has become the second-largest recipient of Indian foreign aid over the last five years.
 - India has become more and more popular in Afghanistan not only because of its soft power but also by setting up infrastructure, including hospitals, roads and dams and contributing to the fabric of a democratic nation-state.

WHO Foundation

Why in News

The **World Health Organization (WHO)** has created a foundation that will enable it to tap new sources of funding, including the general public.

Key Points

- **Status:** Legally independent from the WHO. This will facilitate contributions from the general public (philanthropic contributions).
- **Headquarter:** Geneva, Switzerland (WHO is also headquartered in Geneva).
- **Objective:** Support global public health needs, from prevention, mental health, and non-communicable diseases to emergency preparedness, outbreak response and health system strengthening.
 - In view of the **Covid-19 pandemic**, the WHO Foundation will initially focus on **emergencies and pandemic response**.

Note:

- **Goal:** Broaden WHO's donor base and work towards more sustainable and predictable funding.
 - It will provide funds to WHO and trusted implementing partners in order to achieve WHO's "triple billion" goals. These goals aim to:
 - **Protect:** Protect 1 billion people from health emergencies.
 - **Universal Health Coverage:** Extend universal health coverage to 1 billion people.
 - **Health and Wellbeing:** Assure healthy lives and wellbeing to 1 billion people by 2023.
- **Promising Initiative:** The success of **Covid-19 Solidarity Response Fund**, which has been able to raise around \$214 million from more than 4,00,000 individuals and companies in just two and a half months highlights the **potential this "foundation" can have in tapping potential resources.**

Background

- WHO has little discretion over the way it spends its funds. A **robust and more reliable funding mechanism** was needed.
 - Less than 20% of WHO's budget comes in the form of flexible assessed contributions from Member States, while more than 80% is voluntary contributions, from Member States and other donors, which are **usually tightly earmarked for specific programmes.**
- **WHO's Funding:** There are four kinds of contributions that make up funding for the WHO.
 - **Assessed Contributions:** These are the dues countries pay in order to be a member of the Organization. The amount each Member State must pay is calculated relative to the country's wealth and population.
 - **Specified Voluntary Contributions:** They come from Member States (in addition to their assessed contribution) or from other partners.
 - **Core Voluntary Contributions:** They allow less well-funded activities to benefit from a better flow of resources and ease implementation bottlenecks that arise when immediate financing is lacking.
 - **Pandemic Influenza Preparedness (PIP) Contributions:** They were started in 2011 to improve and strengthen the sharing of influenza viruses with human pandemic potential, and to increase the access of developing countries to vaccines and other pandemic related supplies.

- It can be noted that recently the **United States stopped its contributions to WHO**, pending a review of its response to the initial Covid-19 outbreak.

Way Forward

- Over the past few decades, the WHO has been the **global leader** in numerous pandemics and outbreaks, including HIV/AIDS, Zika and Ebola. **Historical experiences and a strong understanding of cultural contexts** puts WHO in a prime position of a global leader to tackle coronavirus pandemic.
- **Additional funding** can help the agency invest in some of its least funded areas such as diet, air quality, water and sanitation, investment in clean energy and promotion of healthy, sustainable food systems.
- In this context, the establishment of this new funding mechanism offers a promise of building a better world after this pandemic. A world with focus on not just diseases but that on **promoting good health.**

India to Chair WHO Executive Board

Why in News

Recently, India has been elected to the **World Health Organisation (WHO)**'s Executive Board. It will also be holding a **Chairmanship of the Executive Board** for the next one year (from May 2020- May 2021)

- Currently, the **chairmanship** of the WHO Executive Board is being held by Japan.

Key Points

- The proposal to appoint India's nominee to the executive board was signed by the 194-nation at the **73rd World Health Assembly** between 18-19 May, 2020.
- In 2019, WHO's South-East Asia group had unanimously decided that India would be elected to the executive board for a **three-year-term** beginning from May, 2020.
 - WHO Member States are grouped into **6 WHO regions** namely, African Region, Region of the Americas, South-East Asia Region, European Region, Eastern Mediterranean Region, and Western Pacific Region.
- India has been elected along with **10 other countries** including Botswana, Colombia, Ghana, Guinea-Bissau, Madagascar, Oman, Republic of Korea, Russia, and the United Kingdom.

Note:



WHO Executive Board

- **Composition:** The Executive Board is composed of 34 individuals technically qualified in the field of health, each one designated by a member state elected to do so by the World Health Assembly.
 - Member States are elected for three-year terms.
- **Chairman:** The chairman's post is held by rotation for one year among regional groups.
 - It is not a full time assignment and the chairman is just required to chair the Executive Board's meetings.
- **Meeting:** The Board meets at least twice a year.
- **Functions:** The main functions of the Executive Board are to give effect to the decisions and policies of the World Health Assembly, to advise it and generally to facilitate its work.

World Health Assembly

- The World Health Assembly is the **decision-making body** of WHO.
- It is attended by delegations from all WHO Member States and focuses on a specific health agenda prepared by the Executive Board.
- The main functions of the World Health Assembly are **to determine the policies of the Organization**, appoint the Director-General, supervise financial policies, and review and approve the proposed programme budget.
- The Health Assembly is held **annually in Geneva, Switzerland**.

Push for Probe into Covid-19 Origin

Why in News

Recently, India joined 61 countries that have moved a proposal at the World Health Assembly to **identify the zoonotic source of the coronavirus**.

- The World Health Assembly is the decision making body of the **World Health Organisation (WHO)**.
- **Zoonotic** refers to diseases that can be passed from animals to humans.

Key Points

- **The Proposal:**

- It is a part of a seven-page draft resolution moved by 35 countries and the 27-member **European Union**.
- It asks the WHO chief to work with the **World Organisation for Animal Health** to conduct scientific and collaborative field missions and the route of introduction to the human population (novel coronavirus), including the **possible role of intermediate hosts**.
- The countries also demanded an "impartial, independent and comprehensive evaluation" of the World Health Organization's (WHO) response to **Covid-19**.
 - Earlier, the WHO was slammed for accepting the findings given by China on face-value. The **US has even suspended funding to the body**.
- **Signatories of the Proposal:**
 - The resolution is supported by three of the five permanent members of the **UN Security Council** — UK, Russia and France — along with Japan, Australia, South Korea, New Zealand, South Africa and Turkey.
 - From the **South Asian Association for Regional Cooperation (SAARC)** nations, only India, Bangladesh and Bhutan have signed up.
- **India's stand:**
 - This is the **first time India has taken a position** in an international forum on the origin of the virus and the need for an independent evaluation of WHO's response to the crisis.
 - Earlier, India had maintained that it is engaged in the fight against Covid-19, and will revisit the issue after the crisis is over.
 - But Prime Minister Modi did indicate India's stand at the G20 summit in March where he backed WHO reform and referred to the need for transparency and accountability.
 - The virus has cost loss of livelihoods, poverty increase and economic crisis in each sector of India.
- **Role of China and its Response:**
 - The virus is widely believed to have originated from China's Wuhan, where the first case of Covid-19 was reported.
 - China is accused of concealing crucial information in relation to its spread and clinical diagnosis.
 - China had stated in its defence that it may support a review "at an appropriate time", but criticised

Note:



the politicisation of the virus's origin by the US and some other countries, and an inquiry "based on the presumption of guilt".

- It said that Wuhan city has first reported Covid-19 cases, but that does not mean the virus originated in Wuhan.

United Nations Relief and Works Agency

Why in News

Recently, the **United Nations Relief and Works Agency (UNRWA)**, has applauded India's financial support to keep its basic services operating, under the **Covid-19** crisis.

Key Points

- The Government of India provided **USD 2 million to the UNRWA** in support of its core programmes and services, including education and health.
- India had increased its annual contribution to the UNRWA from USD 1.25 million in 2016 to USD 5 million in 2019.
- India has also pledged another USD 5 million for 2020 which opens its way to become a member of the agency's advisory commission.

United Nations Relief and Works Agency

- It is a United Nations agency established by the **General Assembly in 1949**.
- It supports the relief and human development of **Palestinian refugees** across its five fields of operation.
 - Its services encompass education, health care, relief and social services, camp infrastructure and improvement, protection and microfinance.
- Its mission is to help Palestine refugees **in Jordan, Lebanon, Syria, West Bank, including East Jerusalem and the Gaza Strip**.
 - Palestine refugees are defined as persons whose normal place of residence was Palestine during the period 1 June 1946 to 15 May 1948, and who lost both home and means of livelihood as a result of the 1948 conflict.
- It is funded almost entirely by **voluntary contributions** and financial support.

Background

- 17 agreements have been signed under an **India-Palestine development partnership** between the two sides in the fields of agriculture, health care, information technology, youth affairs, consular affairs, women empowerment and media.
 - India would provide an assistance of around USD 72 million through these agreements in projects like the post-2014 war reconstruction efforts in Gaza, construction of schools, setting up a centre of excellence for information and communication technologies at Al-Quds University and developing a satellite centre in Ramallah.
- In March 2020, a delegation of **United Nations Committee on the Exercise of the Inalienable Rights of the Palestinian People (CEIRPP)** visited India intended to engage India in the settling of the question of Palestine.
 - India has reiterated its stand and supported the Two-State solution for the **Israel-Palestine issue**.
- In June 2019, India voted in favour of a decision introduced by Israel in the **UN Economic and Social Council (ECOSOC)** that objected to granting consultative status to a Palestinian non-governmental organization.
- In June 2018, India had voted in favour of Palestine on the **UN General Assembly (UNGA)** resolution to investigate an indiscriminate force usage by Israeli forces against Palestinian civilians.
- 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 December 2017, India had criticised the United States vote for recognising Jerusalem as the Israeli capital at the UNGA vote.
- In 2014, India favoured **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.

Protocol on Inland Water Transit and Trade

Why in News

Recently, the second Addendum to the Protocol on **Inland Water Transit and Trade** was signed between **India and Bangladesh**.

Note:



- The Protocol will further facilitate the trade between two countries with improved reliability and cost effectiveness.

Key Points

- **Protocol on Transit and Trade:** Bangladesh and India have a long standing and time-tested Protocol on Transit and Trade through **inland waterways**.
 - This Protocol was first signed in 1972.
 - It was last renewed in 2015 for five years with a provision for its automatic renewal for a further period of five years.
- **Second Addendum to the Protocol:** The second addendum includes new Indo Bangladesh Protocol (IBP) routes and declaration of new Ports of Call to facilitate trade between the two countries.
 - **Routes:**
 - As per the Protocol on Inland Water Transit and Trade, inland vessels of one country can transit through the specified routes of the other country. Under the Protocol, **50:50 cargo sharing by Indian and Bangladeshi vessels** is permitted both for transit and inter country trade.
 - The number of IBP routes has been **increased from 8 to 10**.
 - Inclusion of Sonamura-Daudkandi stretch of **Gumti river** in the Protocol will improve the connectivity of Tripura and adjoining States with Indian and Bangladesh's economic centres.
 - The operationalization of **Rajshahi-Dhulian-Rajshahi Route** and its extension up to Aricha, Bangladesh will help the augmentation of infrastructure in Bangladesh. It will also decongest the Land Custom Stations on both sides.
 - **Port of Call:**
 - A port of call is an intermediate port where ships customarily stop for supplies, repairs, or transshipment of cargo.
 - There were six Ports of Call each in India and Bangladesh under the Protocol. These are Kolkata, Haldia, Pandu, Karimganj, Silghat and Dhubari in India and Narayanganj, Khulan, Mongla, Sirajganj, Ashuganj and Pangaon in Bangladesh.
 - Five new ports of call: Dhulian, Maia, Kolaghat, Sonamura and Jogighopa are on the Indian side

while Rajshahi, Sultanganj, Chilmari, Daudkandi and Bahadurabad are on the Bangladesh side.

- Two extended Ports of Call i.e. Tribeni (Bandel), West Bengal and Badarpur, Assam on Indian side and Ghorasal and Muktarpur on the Bangladesh side.
 - Inclusion of Jogighopa in India and Bahadurabad in Bangladesh will provide connectivity to Meghalaya, Assam and Bhutan.
 - Multimodal Logistics Park is proposed to be established in Jogighopa.
- **Movement on shallow draft mechanized vessels:**
 - It would introduce trade between Chilmari (Bangladesh) and Dhubri (India) through the use of shallow draft mechanized vessels.
 - This would allow export of stone chips and other Bhutanese and North East cargo to Bangladesh.
 - It would give an easy access for the traders to the hinterland of Bangladesh, enhancing the local economy in Bangladesh and the lower Assam region of India.
 - **New opportunities on cargo movement:**
 - Under this Protocol, Inland vessels of both the countries can work on the designated protocol route and dock, notified for loading/unloading of cargo.
 - The Indian transit cargo is mainly coal, fly-ash, Over Dimensional Cargo (ODC) for power projects in North East region.
 - The other potential cargo for movement is fertilizers, cement, food grains, agricultural products, containerized cargo etc.

India Resumes Purchase of Malaysian Palm Oil

Why in News

Recently, India has resumed purchases of **Malaysian palm oil after a gap** of four-month following a diplomatic row between the two countries.

Background

- The former Prime Minister had criticised India's **Citizenship Amendment Act (CAA)** which was considered as an **interference in the internal matter** of India.

Note:

- Subsequently, the **diplomatic row** emerged between the two countries.
- Following the incident, India imposed a ban on imports of palm oil from Malaysia.
- The **renewed purchases** come amid improving trade relations between India and Malaysia after the formation of a new government in Malaysia.
 - India's total palm oil imports from Malaysia for the **first four months of 2020** fell by **more than 50%** from the **same period in 2019**.

Key Points

- **India's Palm Oil import:**
 - India is the **world's biggest buyer of edible oils**.
 - India buys **more than two-thirds** of its total edible oil imports as palm oil.
- **Malaysian Import over Indonesia:**
 - Malaysia is the **world's second largest producer** of palm oil after **Indonesia**.
 - Malaysia's palm oil inventories production has surged and **coronavirus lockdowns** led to a slump in demand.
 - Thus, Malaysian palm oil is available at a discount price compared to supplies from Indonesia. On the other hand, **Indonesia has also raised its palm oil export levy**.
 - Additionally, Malaysia has also signed a deal to buy 100,000 tonnes of Indian rice.

India-Malaysia Relation

- India established diplomatic relations with Malaysia in **1957**.
- **Economic Relation:** India and Malaysia have signed Comprehensive Economic Cooperation Agreement (CECA). CECA is a kind of **Free Trade Agreement (FTA)**.
 - India has also signed the Free Trade Agreement (FTA) in services and investments with the 10-member **Association of Southeast Asian Nations (ASEAN)**.
 - Malaysia is the third largest trading partner in ASEAN.
 - Bilateral trade between India and Malaysia is significantly biased in favour of Malaysia.



- **Defence & Security Cooperation:** Joint military exercises "Harimau Shakti" are held annually between the two countries.
- **Traditional medicine:** India and Malaysia have signed a MoU on cooperation in the field of Traditional Medicine in October 2010.
 - The Government of Malaysia has been working to popularize **AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy) systems** in Malaysia.
 - AYUSH systems are practiced in Malaysia.

Open Skies Treaty

Why in News

Recently, the USA has announced that it will exit the **Open Skies Treaty (OST)** due to continuous violation of the treaty by Russia and changes in the security environment.

Key Points

- It is expected to formally pull out of Open Skies in six months.
- **USA's Stand:** The USA has blamed Russia for restricting USA flyovers in neighbour Georgia and its military enclave in Kaliningrad (Russia).
 - Russia misused its flights over the USA and Europe to identify critical infrastructure for potential attack in a time of war.
 - Russia intends to annex the Crimean peninsula and has designated an Open Skies refueling airfield in the region.
 - Yet, the USA has expressed willingness to make a new agreement.
- **Russia's Stand:** Russia has denied the allegations and warned that the withdrawal will affect the interests of all of 35 participating countries.
 - However, Russia intended to fully follow all the rights and obligations under the treaty as long as the treaty is in force.
- It can be noted that the USA has used the treaty more intensively than Russia.
 - Between 2002 and 2016, the USA flew 196 flights over Russia compared to the 71 flights flown by Russia.

Note:



- This move by the USA has further deepened doubts on extension of the **New START treaty**, which expires in February, 2021.

Open Skies Treaty

- It was signed in 1992 and came into effect in 2002.
- It is an agreement that allows its 34 signatory countries to monitor arm development by conducting **surveillance flights (unarmed)** over each other's territories.
- Therefore, the **treaty established an aerial surveillance system** for its participants.
- Both USA and Russia are signatories of the treaty.
- India is not a member of this treaty.

Intermediate-Range Nuclear Forces Treaty

- It was a nuclear arms-control accord reached by the USA and the Soviet Union in **1987** in which the two nations agreed to eliminate **their stocks of intermediate-range and shorter-range (or "medium-range")** land-based missiles (which could carry nuclear warheads).
- It also covered all land-based missiles, including those carrying nuclear warheads but **did not cover sea-launched missiles**.
- The USA withdrew from the Treaty on 2nd August 2019.

New START Treaty

- The new **Strategic Arms Reduction Treaty (START)** is a treaty between the USA and the Russian Federation on measures for the further reduction and limitation of strategic offensive arms.
- It entered into force on 5th February, 2011.
- It is a successor to the START framework of 1991 (at the end of the Cold War) that limited both sides to 1,600 strategic delivery vehicles and 6,000 warheads.
- The USA has been worried that extending New START would negatively impact an arms deal with China and Russia.
- It is concerned that China's nuclear stockpile could be doubled if the treaty continued as is, without including China.
- The Treaty also suffered from verification inadequacies and that the USA intended to **establish a new arms control regime which would include China**.

- Throughout its term, the Trump administration has been skeptical of arms control agreements. In 2019, the USA and Russia walked away from the **1987 Intermediate-Range Nuclear Forces Treaty**.

One Sun One World One Grid

Why in News

Recently, the **Government of India** has called for bids to roll-out the '**One Sun One World One Grid**' (OSOWOG) plan.

- The plan focuses on a framework for **facilitating global cooperation**, building a **global ecosystem of interconnected renewable energy resources** (mainly **solar energy**) that can be seamlessly shared.

Key Points

- The **vision** behind the OSOWOG is '**The Sun Never Sets**' and is a constant at some geographical location, globally, at any given point of time.
- This is by far **one of the most ambitious schemes undertaken by any country** and is of global significance in terms of sharing economic benefits.
- It has been taken up under the **technical assistance program of the World Bank**.
- OSOWOG plan may also **leverage the International Solar Alliance** (ISA), co-founded by India that has 67 countries as members.
- With **India in the middle**, the solar spectrum can easily be divided into **two broad zones**, which are:
 - **Far East** including countries like Myanmar, Vietnam, Thailand, Lao, Cambodia etc.
 - **Far West** covering the Middle East and the Africa Region.
- **Three Phases of the Plan:**
 - **First Phase:** It deals with the **Middle East, South Asia and South-East Asia** (MESASEA) interconnection.
 - Fostering cross-border energy trade is an important part of India's **Neighbourhood-first policy**.
 - India has been supplying power to Bangladesh and Nepal and has been championing a **South Asian Association for Regional Cooperation** (SAARC) electricity grid minus Pakistan to meet electricity demand in the region.

Note:

- The initial plans also involve setting up an **under-sea link** to connect with **Oman** in the West.
- **Second Phase:** It deals with the MESASEA grid getting **interconnected with the African power pools**.
- **Third Phase:** It is about **global interconnection**.
- **Significance:**
 - The proposed integration would lead to **reduced project costs, higher efficiencies and increased asset utilization** for all the participating entities.
 - This plan will **require only incremental investment** because it will not require a parallel grid infrastructure due to working with existing grids.
 - It will help all the participating entities in **attracting investments** in renewable energy sources as well as utilizing skills, technology and finances.
 - Resulting economic benefits would **positively impact** poverty alleviation and support in mitigating water, sanitation, food and other socio-economic challenges.
 - It will allow **national renewable energy management centres in India to grow** as regional and global management centres.
 - This move, during the time of the **Covid-19 pandemic**, gives **India** the opportunity to be seen as **taking a lead in evolving global strategies**.
- **Backdrops:**
 - India is already expediting ISA's plan to set up the **World Solar Bank (WSB)** with a capital of USD 10 billion.
 - WSB aims to compete with other newly created funding institutions like the **Asian Infrastructure Investment Bank (AIIB)** and the **New Development Bank (NDB)**.
 - The **USA's withdrawal** from the **Paris climate deal**.
 - OSOWOG will help to **mitigate its ill effects on climate** by providing clean and renewable energy sources, enabling member countries to fulfill their **Nationally Determined Contributions (NDCs)** towards reducing global warming.
 - China's attempts to co-opt countries into its **One Belt One Road (OBOR)** initiative, a programme to invest billions of dollars in infrastructure projects, including railways, ports and power grids, across Asia, Africa and Europe.
 - OSOWOG will provide a **strategic rebalance in**

favour of India and will **control the increasing Chinese dominance** in Asian subcontinent, providing a **better alternative** to developing countries.

Way Forward

- The move is the **key to future renewable-based energy systems globally** because regional and international interconnected green grids can enable sharing and balancing of renewable energy across international borders.
- It allows **grabbing opportunities to learn quickly from global developments** and share renewable energy resources to **reduce the global carbon footprint** and **insulate the societies from pandemics**.

Egypt-Ethiopia Conflict on GERD

Why in News

Recently, **Egypt** has announced that it is willing to resume negotiations with **Ethiopia** and **Sudan**, concerning the **Grand Ethiopian Renaissance Dam (GERD)**.

- The dam is located on River **Blue Nile** (a tributary of River Nile) in Ethiopia and is the centre of a dispute involving several East-African countries, dependent on the river's waters.

Key Points



Note:

➤ Background:

- Ethiopia began the construction of the GERD in **2011** on the Blue Nile that runs across one part of the country.
 - After completion, the dam hydropower project will be **Africa's largest**.
- **Egypt has objected** to the construction of the dam and proposed a longer timeline for the project.
- **Sudan** has also been **involved** due to its location.
- The Nile is an important water source in the region so there are concerns that this dispute may evolve into a full-fledged conflict between Egypt and Ethiopia.
- For the past four years, tri-party talks between Egypt, Ethiopia and Sudan have been unable to reach agreements.
- Recently, the **USA** has stepped in to **mediate**.

➤ Dam's Importance for Ethiopia:

- Ethiopia believes that the dam will **generate approximately 6,000 megawatts** of electricity after completion.
 - This dam will **reduce electricity shortages** and **help** the country's **manufacturing industry**.
- It will also enable Ethiopia to **supply electricity to neighbouring nations** and **earn revenue** in exchange.
 - Neighbouring countries like Kenya, Sudan, Eritrea and South Sudan also suffer from electricity shortages and they can also benefit from the hydropower project if Ethiopia decides to sell electricity to them.
- Ethiopia sees the dam as a matter of **national sovereignty** and the dam project **does not rely on external funding** and relies on government bonds and private funds to pay for the project.

➤ Cause of Conflict:

- The hydropower project may just allow Ethiopia to control the Nile's waters, and this concerns **Egypt** because it **lies downstream on the Nile**.
 - The dam would **jeopardise food and water security** and **livelihoods** of ordinary Egyptian citizens.
 - Egypt has also written to the **United Nations Security Council (UNSC)** concerning the matter and has also implied that the dam **would cause armed conflict** between the two countries.

- Egypt has **proposed a longer timeline** because it does not want the water level of the Nile to drastically drop as the dam reservoir needs plenty of water to fill in the initial stages.
 - The longer it takes to fill the reservoir, the less impact will be there on the water level of the river.
- **Sudan** too believes that Ethiopia having control over the river through the dam may **affect the water supplies** of the country. It has proposed **joint management** of the dam.
 - Sudan is likely **to benefit from the power generated by the dam**.
 - The **regulated flow of the river** will save Sudan from serious flooding in August and September.
- There is a possibility that the conflict would **threaten the vital international trade** route through the **Suez Canal** and along the **Horn of Africa**.

River Nile

- The name Nile is derived from the **Greek** word **Neilos** (Latin: *Nilus*), meaning a valley or a river valley.
- It is the **longest river in the world** and is called the **father of African rivers**. It has a length of about 4,132 miles and drains an area estimated at 1,293,000 square miles.
- It **rises south of the Equator** and **flows northward** through **northeastern Africa** to **drain into the Mediterranean Sea**.
 - The Nile River forms an **arcuate delta as it empties into the Mediterranean Sea**. Deltas with triangular or fan-shape are called **arcuate (arc-like) deltas**.
- The Nile is formed by **three principal streams**: the **Blue Nile**, the **Atbara**, and the **White Nile**.
- **Drainage**: Parts of Tanzania, Burundi, Rwanda, the Democratic Republic of the Congo, Kenya, Uganda, South Sudan, Ethiopia, Sudan, and the cultivated part of Egypt.

Way Forward

- To solve the conflict peacefully, **mediation and facilitation** by the neighbouring countries and the international bodies are necessary.
- In case, the attempt to resolve the conflict does not work out by facilitating negotiations between

Note:

the conflict parties, then a **compensation method** can be adopted which would need the countries to compensate each others' losses.

- All countries involved in the issue need to **peacefully resolve** the issue so that they can **reap the advantages** of the dam and their **peace and security is restored** again.



Note:



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Science and Technology

Highlights

- Fibroin-based Hydrogel for Insulin
- Lightweight Carbon Foam
- New Super-Earth Planet
- Malicious Software Cerberus
- Agappe Chitra Magna Kit for Covid-19
- South Atlantic Anomaly
- Antarctic Impulsive Transient Antenna: ANITA
- Arogya Setu App: An Open Source
- Fabrication of Controlled Nanostructures
- Tianwen-1: China's Mars Mission
- Neutralising Antibodies Against Covid-19

Fibroin-based Hydrogel for Insulin

Why in News

Recently, scientists at **Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)**, have developed an **injectable silk fibroin-based hydrogel (or iSFH)** for sustained **insulin delivery** in **diabetic** patients.

- JNCASR is an autonomous research institute under the **Department of Science and Technology**.

Key Points

- **Diabetes:**
 - It results from **inadequate production of insulin** due to loss of **beta cells** (found in the pancreas which make insulin) **or insulin resistance** within the body.
 - Insulin helps glucose from food get into cells to be used for energy.
 - The inadequate production of insulin does not convert glucose into energy which leads to an abrupt **increase of blood glucose level**.
 - **India** is home to more than 70 million diabetes people, the second-highest in the world after China.
- **Treatment:**
 - The conventional and last resort of treatment involves **repeated subcutaneous insulin injections** to maintain the physiological glucose balance.
 - Subcutaneous means under the skin.

Issues in Treatment:

- The **multiple subcutaneous insulin** injections are associated with pain, local tissue necrosis (death of tissues), infection, nerve damage and locally concentrated insulin amyloidosis responsible for an inability to achieve physiological glucose balance.
 - Amyloidosis is a phenomenon that occurs when an abnormal protein, called amyloid, builds up in organs and interferes with their normal function.
- **Solution:** Controlled and sustained insulin delivery.
- **iSFH:** It can **ease insulin delivery in diabetic patients**.
 - The iSFH has successfully delivered active insulin in rats.
 - The subcutaneous injection of insulin with iSFH in diabetic rats formed an **active depot** under the skin from which **insulin trickled out slowly** and restored the physiological glucose balance for a prolonged period of 4 days.
 - The **porous form of iSFH** allowed the **encapsulation of recombinant insulin** (identical to human insulin) in its active form in diabetic rats.
 - It has proved to be an effective insulin delivery tool with excellent **mechanical strength, biocompatibility, encapsulation, storage** and demonstration of its **sustained delivery of active insulin** in the diabetic animal.
 - The **active encapsulation and delivery of insulin by iSFH** may also have implications for the future development of formulations for **oral insulin delivery**.

Note:



Silk Fibroin

- Silk fibroins are the unique **proteins of silkworm fibres**.
- Researchers have found fibroin as the **promising resources of biotechnology and biomedical materials**.
- They have unique properties which include **biocompatibility (i.e. compatible with living tissue), favourable oxygen permeability and biodegradability**.
- The **degradation product also can be readily absorbed by the body** with a minimal inflammatory reaction.

Hydrogel

- A hydrogel is a three-dimensional network of **hydrophilic polymers** that can swell in water and hold a large amount of water while maintaining the structure due to chemical or physical cross-linking of individual polymer chains.

Lightweight Carbon Foam

Why in News

Recently, scientists (including a recipient of the INSPIRE Faculty award) from the CSIR-Advanced Materials and Processes Research Institute (Bhopal) have developed the '**lightweight carbon foam**' which has the potential to **replace lead grid in lead-acid batteries**.

Background

- Currently, the large-scale energy-storage sector is dominated by **Lithium-ion (Li-ion) batteries**, because of their **higher energy density and long cycle life**.
 - Energy density is the amount of energy that can be stored in a given mass of a substance or system, i.e. a measure of storage of energy.
- However, there are some **concerns** regarding Li-ion batteries, such as safety risk, limited resource supply, high cost, and lack of recycling infrastructure.
- As a result, **lead-acid batteries are still one of the most reliable, economical, and environmentally friendly options**.
 - The Lead-acid battery is one of the **oldest types of rechargeable batteries** and was invented in **1859 by the French physicist Gaston Plante**.
 - However, electrodes in the lead-acid batteries **suffer** from the problem of **heavyweight, corrosion, poor thermal stability, and diffusion of electrolytes**

in one dimension, which ultimately affects the output power.

- The above issues necessitated the development of an **alternative battery system** with lower environmental concerns, economic and **higher energy density**.
- Thus, currently developed lightweight carbon foam **can replace the lead-acid batteries** as the foam is **highly resistive to corrosion**, has **good electrical and thermal conductivity** with **high surface area**.

Key Points➤ **Properties:**

- The developed lightweight carbon foam has **very less density and high porosity**.
- It also has a **good mechanical strength** and is **insoluble in water**.

➤ **Uses:**

- It can also be useful for heat sinks in power electronics, electromagnetic interference shielding in aerospace, hydrogen storage, electrodes for lead-acid batteries and water purification systems.
 - In the case of water purification systems it is cost-effective for the **removal of arsenic, oil, and other metals from contaminated water**.

➤ **Benefits:**

- These carbon foams are non-toxic, easy to fabricate and affordable.
- The raw material for the fabrication of carbon foam is easily available and there is no requirement of any costly equipment for the fabrication of carbon foam and filtration.
- Such materials can be safely used in remote areas where power supply is scarce.

➤ **Other Related Development:**

- Recently, a group of researchers (including a recipient of the INSPIRE Faculty Award) have also made significant achievements in developing **nanomaterials based supercapacitors** to achieve **high energy density and power density of supercapacitors**.

New Super-Earth Planet

Why in News

Recently, scientists have discovered a **rare new Super-Earth planet**. It is among only a handful of extra-solar

Note:



planets that have been **detected with both sizes and orbits close to that of Earth.**

- An **exoplanet or extrasolar planet** is a planet **outside the Solar System.**

Key Points

- **Mass:**
 - **Host Star:** The host star of the Super-Earth's system has about 10% the mass of the Sun. The lower mass of the host star makes a 'year' on the planet of approximately 617 days.
 - **Super-Earth Planet:** The planet is expected to have a mass between the Earth's mass and that of Neptune.
- **Orbit:**
 - With reference to the Solar system, the Super-Earth planet would orbit at a radius anywhere between that of Venus and Earth in our solar system.
- **Planet Discovery:**
 - The Super-Earth planet has been discovered using the gravitational microlensing technique.
 - **Gravitational microlensing** is an astronomical phenomenon due to the gravitational lens effect. It can be used to detect objects that range from the mass of a planet to the mass of a star, regardless of the light they emit.
 - The microlensing effect is rare, with only about one in a million stars in the galaxy being affected at any given time.
 - Furthermore, such type of observation does not repeat, and the probabilities of catching a planet at the same time are extremely low.
 - The other methods for **exoplanets discovery** include:
 - **Radial Velocity Method:** The planet causes the parent star to wobble around in its orbit, and as the planet moves to and fro, it changes the color of the light we see.
 - **Transit Method:** When an exoplanet passes in front of its star, some of the starlight passes through its atmosphere. Scientists can analyze the colors of this light in order to get valuable clues about its composition.



- **Direct Image Method:** The direct image can take pictures of exoplanets by removing the glare of the stars they orbit.
- **Astrometry:** The orbit of the planet can cause a star to wobble around in spaces in relation to nearby stars in the sky. This method is quite similar to the Radial Velocity method. However, here scientists take a series of images of a star and some of the other stars that are near it in the sky. In each picture, they compare the distances between these reference stars and the star they're checking for exoplanets.

Exoplanet

- An exoplanet or extrasolar planet is a planet outside the Solar System. The first confirmation of detection of exoplanets occurred in 1992.
- Exoplanets are very hard to see directly with telescopes. They are hidden by the bright glare of the stars they orbit. So, astronomers use other ways to detect and study exoplanets such as looking at the effects these planets have on the stars they orbit.

Malicious Software Cerberus

Why in News

Recently, the **Central Bureau of Investigation (CBI)** has sent alerts to all the States, Union Territories and the central agencies on a **malicious software (cerberus)** threat that is taking advantage of the **Covid-19** pandemic.

- The **cyber alert** related to Cerberus has been sent on the basis of inputs received from the **Interpol.**

Key Points

- **Cerberus:** It is a **Banking Trojan**. It is primarily used to steal financial data, such as credit card numbers.
- **Trojan:**
 - Trojan is a type of malicious code or software to damage, disrupt, steal, or inflict harmful action on data or network.
 - The Trojan can also use overlay attacks to trick victims into providing personal information and can capture two-factor authentication details.
 - **Overlay attacks:** An overlay attack happens when an attacker places a window over a legitimate application on the device. When the target application is running, the overlay opens

Note:

messages or data input forms identical to the real ones. Victims enter information (E.g. login credentials or bank card numbers), believing that they are dealing with the original program.

- Two-factor authentication: It is a two step verification security process in which users go through two authentication processes to verify themselves.
- Banking Trojan is a malicious program used in an attempt to obtain confidential information about customers and clients using online banking and payment systems.
- **Working of Cerberus**
 - It takes advantage of the Covid-19 pandemic and sends SMS to lure a user to download the link containing the malicious software.
 - It deploys its malicious application usually spread via **phishing campaigns** to trick users into installing it on their smartphones.
 - **Phishing:** The email or text message carrying a link appears to come from a trusted source like a bank.
 - The link takes to a fake website and once details like login name and passwords are entered, the login credentials reach the hacker.

Agappe Chitra Magna Kit for Covid-19

Why in News

The Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) in collaboration with Agappe Diagnostics Ltd. has commercially launched the Agappe Chitra Magna Kit for detection of **Covid-19**.

- SCTIMST is an Institute of National Importance under the Department of Science and Technology (DST).

Key Points

- Agappe Chitra Magna is a **magnetic nanoparticle-based RiboNucleic Acid (RNA)** extraction kit.
- **Working:**
 - It isolates RNA from the patient sample using magnetic nanoparticles.
 - SARS-COV-2, the causative virus of Covid-19 pandemic, is an **RNA virus**- a long single-stranded polymeric substance present in all living cells

that carries the genetic information of the organism necessary for life.

- One of the critical steps in detecting this virus is by confirming the presence of the RNA of the virus in the sample taken from the throat or nose.
 - The magnetic nanoparticle beads bind to the viral RNA and, when exposed to a magnetic field, give a highly purified and concentrated RNA.
 - As the sensitivity of the detection method is dependent on getting an adequate quantity of viral RNA, this innovation enhances the chances of identifying positive cases.
- **Application:**
 - The kit can be used for RNA extraction for **RT-LAMP**, **RT-PCR** and other isothermal and Polymerase Chain Reaction (PCR) based protocols for the detection of SARS-COV-2.
- **Significance:**
 - The indigenously developed and manufactured RNA extraction kit would reduce the nation's dependence on imported kits which are expensive and thus will bring down the cost of Covid-19 testing.

South Atlantic Anomaly

Why in News

Recently, the **Swarm constellation of satellites** of the **European Space Agency (ESA)** has updated the development of **South Atlantic Anomaly (SAA)**.

- The South Atlantic Anomaly signifies **weakening of the Earth's magnetic field between Africa and South America**.
 - However, it has been observed that the present dip in intensity of the Earth's magnetic field is **within the normal fluctuation levels**.

Key Points

- **Intensification of SAA (Weakening of Magnetic Field):**
 - Scientists have discovered that Earth's magnetic field has **lost** around **9%** of its strength over the **last 200 years**.
 - Further, the strength of the field has **dropped** from around **24,000 nanoteslas to about 22,000 nanoteslas between 1970 and 2020**.

Note:



Swarm Constellation Mission

- Swarm is European Space Agency's **first** constellation of satellites for **Earth observation**.
- It consists of three satellites designed to identify and precisely measure the **different magnetic signals** that **make up Earth's magnetic field**.
- The mission is operated by ESA's European Space Operations Centre (ESOC), in **Germany**, via the primary ground station in **Kiruna, Sweden**.

Earth's Magnetic Field

- **Description:**
 - Earth's magnetic field, or the geomagnetic field, is the magnetic field that extends from the Earth's interior out into space exerting a force on the charged particles emanating from the Space including Sun.
 - The earth's south magnetic pole is actually near the North Pole and the magnetic north pole is near the South Pole. This is why a compass magnet's north pole actually points north (Since opposite poles attract each other).
 - **Reasons for Presence:**
 - The magnetic field of the Earth is due to the **metallic and liquid outer core** of the planet.
 - The outer core of the planet is like a **giant dynamo**. The **rotation of the Earth** creates **movements inside the liquid outer core** which gives rise to the geomagnetic field.
 - **Significance:**
 - It creates electric currents that generate and change our electromagnetic field.
 - The Northern Lights in the Polar Regions are caused by the magnetic field of Earth – the energy particles emitted by the Sun are channelled by the Earth's magnetic field towards the poles, where they interact with the atmosphere to create the **aurora borealis**.
 - The Earth's magnetic field also plays an important role in **protecting the planet from solar winds and cosmic radiation that are harmful**.
- It has also observed an **intensified weakening** of magnetic fields in the **southwest of Africa**. The **eastern minimum** of the South Atlantic Anomaly has appeared over the last decade and has been **developing vigorously**. This scenario indicates that

the South Atlantic Anomaly **could split** into **two separate low points**.

- **Significance of SAA:**
 - It has been speculated that the current weakening of the field is a **sign of the pole reversal of the earth**– in which the north and south magnetic poles may switch places.
 - Pole reversal is not an uncommon event and it takes place every 250,000 years. Last it had happened 7.8 lakh years ago.
 - Additionally, the SAA is expected to help to understand the **processes in Earth's core** and future developments in the earth's interior.
- **Implications:**
 - At **surface level**, the South Atlantic Anomaly presents **no cause for alarm**. It means that people won't feel the change even if the pole shift happens.
 - However, **satellites and other spacecraft flying through the area** are more likely to experience **technical malfunctions**. The weaker magnetic field in this region may force charged particles to penetrate the altitudes of low-Earth orbit satellites.
 - It may also affect the **navigation-mapping, telecommunication and satellite systems** which rely on the geomagnetic field. Therefore, computers, mobile phones and other devices could also face difficulties.

Way Forward

- Earth's magnetic field is often visualised as a powerful dipolar bar magnet at the centre of the planet, tilted at **around 11° to the axis of rotation**. However, the growth of the South Atlantic Anomaly indicates that the processes involved in **generating the field are far more complex**.
- The magnetic field observations from the Swarm satellite are also expected to provide the new insights into the scarcely understood processes of Earth's interior.

Antarctic Impulsive Transient Antenna: ANITA

Why in News

Recently, **NASA's Antarctic Impulsive Transient Antenna (ANITA)** has detected the unusual upward movement of neutrinos in Antarctica.

Note:

- Instead of the high-energy neutrinos streaming in from space, they seem to have come from the Earth's interior, before hitting the detectors of ANITA.
 - Usually, the high-energy particles move top to bottom (i.e. from space to the earth). However, **ANITA has detected an anomaly** i.e. particles have been detected travelling bottom to top.
- **Earlier, researchers had also located a deep-space source for high-energy neutrinos** through the **Ice Cube Neutrino Observatory** at a U.S. scientific research station at the South Pole in Antarctica.
 - The **India-based Neutrino Observatory (INO)** is located at the **Bodi West Hills** region in **Theni District of Tamil Nadu**.

Antarctic Impulsive Transient Antenna

- **Antarctic Impulsive Transient Antenna (ANITA)** is a **radio telescope instrument** to detect ultra-high energy cosmic-ray neutrinos from a scientific balloon flying over the continent of Antarctica.
 - It involves an array of radio antennas attached to a helium balloon which flies over the Antarctic ice sheet at 37,000 meters.
 - At such a height, the antennas can listen to the cosmos and detect high-energy particles, known as neutrinos, which constantly bombard the planet.
- It is the **first NASA observatory for neutrinos** of any kind.
- ANITA detects neutrinos pinging in from space and colliding with matter in the Antarctic ice sheet through the **Askaryan effect**.
 - The Askaryan effect is the phenomenon whereby a particle traveling faster than the phase velocity of light in a dense dielectric (such as salt, ice or the lunar regolith) produces a shower of secondary charged particles.
 - When neutrinos smash into an atom, they produce a shower of detectable secondary particles. These detectable secondary particles allow us to probe where they came from in the universe.
 - However, neutrinos pose no threat to human beings and pass through most solid objects. Additionally, they rarely do interact with matter.
 - It is **named after Gurgen Askaryan**, a Soviet-Armenian physicist who postulated it in 1962.

Neutrinos

- Neutrinos are electrically neutral, undisturbed by even the strongest magnetic field, and rarely interact with matter. The direction from which they arrive points directly back to their original source.
- Neutrinos are produced during natural radioactive decays and all sorts of nuclear reactions in nuclear power reactors, particle accelerators or nuclear bombs.
- However, the most common sources of neutrinos are celestial phenomena i.e. the birth and death of stars, collisions, and explosions happening in space.

Way Forward

- The ANITA experiment has definitely detected something unusual and unexpected about neutrinos but there are many competing theories about it. There are a number of potential candidate particles that could account for the results from ANITA.
- Further, there are so many unknown properties about neutrinos that astrophysicists and scientists are still trying to unravel.
- It contemplates that there is new physics out there to be found which will help to study the origin of the universe and big bang theory in the future.

Arogya Setu App: An Open Source

Why in News

- Recently, the source code of Arogya Setu Mobile App has been made open source for software developers.
- It has been uploaded on GitHub which will help in identifying any vulnerabilities or code improvement in order to make Arogya Setu more robust and secure.

Background

- India launched **Arogya Setu mobile App** to augment the efforts of limiting the spread of **Covid-19**.
- It has an objective of **enabling bluetooth based contact tracing** and mapping of likely hotspots and dissemination of relevant information about Covid-19.

Note:



- Although the app has been resourceful by its users, there were **privacy concerns** regarding the lack of transparency in the app's code.
- To address these concerns, the government has decided to launch the code-set of the **app on GitHub to make it more transparent.**

Key Points

- **Arogya setu as an open source: Open Source** refers to a source which people can modify and share because its design is publicly accessible.
 - **Source code** is the part of software that computer programmers can manipulate its working and function. Programmers who have access to a computer program's source code can improve that program by adding features.
- **Significance:** Expanding collaboration amongst the talented youth and citizens through open source would help in building a robust and secure technology solution which will further support the work of frontline health workers in fighting this pandemic together.
- Towards this objective, the **National Informatics Centre** has also launched a **Bug Bounty Programme**
- **Challenges:** Releasing the source code of a rapidly evolving product that is being used by million users would require regular maintenance of the source code.
 - Regular updates in the app with the new technology would also be a concern.

Bug Bounty Programme

- It has a goal to partner with security researchers and Indian developer community to test the security effectiveness of Aarogya Setu and also to enhance its security and build user's trust.
- It is aimed at encouraging the Indian developer community to find security flaws in the app and get rewarded Rs 1 lakh.

Way Forward

- The availability of the App as an open code would help in the development of a transparent mechanism of availing data from the public regarding the Covid-19. It would address the privacy issue by enabling a robust system in the App by adding new features to it.

Fabrication of Controlled Nanostructures

Why in News

Recently, the researchers at the **Institute of Nano Science and Technology (INST) Mohali** have found a route to fabricate precisely controlled nanostructures of desired geometry and location on 2D materials, through a rapid one-step low power laser writing process.

- INST, Mohali is an **autonomous institute** under the **Department of Science and Technology (DST).**

Key Points

- INST developed a **hybrid Surface-Enhanced Raman Spectroscopy (SERS) platform of Molybdenum disulfide (MoS₂, an inorganic compound) nanostructure** decorated with **gold NanoParticles (AuNPs).**
 - SERS is a **commonly used sensing technique** in which inelastic light scattering by molecules is greatly enhanced when the molecules are adsorbed onto corrugated metal surfaces such as silver or gold nanoparticles (NPs).
 - It enhances the Raman scattering light from molecules, thus leading to effective analysis of the molecules.
- **Direct laser writing** (3D printing for microscopic world) was used to engineer the artificial edges on the surface of MoS₂ which **created localized hotspots with precision and control.**
 - A focused laser beam of meagre power of a **conventional Raman spectrometer** was used which enabled the superior deposition of AuNPs along the artificial edges.
 - Nanostructuring was done on the 2D MoS₂ sheet.
- The hybrid SERS platform offers **controlled formation of localized hotspots for ultrasensitive and reproducible detection of analytes** (substances whose chemical constituents are being identified and measured).
- **Significance:**
 - This research will open a new avenue for the development of commercialized **SERS substrates** (a silicon wafer coated with a metal like gold or silver) with a localized detection capability of analytes.
 - SERS detection has been emerging as a powerful **tool for the detection of a variety of analytes**

Note:

due to its very **high sensitivity and fingerprinting recognition capabilities**.

- This will also shed new light in the SERS sensing of biological and chemical molecules.
- The technology can be used in combination with an antibody for the spectroscopic detection of various **biomarkers** (an objective measure that captures what is happening in a cell or an organism at a given moment).

Raman Effect

- It is a phenomenon in **spectroscopy** discovered by the eminent **physicist Sir Chandrasekhara Venkata Raman on 28th February 1928**.
 - In his honour, 28th February is celebrated as **National Science Day** in India.
- In **1930**, he got a **Nobel Prize** for this remarkable discovery and this was the **first Nobel Prize for India in the field of Science**.
- Raman effect is the **inelastic scattering of a photon by molecules** which are excited to higher vibrational or rotational energy levels. It is also called **Raman scattering**.
 - In simpler words, it is a **change in the wavelength of light that occurs when a light beam is deflected by molecules**.
 - When a beam of light traverses a dust-free, transparent sample of a chemical compound, a small fraction of the light emerges in directions other than that of the incident (incoming) beam.
 - Most of this scattered light is of unchanged wavelength. A small part, however, has wavelengths different from that of the incident light and its presence is a result of the Raman Effect.
- The Raman effect **forms the basis for Raman spectroscopy** which is used by chemists and physicists to **gain information about materials**.
 - **Spectroscopy** is the study of the interaction between matter and electromagnetic radiation.

Tianwen-1: China's Mars Mission

Why In News

China will launch its **first Mars Mission - Tianwen-1** in July, 2020.

Mars

➤ Size and Distance:

- It is the **fourth planet** from the Sun and the second-smallest planet in the Solar System.
- Mars is about half the size of Earth.

➤ Similarity to the Earth (Orbit and Rotation):

- As Mars orbits the Sun, it completes one rotation every 24.6 hours, which is very similar to one day on Earth (23.9 hours).
- Mars' axis of rotation is tilted 25 degrees with respect to the plane of its orbit around the Sun. This is similar with Earth, which has an axial tilt of 23.4 degrees.
- Like Earth, Mars has distinct seasons, but they last longer than seasons on Earth since Mars takes longer to orbit the Sun (because it's farther away).
- Martian days are called sols—short for 'solar day'.

➤ Surface:

- It has colors such as brown, gold and tan. The reason Mars looks reddish is due to oxidation or rusting of iron in the rocks, and dust of Mars. Hence it is also called Red Planet.
- Mars has the largest volcano in the solar system i.e. Olympus Mons. It's three times taller than Earth's Mt. Everest with a base the size of the state of New Mexico.

➤ Atmosphere:

- Mars has a thin atmosphere made up mostly of carbon dioxide, nitrogen and argon gases.
- The temperature on Mars can be as high as (20 degrees Celsius) or as low as about -153 degrees Celsius. This is because the thin atmosphere gives an easy escape to sun heat.

➤ Magnetosphere:

- Mars has no magnetic field till date, but areas of the Martian crust in the southern hemisphere are highly magnetized, indicating traces of a magnetic field.

- **Moons:** Mars has two small moons, Phobos and Deimos, that may be captured asteroids.

Previous Mars Missions

- The Soviet Union in 1971 became the first country to carry out a Mars landing, Mars 3.
- The second country to reach Mars's surface is the United State of America (USA).

Note:



- Since 1976, it has achieved 8 successful Mars landings, the latest being the 'InSight' in 2019.
- European Space Agency has been able to place their spacecraft in Mars's orbit through the Mars Express Mission.
- **India's Mars Orbiter Mission (MOM) or Mangalyaan:**
 - It was launched from the Satish Dhawan Space Centre in Andhra Pradesh by **Indian Space Research Organisation** in November 2013.
 - It was launched on board a PSLV C25 rocket with aim of studying Martian surface and mineral composition as well as scan its atmosphere for methane (an indicator of life on Mars).
- China's previous 'Yinghuo-1' Mars mission, which was supported by a Russian spacecraft, had failed after it did not leave the earth's orbit and disintegrated over the Pacific Ocean in 2012.
- The **National Aeronautics and Space Administration (NASA)** is also going to launch its own Mars mission in July, the Perseverance which aims to collect Martian samples.

Key Points

- **The Tianwen-1 Mission:**
 - It will lift off on a **Long March 5 rocket**, from the Wenchang launch centre.
 - It will carry 13 payloads (seven orbiters and six rovers) that will explore the planet.
 - It is an **all-in-one orbiter, lander and rover system**.
 - **Orbiter:** It is a spacecraft designed to orbit a celestial body (astronomical body) without landing on its surface.
 - **Lander:** It is a strong, lightweight spacecraft structure, consisting of a base and three sides "petals" in the shape of a tetrahedron (pyramid-shaped). It is a protective "shell" that houses the rover and protects it, along with the airbags, from the forces of impact.
 - **Rover:** It is a planetary surface exploration device designed to move across the solid surface on a planet or other planetary mass celestial bodies.
- **Objectives:**
 - The mission will be the first to place a ground-penetrating radar on the Martian surface, which

will be able to study local geology, as well as rock, ice, and dirt distribution.

- It will search the martian surface for water, investigate soil characteristics, and study the atmosphere.
- **Landing on Mars:**
 - The mission is expected to land on the surface of Mars in the first quarter of 2021.
 - The **success of the mission will make China the third country** to achieve a Mars landing after the USSR (the former Eurasian empire) and the United States of America.

Neutralising Antibodies Against Covid-19

Why in News

Recently, a study conducted on the hospital staff in France has shown that **almost all doctors and nurses who got mild forms of Covid-19 have produced antibodies that can prevent reinfection.**

- Almost all of the staff tested had antibodies that were **capable of neutralizing the novel coronavirus.**

Key Points

- **Findings of the Study:**
 - Antibodies against novel coronavirus were detected in virtually all hospital staff, sampled 13 days after the symptoms started.
 - **Neutralising antibodies** were found in 91% of the individuals.
 - After an infection, it takes some time for the host to produce neutralising antibodies.
 - These are a type of antibody that is capable of keeping an infectious agent (for instance, a virus) from infecting a cell by neutralizing or inhibiting its biological effect.
 - An antibody is a protective protein produced by the immune system in response to the presence of a foreign substance, called an antigen.
 - The study also revealed that patients may get **protective immunity** against the virus.
- **Protective Immunity:**
 - It is a condition of developing the protection against infectious disease conferred either by the

Note:

immune response generated through immunization, previous infection or by other factors.

- Several evidence suggest that the presence of neutralising antibodies may be associated with protective immunity for Covid-19 infection.

➤ **Supports Serologic Testing:**

- The study supports the use of **serologic testing** for the diagnosis of individuals who have recovered from Covid-19 infection.
 - Currently, serologic response of individuals with mild forms of Covid-19 infection is poorly characterised.
- **Serologic Tests:**
 - Serology tests are **blood-based tests** that can be used to identify whether people have been exposed to a particular pathogen by looking at their immune response.

- It measures the amount of antibodies or proteins present in the blood when the body is responding to a specific infection.
- These tests can also give greater detail into the prevalence of a disease in a population by identifying individuals who have developed antibodies to the virus.

Way Forward

- The findings may help scientists better understand Covid-19, including whether people who have recovered from the coronavirus infection, particularly milder forms, develop antibodies against the virus.
 - Currently, there's no specific treatment or vaccine for the coronavirus disease.
- Further, there is a need of future studies to characterise the beneficial or detrimental role of specific antibodies in Covid-19 patients.



Note:



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Environment and Ecology

Highlights

- West Bengal Major Irrigation and Flood Management Project
- A Rare Palm from Andamans
- Objections to Etalin Hydroelectric Project
- Tadoba Andhari Tiger Reserve
- Ecologically Sensitive Areas in Western Ghats
- Increased Stubble Burning in Punjab
- International Day for Biological Diversity
- World Turtle Day
- Punitus Sanctus: New Freshwater Fish
- Wildfires in Uttarakhand
- Locusts and Urban Areas
- Invasive Species: Charu Mussel
- World Dugong Day 2020
- Banana Covid: A Novel Fungal Strain

West Bengal Major Irrigation and Flood Management Project

Why in News

Recently, the **Government of India**, the **Government of West Bengal**, the **Asian Infrastructure Investment Bank (AIIB)** and the **World Bank** have signed a loan agreement for a project titled '**West Bengal Major Irrigation and Flood Management Project**'.

- The project includes the **improvement in irrigation and flood management in the Damodar Valley Command Area (DVCA)**.

Key Points

- West Bengal Major Irrigation and Flood Management Project aims to improve irrigation service delivery, strengthen flood risk management and improve climate change resilience in the project area.
- It is intended to **benefit about 2.7 million farmers** from five districts of West Bengal.
- The project comprises **four components**:
 - **Irrigation Management**: It will improve the management of the Damodar Valley Command Area (DVCA) irrigation scheme to improve service delivery, performance monitoring and irrigation efficiency evaluation.
 - **Modernization of Irrigation Infrastructure**: It will invest in the modernization of irrigation

infrastructure at main, branch, distributary and minor canal levels.

- **Flood Management**: It will invest in structural measures to reduce flooding in the project area. It will also include the implementation of the recommendations of the Dam Safety.
- **Project Management**: It will strengthen the implementation agency's capacity for project management, including financial management, monitoring and evaluation, and environmental and social safeguards management and communication. It will also support a communication campaign to inform stakeholders on the importance of water use efficiency.
- The **total value of the project is \$413.8 million**, co-financed between the International Bank for Reconstruction and Development (IBRD) (\$145 million), the Asian Infrastructure Investment Bank (\$145 million) and the Government of West Bengal (\$123.8 million).
 - **International Bank for Reconstruction and Development (IBRD) is a part of the World Bank Group** that provides financial products and policy advice to help countries reduce poverty and extend the benefits of sustainable growth to all of their people.

Damodar River

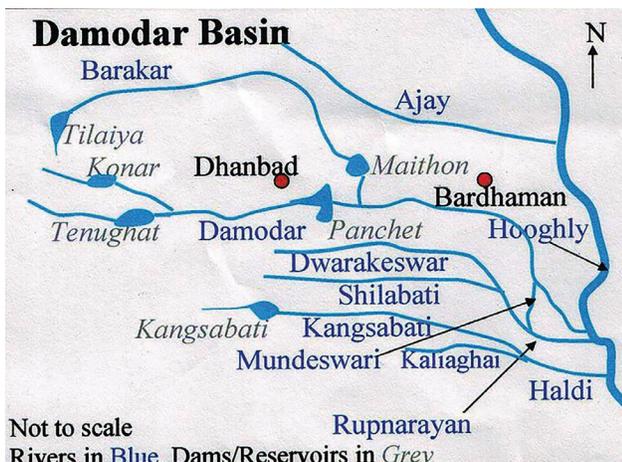
- The Damodar river **rises in the Palamu hills of the Chota Nagpur plateau in the state of Jharkhand**.
- It passes through two Indian states namely, Jharkhand and West Bengal.

Note:



Background

- The **Damodar Valley Command Area** is in the **need of modernization**.
 - The command area is the area around the dam/project, where the area gets benefits from the dam, such as irrigation water, electricity, etc. It is an area which can be irrigated from a project and is fit for cultivation.
 - In other words, it is the area around a dam which is under its command as an irrigation source.
 - It faces **key challenges** including degradation of infrastructure, inadequate irrigation management, poor quality of service delivery and inefficient irrigation.
 - Due to above reasons, the farmers in the area are forced to extract groundwater, which increases the costs of cultivation.
 - Moreover, the Lower Damodar basin area is historically **flood-prone**. As this area lacks the infrastructure to protect against recurrent flooding, on average, 33,500 hectares of the cropped area and 461,000 people are affected annually due to recurrent flooding in the area.
- The Damodar occupies the eastern margins of the Chotanagpur Plateau where it flows through a rift valley and finally joins the Hugli (an arm of Ganga river).
- The **Barakar river is its main tributary**.
 - Due to the devastating floods caused by the Damodar river and its tributaries in the plains of West Bengal, it is also known as the '**sorrow of Bengal**'.



Damodar Valley Corporation

- The Damodar Valley Corporation was **established in 1948 as the first multipurpose river valley project of independent India**.
- Under this project, **four dams** were constructed namely,
 - **Tilaiya Dam:** It has been constructed across the Barakar river at Tilaiya in Koderma district of Jharkhand.
 - **Konar Dam:** The Konar dam has been constructed across the Konar river—a tributary of the Damodar River in the Hazaribagh District of Jharkhand.
 - **Maithon Dam:** It has been constructed across the Barakar river near the confluence of Barakar with Damodar river.
 - **Panchet Dam:** The Panchet dam has been constructed across the Damodar river, about 20 km south of the Maithon Dam.

A Rare Palm from Andamans

Why in News

Recently, a rare palm, **Pinanga andamanensis**, has been successfully cultivated at **Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI)** based at **Palode, Thiruvananthapuram (Kerala)**.

Key Points

- **Pinanga andamanensis:**
 - It is a rare palm endemic to South Andaman Island. Its entire population of some 600 specimens naturally occurs only in a tiny, evergreen forest pocket in South Andaman's **Mount Harriet National Park**.
 - **Endemic species** are those plants and animals that exist only in one geographical region.
 - The name is derived from '**Penang**', the modern-day Malaysian state. Penang itself has its origins in Pulau Pinang which **means Island of the Areca Nut Palm**.
 - It has strong **resemblance with the areca palm tree** (widely used for bright interiors).
 - It has a **small gene pool** which means the species is vulnerable to natural calamities such as cyclones, earthquakes.
 - JNTBGRI scientists term it a critically endangered species and one of the least known among the endemic palms of the Andaman Islands.

Note:

- **Cultivation at JNTBGRI:**
 - **Thiruvananthapuram** has been referred as its **second home** as the species has started flowering in this Institute.
 - JNTBGRI will **resume seed germination experiments for mass multiplication** as part of the conservation strategy.

Mount Harriet National Park

- It is located in the south of the Andaman island.
- Mount Harriet is the **third-highest peak in the Andaman and Nicobar** archipelago next to **Saddle Peak** in North Andaman and **Mount Thuillier** in Great Nicobar.
- The park is covered with evergreen forest pockets.
- It is rich in flora and faunal species like **andaman wild pigs, saltwater crocodiles, butterflies and palm trees.**

Objections to Etalin Hydroelectric Project

Why in News

Recently, some conservationists and former members of the **National Board of Wildlife (NBWL)** have sought rejection of approval for the **Etalin Hydroelectric Project** in the **Dibang Valley, Arunachal Pradesh.**

Key Points

- The Project is based on the river **Dibang** and is proposed to be **completed in 7 years.**
 - Dibang is a **tributary of the Brahmaputra** river which flows through the states of Arunachal Pradesh and Assam.
- It **envisages construction of two dams** over the tributaries of Dibang: **Dir** and **Tangon.**
- The Project falls **under the richest bio-geographical province of the Himalayan zone** and would be located at the junction of major **biogeographic zones** like Palaeartic Zone and Indo-Malayan Zone.
- It is expected to be **one of the biggest hydropower projects in India** in terms of **installed capacity.**

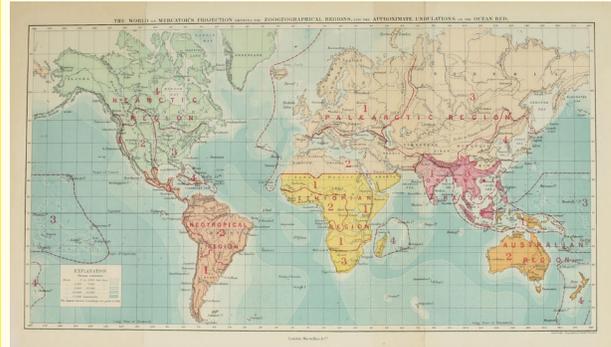
Background

- The **Forest Advisory Committee (FAC)** of the **Ministry of Environment Ministry of Environment, Forest and**

Climate Change (MoEFCC) highlighted that the project will **clear 2.7 lakh trees** in subtropical evergreen broad-leaved forest and subtropical rainforests.

Biogeographic Regions

- These are the large distinctive units of similar ecology, biome representation, community and species.
- Originally, **six biogeographic regions** were identified: **Palaearctic** (Europe and Asia), **Nearctic** (North America), **Neotropical** (Mexico, Central and South America), **Ethiopian/Afrotropic** (Africa), **Oriental/Indo-Malayan** (Southeast Asia, Indonesia) and **Australian** (Australia and New Guinea). **Currently, eight are recognised** since the addition of **Oceania** (Polynesia, Fiji and Micronesia) and **Antarctica.**



Palaeartic Zone

- This includes arctic and temperate Eurasia and all islands surrounding the continent in the Arctic, in the sea of Japan and the eastern half of the North Atlantic.
- It also includes the Macaronesian islands, Mediterranean North Africa and Arabia.

Indo-Malayan Zone

- Its natural boundaries contain tropical Asia from the Balochistan mountains of Pakistan eastward to the Indian subcontinent south of the Himalayan crest, including the tropical southern fringe of China with Taiwan, the whole of Southeast Asia and the Philippines.
- According to a sub-committee of FAC, the project **may be allowed subject to the condition** that the financial outlay of Wildlife Conservation Plan be deposited to the Forest Department by user agency on the basis of a study done by the **Wildlife Institute of India (WII).**
- However, there were protests by green groups due to which MoEFCC **transferred the project** to the **Union Power Ministry.**

Note:

Criticism

- Conservationists highlighted that the FAC sub-committee **ignored established tenets of forest conservation and related legal issues** while recommending the proposal.
- FAC **ignored the threat of forest fragmentation**.
 - **Forest fragmentation** results from ill-planned intrusion of developmental projects into contiguous landscapes with natural forests and threatens rare floral and faunal species in a biodiversity hotspot.
- FAC's **site inspection report was also questioned for leaving out key details** like number of grids across an altitudinal range inspected and the status of vegetation there, direct and indirect signs of wild animals listed in the various **schedules of the Wildlife Protection Act, 1972** and overall appreciation of the ecological value of the area.
- The **inadequacy of the Environment Impact Assessment report** on Etalin was also highlighted.
 - Wildlife officials ignored observations which include the threat to 25 globally endangered mammal and bird species in the area to be affected.
- The proposed **mitigation measures** like setting up butterfly and reptile parks are **inadequate and insufficient**.

Tadoba Andhari Tiger Reserve

Why in News

Recently, a new prey and predator estimation in **Tadoba Andhari Tiger Reserve (TATR)** in Maharashtra found the presence of 115 tigers and 151 leopards.

Key Points

- The estimation was done as part of the **long-term monitoring of tigers**, co-predators and prey species in TATR inside the core and buffer areas of the reserve.
 - The tiger reserves are constituted on a **core/buffer strategy**.
 - The **Project Tiger** aims to foster an exclusive tiger agenda in the core areas of tiger reserves, with an inclusive people oriented agenda in the buffer.
 - The **core areas** have the legal status of a national park or a sanctuary, whereas the buffer or peripheral areas are a mix of forest and non-forest land, managed as a multiple use area.

- The tiger numbers appear to be up but the **population density** shows a **decline**.
 - Population Density represents the number of animals residing in per unit area.
- **Tadoba Andhari Tiger Reserve**
 - It is located in **Chandrapur district in Maharashtra**.
 - It is Maharashtra's **oldest and largest** national park.
 - It is one of India's **50 "Project Tiger" reserves**.
 - Tadoba-Andhari Tiger Reserve was established as the **second Tiger Reserve** in Maharashtra in **1993-94**.
 - The first Tiger Reserve established in the State is Melghat Tiger Reserve (1973-74).
 - It represents Southern **Tropical Dry Deciduous Teak Forests** in the Tiger habitat and has a viable tiger population

Ecologically Sensitive Areas in Western Ghats

Why in News

Recently, the Union Minister of Environment, Forest and Climate Change interacted with Chief Ministers of six states through a video conference to discuss issues relating to notification of **Ecologically Sensitive Area (ESA) pertaining to Western Ghats**.

- These six states include **Kerala, Karnataka, Goa, Maharashtra, Gujarat and Tamil Nadu**.

Background

- The government had constituted a High Level Working Group under the **Chairmanship of Dr Kasturirangan to conserve and protect the biodiversity of Western Ghats** while allowing for sustainable and inclusive development of the region.
- The Committee had recommended that identified geographical areas falling in the six States of Kerala, Karnataka, Goa, Maharashtra, Gujarat and Tamil Nadu may be declared as **Ecologically Sensitive Areas**.
 - The Committee recommended to bring just **37% of the Western Ghats** under the Ecologically Sensitive Area (ESA) zones — **down from the 64%** suggested by the **Gadgil Committee report**.
 - The **Western Ghats Ecology Expert Panel, also known as the Gadgil Committee** was an

Note:



environmental research commission appointed by the government in 2011.

- A **draft notification** related to the same was issued in **2018** mentioning the areas to be notified in the ESA.

Key Points

- All the involved States recognised a **need to protect the Western Ghats**. However, the states expressed their concerns related to **the allowed activities and extent of area** mentioned in the draft notification.
- Further, it has been also decided that **state specific issues** will be discussed and **resolved through the consensus**.

Eco-Sensitive Areas

- These are located within **10 kms** around Protected Areas, National Parks and Wildlife Sanctuaries.
- ESAs 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.

Western Ghats Ecology Expert Panel

- A committee headed by ecologist Madhav Gadgil also known as the Western Ghats Ecology Expert Panel (WGEEP) in 2011 recommended that all of the Western Ghats be declared as the Ecological Sensitive Areas (ESA) with **only limited development allowed in graded zones**.
- The panel had classified the Western Ghats into **Ecologically Sensitive Areas (ESA) 1, 2 and 3 of which ESA-1 is high priority**, almost all developmental activities (mining, thermal power plants etc) were restricted in it.
- It specified that the system of governance of the environment should be a **bottom to top approach (right from Gram sabhas)** rather than a top to bottom approach.
- It also recommended the constitution of a **Western Ghats Ecology Authority (WGEA)**, as a statutory authority under the Ministry of Environment and Forests, with the powers under Section 3 of the Environment (Protection) Act, 1986.
- The report was criticized for being **more environment-friendly** and not in tune with the ground realities.

Kasturirangan Committee

- The Kasturirangan Commission sought to **balance the development and environment** protection in contrast to the system proposed by the Gadgil report. The committee's major recommendations were:
 - Instead of the total area of Western Ghats, **only 37%** of the total area to be brought under ESA.
 - Complete ban on mining, quarrying and sand mining in ESA.
 - No thermal power projects to be allowed and hydropower projects be allowed only after detailed study.
 - Red industries i.e. which are highly polluting to be strictly banned.
 - The report recommended exclusion of inhabited regions and plantations from the purview of ESAs making it a pro farmer approach.

Way Forward

- It is a Development vs Conservation debate. Hence, a proper analysis based on scientific study followed by consensus among various stakeholders by addressing respective concerns is required urgently.
- Holistic view of threats and demands on the forest land, products and services, devising strategies to address these with clearly stated objectives for the authorities involved must be taken.
- Any further delay in the implementation will only accentuate degrading of the most prized natural resource of the country.

Increased Stubble Burning in Punjab

Why in News

Punjab has been experiencing a **problem of stubble burning** once again despite the government's efforts to control the practice since last few years.

- The recent **end of wheat harvesting season** is responsible for the increased incidents of the stubble burning in the State.

Key Points

- Total 13,026 incidents have been reported in 2020 compared to 10,476 incidents in 2019 and 11,236 in 2011.

Note:

- The ban and action against people burning the crop residue is regulated under the **Air (Prevention and Control of Pollution) Act, 1981**.
- The stubble burning causes diseases such as problems in breathing, lungs etc, which could also affect recovery of patients suffering from **Covid-19**.

Stubble Burning

- **Description:**
 - **Stubble (parali)** burning is the act of setting fire to crop residue to remove them from the field to sow the next crop.
 - **Causes:**
 - The problem arises due to the use of mechanised harvesting which leaves several inches of stubble in the fields.
 - Earlier, this excess crop was used by farmers for cooking, as hay to keep their animals warm or even as extra insulation for homes. But, now the stubble use for such purposes has become outdated.
 - In order to plant the next crop, farmers in Haryana and Punjab have to remove the stubble in a very short interval to avoid considerable losses. Therefore, burning is the cheapest and fastest way to get rid of the stubble.
 - The leftover parali in the field may pose the threat of the pest attacks to the upcoming crop.
- **Effects:**
 - The stubble burning emits large amounts of toxic pollutants in the atmosphere which contain harmful gases like **methane (CH₄)**, **Carbon Monoxide (CO)**, **Volatile organic compound (VOC)** and **carcinogenic polycyclic aromatic hydrocarbons**.
 - After the release in the atmosphere, these pollutants disperse in the surroundings, may undergo a physical and chemical transformation and eventually adversely affect human health by causing a thick blanket of smog.
 - The burning of wheat straw **reduces the soil fertility**, besides polluting the environment.
 - Additionally, the heat generated by stubble burning penetrates into the soil, leading to the loss of moisture and useful microbes.
- **Alternative Use of Stubble:**

- The stubble can be used for preparation of the **high-grade organic fertilizers** by mixing with cow dung and few natural enzymes.
- **The stubble can be converted to bio coal** and also can be used for **electricity generation**.

Way Forward

- An expansion of schemes like the **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) for harvesting and composting of stubble** will help to resolve the dual problem of **unemployment and stubble burning**.
- The establishment of the **Farm Machinery Banks (FMB)** for custom hiring of in-situ crop residue management machinery.
- The financial incentives to small and marginal farmers will help to engage in the management of the residue of their non-basmati variety rice crop in Punjab, Haryana and Uttar Pradesh.
- However, in the longer time span, shifting the **cropping pattern** away from paddy to maize, cotton, fruits or vegetables in Punjab, Haryana and UP will also help to resolve the issue.

International Day for Biological Diversity

Why in News

The International Day for Biological Diversity is observed on **22nd May** every year to increase **understanding and awareness of biodiversity issues**.

Key Points

- **Theme for 2020: Our solutions are in nature.**
- The year 2020 is a reflection, opportunity and solutions for biodiversity issues. The year will witness:
 - The final period for the **2011-2020 Strategic Plan on Biodiversity** and its 20 Aichi Biodiversity Targets.
 - The end of the **2011-2020 United Nations Decade on Biodiversity** and start of other new pivotal biodiversity related decades for the period 2021-2030: the **UN Decade of Ocean Science for Sustainable Development** and the **UN Decade on Ecosystem Restoration**.
 - The **UN Biodiversity Summit** (15th Conference of the Parties: COP-15) which will highlight the

Note:



urgency of actions in support of a post-2020 global biodiversity framework that contributes to the **2030 Agenda for Sustainable Development** and places the global community on a path towards realizing the **2050 Vision for Biodiversity**.

Note:

- 22nd March: **World Water Day**
- 22nd April: **Earth Day**
- 22nd May : **World Biodiversity Day**
- Recently the **Earth Hour** was observed on 28th March, 2020. It encourages people to switch off the lights from 8.30 pm to 9.30 pm as per their local time.

World Turtle Day

Why in News

Recently, World Turtle Day was observed on 23rd May to increase attention on conservation of Turtles and Tortoises.

- The theme for the **World Turtle Day 2020** is '**Adopt, Don't Shop**'.

Key Points

- World Turtle Day is an **annual event** that has been taking place since **2000**.
- It is being organised by the nonprofit organisation namely, **American Tortoise Rescue (ATR)**.
- It aims to protect the turtles and tortoises from illegal smuggling, exotic food industry, habitat destruction, global warming and pet trade.
- The day was observed in India by the **National Mission for Clean Ganga (NMCG)**, along with the Wildlife Institute of India (WII).



Turtle Conservation in India

- There are five species in Indian waters i.e. **Olive Ridley, Green turtle, Loggerhead, Hawksbill, Leatherback**.
 - The **Olive Ridley, Leatherback and Loggerhead** are listed as '**Vulnerable**' on the IUCN Red List of Threatened Species.
 - The **Hawksbill turtle** is listed as '**Critically Endangered**' and **Green Turtle** is listed as

'Endangered' on the IUCN Red List of Threatened Species.

- They are protected in **Indian Wildlife Protection Act of 1972**, under Schedule I.
- Turtles have been protected in India under the **Biodiversity Conservation and Ganga Rejuvenation** programme.

Turtle and its Significance

➤ Description:

- Turtles are the reptiles of the order **Testudines**, characterized by a special bony or cartilaginous shell developed from their ribs and acting as a shield.
- It can reside inside **freshwater or saltwater**.
- **Tortoise** are distinguished from other turtles by being **land-dwelling**, while many (though not all) other turtle species are at **partly aquatic**.
- Turtles are cold-blooded species.
 - **Cold blooded species** have a higher range of body temperature and move between environments to make themselves warmer or cooler. E.g. Insects, arachnids, fish, reptiles, and amphibians.
- They have very **slow metabolism** and can survive without food and water for a long time.
- According to the **International Union for Conservation of Nature (IUCN)** most of the species of turtles and tortoises are **vulnerable, endangered or critically endangered**.

➤ Significance:

- Turtles play an important role in the river by scavenging dead organic material and diseased fish by controlling the water pollution.
- They also help in maintaining healthy fish stocks in the water by giving them habitat over their body.
- Turtle populations could improve seagrass ecosystem health by removing seagrass biomass and preventing sediment formation.
- Turtles are also transporters of nutrients and energy to coastal areas.

Way Forward

- Turtles play an important role in ocean ecosystems by maintaining healthy seagrass beds and coral reefs, providing key habitat for other marine life. It also helps to balance marine food webs and facilitate

Note:

nutrient cycling from water to land. Thus, conservation of turtles will help to conserve biodiversity and to maintain natural balance.

Puntius Sanctus: New Freshwater Fish

Why in News

Recently, *Puntius Sanctus*, a new freshwater fish, has been found in Velankanni, Tamil Nadu. It has been found in a small waterbody.

- The fish has been identified and named by the Department of Zoology, BJM Government College in Kollam. Sanctus means holy (pilgrim town) in Latin.
- Species of Puntius are known from India mainly from the drainages of the Western and Eastern Ghats, as well as the Eastern Himalayas.



Key Points

- **Puntius Genus:**
 - The genus shows great species richness in Kerala and Tamil Nadu.
 - The Puntius species are known locally as **Paral** in Kerala and **Kende** in Tamil Nadu.
 - It belongs to the family 'Cyprinidae'.
- **Puntius Sanctus:**
 - It is a silver-hued fish. The species is small in size and grows to a **length of 7 cm**.
 - It is different from other species.
 - It has a protractible (extended) mouth, a pair of maxillary barbels (a sensory organ near the snout).
 - It bears lateral line scales and pre-dorsal scales.
 - The lateral line scales are found within the dermis i.e. under the skin of a fish and usually have sense organs.
 - The dorsal scale row in a fish consists of a series of deep scales devoid of spines.
- **Cyprinidae:**
 - It is the family of freshwater fish, collectively called cyprinids, that includes the minnows, goldfish, bitterlings, barb, and carps.

- **Freshwater fish** are those that spend some or all of their lives in freshwater, such as rivers and lakes, with a salinity of less than 1.05%. E.g. **Rohu, Katla, Hilsa** etc.

- It ranges from small aquarium sized species to huge fish.
- The new fish has been deposited in the **Zoological Survey of India** at Pune.
- It has also been registered with Zoo Bank of the **International Commission of Zoological Nomenclature**, the official authority for naming animals.

Zoological Survey of India

- It is a subordinate organization of the **Ministry of Environment, Forest and Climate Change** and was established in 1916.
- It is a national centre for faunistic survey and exploration of the resources leading to the advancement of knowledge on the exceptionally rich faunal diversity of the country.
- It has its **headquarters at Kolkata** and 16 regional stations located in different geographic locations of the country.

International Commission of Zoological Nomenclature

- It regulates a **uniform system of zoological nomenclature** ensuring that every animal has a unique and universally accepted scientific name.
- It creates and revises the **International Code of Zoological Nomenclature**.
- It is based in the Lee Kong Chian Natural History Museum, National University of **Singapore**.

Wildfires in Uttarakhand

Why in News

With rising mercury levels, **Uttarakhand's forest fire** season has now reached its peak.

Key Points

- A wildfire is an **unplanned fire** that is often caused by **human activity** or a **natural phenomenon** such as lightning, and they can happen at any time or anywhere.
- Wildfires occur in every continent **except Antarctica**.
- There are **two primary causes** of wildfires, viz. Human and Natural.
 - **Human Causes**

Note:



- 90% of all wildfires are caused by humans.
- Human acts of carelessness such as leaving campfires unattended and negligent discarding of cigarette butts result in wildfire disasters every year.
- Accidents, deliberate acts of arson, burning of debris, and fireworks are the other substantial causes of wildfires.
- **Natural Causes**
 - **Lightning:** A fairly good number of wildfires are triggered by lightning.
 - **Volcanic Eruption:** Hot magma in the earth's crust is usually expelled out as lava during a volcanic eruption. The hot lava then flows into nearby fields or lands to start wildfires.
 - **Temperature:** High atmospheric temperatures and dryness offer favourable conditions for a fire to start.
 - **Climate Change** is causing a gradually increasing surface air temperature, which can propagate forest fires.
 - **Weather Components:** Warmer temperatures and lower humidity cause vapour pressure deficit to increase which can dry fuels rapidly and allow fires to grow very fast
- There are **three basic types of forest fires:**
 - **Crown fires** burn trees up their entire length to the top. These are the most intense and dangerous wildland fires.
 - **Surface fires** burn only surface litter and duff. These are the easiest fires to put out and cause the least damage to the forest.
 - **Ground fires** (sometimes called underground or subsurface fires) occur in deep accumulations of humus, peat and similar dead vegetation that become dry enough to burn. These fires move very slowly, but can become difficult to fully put out, or suppress.

Way Forward

- Forest fires are among major disasters faced by India leading to massive loss of life and property and impact on the environment. A holistic approach of management of forest fires through prevention, mitigation and control can lead to better outcomes saving natural resources and loss of life and property.

Forest Fire Prevention and Management in India

- Forests are a subject in the **concurrent list (brought under this list through 42nd Constitutional Amendment Act, 1976)** of the Seventh Schedule of the Indian Constitution.
- **National Action Plan on Forest Fires (NAPFF-2018)** of Ministry of Environment, Forest and Climate Change (MoEFCC).
 - MoEFCC also provides forest fire prevention and management measures under the **Centrally Sponsored Forest Fire Prevention and Management (FPM) scheme**.
 - The FPM replaced the **Intensification of Forest Management Scheme (IFMS) in 2017**. By revamping the IFMS, the FPM has **increased the amount dedicated for forest fire work**.
 - Funds allocated under the FPM are according to a center-state cost-sharing formula, with a **90:10 ratio of central to state funding** in the Northeast and Western Himalayan regions and a **60:40 ratio for all other states**.
 - It also provides the states the flexibility to direct a portion of the **National Afforestation Programme (NAP)** and **Mission for Green India (GIM)** funding toward forest fire work.

Locusts and Urban Areas

Why in News

- Over the last few days, **swarms of locusts** have been sighted unusually even in urban areas of Rajasthan.
- Swarms have also been reported from parts of Madhya Pradesh and Vidarbha region of Maharashtra.

Key Point

- The **desert locust (*Schistocerca gregaria*)** is a short-horned grasshopper.
- Harmless when solitary, locusts undergo a behavioural change when their population builds up rapidly.
- They enter the **'gregarious phase'** by forming huge swarms that can travel up to 150 km per day, eating up every bit of greenery on their way.
- These insects feed on a large variety of crops.
 - If not controlled, locust swarms can threaten the food security of a country.

Note:



Early Arrival

- The first swarms were sighted along the India-Pakistan border on April 11, months ahead of the usual time of arrival.
 - In India, locusts are normally sighted during July-October along the Pakistan border.
- **Reason for early arrival**
 - This can be traced back to the **cyclonic storms Mekunu** and **Luban** that had struck **Oman and Yemen** respectively in 2018.
 - These turned large deserts tracts into lakes, **facilitating locust breeding** that continued through 2019.
 - Swarms attacking crops in **East Africa** reached peak populations from November, and built up in southern Iran and Pakistan since the beginning of 2020, with heavy rains in East Africa in March-April enabling further breeding.



Locusts and Urban Areas

- Locusts are being seen in urban areas not historically associated with their sightings, such as — Jaipur, MP's Gwalior, Morena and Sheopur, and recently stray swarms in Maharashtra's Amravati, Nagpur and Wardha.
- There being no crops in the fields, the locusts have moved across states attracted by green cover in search of food.
 - The swarms were **aided by high-speed wind** and thus they made their way to such **urban areas**.

Impact on Crops

- At present, chances of crop damage are low given that farmers have **already harvested their rabi crop**.
- Orange growers in Maharashtra have expressed concern but as per scientists of the Agriculture Ministry's

Locust Warning Organization (LWO), the swarm in Maharashtra would be easy to control.

- The bigger problem will come once the present swarms breed. An adult female locust lays 80-90 eggs thrice in her three-month life cycle.
 - If left uncontrolled, a swarm can grow exponentially to 40-80 million locusts per square kilometre.
 - The locusts will start laying eggs after the monsoon starts and continue breeding for two more months, with newer generations rising during the growth phase of the kharif crop.

Control Measures

- Control involves spraying insecticide on locusts' night resting places like trees.
- Till date, the LWO has carried out spraying over 21,675 hectares in Rajasthan. India has also put an order of 60 specialised insecticide sprayers with the UK, the country already has 50 such machines.
- Drones will also be used to spray the resting places.

Way Forward

- At a time India is battling Covid-19, there is a need to take measures so that it won't pose a threat to food security.
- There is no quick-fix solution to the locust menace. Beyond chemicals, pesticides, and drones, it is imperative to tackle the root cause of global warming and invest in upgrading climate resilience and adaptation techniques. An expensive and complex process, this will require global cooperation and coordination.

Invasive Species: Charru Mussel

Why in News

An invasive species named Charru mussel (*Mytella strigata*), native to the South and Central American coasts, is spreading quickly in the backwaters of Kerala.

Key Points

- **Reasons for the spread:**
 - The Charru mussel may have reached the Indian shores attached to ship hulls or as larval forms in ballast water discharges.

Note:

- Ballast is the seawater that ships carry to improve stability.
- **Cyclone Ockhi** which struck the region (South India, Sri Lanka, Maldives) in 2017, may have sped up their invasion.
- **Areas impacted:**
 - The surveys conducted in **Kerala has found presence of Charru mussel in many estuaries/ backwaters** of Kerala, which include Kadina-mkulam, Paravur, Edava-Nadayara, Ashtamudi, Kayamkulam, Vembanad, Chettuva and Ponnani etc.
 - The backwaters of Kerala comprise stretches of lakes, canals and lagoons located parallel to the coast of the Arabian Sea.
 - Ashtamudi Lake, a **Ramsar site** in Kollam district is the worst-hit due to Charu mussel. Here, **Charru mussel** has replaced the **Asian green mussel (Perna viridis)** and the edible oyster **Magallana bilineata (known locally as muringa)**.
- **Concerns:**
 - The **proliferation of Charu mussel** poses a serious threat to the **endemic species diversity** of brackish water habitats of Kerala coast.
 - This invasive species is forcing out other mussel and clam species in the backwaters and threatening the livelihoods of fishermen engaged in molluscan fisheries.
 - In **Ashtamudi lake**, the short-necked clam fisheries has obtained an eco label from the Marine Stewardship Council and about 3,000 people are dependent on fisheries here.
 - **“Ecolabelling”** is a voluntary method of environmental performance certification and labelling that is practised around the world.
 - An ecolabel identifies products or services proven environmentally preferable overall, within a specific product or service category.
 - The **Marine Stewardship Council** is an independent non-profit organization which sets a standard for sustainable fishing. It is **headquartered in London**.
 - In such a scenario, the fast-breeding Charru mussel could be seen as a ‘pest’ attack on clam fishery.

Invasive Species

- An **invasive species** is an organism that is **not indigenous**, or native, to a particular area and causes harm.
- They are **capable of causing extinctions of native plants and animals, reducing biodiversity, competing with native organisms for limited resources, and altering habitats**.
- They can be introduced to an area by ship ballast water, accidental release, and most often, by people.

Mussel

- **Mussel** is a common name for **numerous bivalve mollusks** belonging to the marine family Mytilidae and to the freshwater family Unionidae.
 - Mollusks are soft-bodied invertebrates of the phylum Mollusca, usually wholly or partly enclosed in a calcium carbonate shell secreted by a soft mantle covering the body.
- Worldwide, they are **most commonly found** in cool seas.
- In India, two species of marine mussels, green mussel (*Perna viridis*), and the brown mussel, (*P. indica*) are found in the coastal areas.
 - Farming of **green mussels** is now established as a commercial practice in India.
- The **Charru mussel** is native to the South and Central American coast.
 - Their colour varies from black to brown, purple or dark green.
 - They can survive in a range of salinity and temperature but cannot survive beyond 36°C.

Way Forward

- Completely eradicating the Charru mussel from Indian waters is going to be nearly impossible, so limiting its spread is crucial.
- There is also a need to promote studies on invasion biology and strengthen awareness on marine invasive species.

World Dugong Day 2020

Why in News

World Dugong Day is celebrated on **28th May**, every year.

Note:

Key Points

- **Dugong (Dugong dugon) also called 'Sea Cow'** is one of the four surviving species in the Order **Sirenia** and it is the only existing species of herbivorous mammal that lives exclusively in the sea including in India.
 
- They are listed as **Vulnerable** on the **IUCN Red List** and are protected in India under Schedule I of the **Wild (Life) Protection Act, 1972**.
- According to a **2013 survey report of the Zoological Survey of India (ZSI)**, there were only about 200 dugongs in the
- Dugongs are an important part of the marine ecosystem and their depletion will have effects all the way up the food chain. Proper conservation is the only way to save dugongs from extinction.
- **Threats:**
 - Dugongs graze on seagrass and the loss of **seagrass beds** due to ocean floor **trawling** is one of the most important factors behind decreasing dugong populations in many parts of the world.
 - **Trawling is a method of fishing** that involves **pulling a fishing net through the water behind one or more boats**. It is harmful to the environment because it damages the seafloor, coral reefs and other marine animals.
 - Human activities such as the destruction and modification of habitat, pollution, rampant illegal fishing activities, vessel strikes, unsustainable hunting or poaching and unplanned tourism are the main threats to dugongs.
 - Dugong meat is consumed under the wrong impression that it cools down human body temperature.
- **Steps Taken for Conservation:**
 - In February 2020, India hosted the **13th Conference of Parties (CoP)** of the **Convention on the Conservation of Migratory Species of Wild Animals (CMS)**, an environmental treaty under the aegis of the **United Nations Environment Programme (UNEP)**.
 - The **Government of India is a signatory to the CMS since 1983**.

- India has signed **non-legally binding Memorandums of Understanding (MoU)** with CMS on the conservation and management of Siberian Cranes (1998), Marine **Turtles** (2007), Dugongs (2008) and Raptors (2016).
- The **Ministry of Environment, Forests and Climate Change** constituted a 'Task Force for Conservation of Dugongs' to look into issues related to conservation of dugongs and **implementation of the 'UNEP/CMS Dugong MoU'** in India.
 - It also facilitates India to act as the leading nation in the South Asia Sub-region with respect to dugong conservation.

Banana Covid: A Novel Fungal Strain

Why in News

Recently, a novel **fungus strain Fusarium wilt TR4** has started infecting the Banana plantations in India.

- It has been **described as the equivalent of Covid-19** in Bananas. Similar to Covid-19, there is no treatment yet for the new fungal disease.

Key Points

- **The Epicentre:**
 - In the midst of the **coronavirus disease outbreak**, Fusarium wilt TR4, has devastated plantations across the globe.
 - **Ecuador**, the largest exporter of Banana is currently the epicentre.
 - Banana is the world's most globally exported fruit and the disease is breaching borders through international trade.
 - The spreading disease has impacted the \$26 billion global banana trade.
- **The strain, Tropical Race 4 (TR4):**
 - It was **first identified in Taiwan**, and has moved from Asia to the Middle East and Africa, reaching as far as Latin America.
 - It **cripples plantations by first attacking the leaves**, which turn yellow from their trailing edges before wilting away.
 - According to the **Food and Agriculture Organization of the United Nations**, TR4 is one of the "the most destructive of all plant diseases".

Note:



- **Impact in India:**
 - The **fungal strain is now spreading and threatening output in India**, the world's largest producer of bananas.
 - **Katihar and Purnea in Bihar and Maharajganj in Uttar Pradesh** are the hotspots in India.
 - **TR4** has infected the most commonly sold variety, **Grand Nain (musa acuminata)**.
 - Grand Nain: It accounts for 55% of the banana area in the country and accounts for 62% of commerce, including exports.
 - Inability to contain TR4 could impact the farm incomes and push up banana prices.
- **Measures to curb the spread:**
 - **Plant Quarantine:** Scientists recommend biosecurity measures including "plant quarantine" to slow its spread.
 - **Growing Alternative Varieties:** In hotspot Katihar, scientists have set up an experimental farm in which they are growing several cultivars. Cultivars are different varieties of the Banana species and have shown potential resistance to TR4
 - **Biopriming:** The **Indian Council of Agricultural Research** is advocating a set of measures, known as Biopriming.
 - It is a **treatment of seed with beneficial organisms**, as an alternative to treatment with pesticides, prior to sowing.
 - Seed treatment integrates biological (vaccination of seed with beneficial organism to protect seed) and physiological aspects (seed hydration) of disease control.

- **Chain of Infection:** It suggests farmers to abandon the crops whose plantations have been affected and grow rice for a year or two before returning to banana. It would help in breaking the chain of infection.

Banana

- Being a tropical crop banana grows well under the following conditions:
 - **Temperature:** 15°C – 35°C
 - **Rainfall:** an average rainfall of 650-750 mm
 - **Regional variation:** Humid tropics to dry mild subtropics
- **Soil:** Deep, rich loamy soil is most preferred for banana cultivation
- **Nutrients:** It has several nutrients like calories, protein, carbohydrate, potassium and trace quantities of vitamin C and B6.

Fusarium Wilt of Banana

- It is popularly known as **Panama disease**.
- It is a lethal fungal disease caused by the soil-borne fungus *Fusarium oxysporum*.
- It is the first disease of bananas to have spread globally in the first half of the 20th century.
- *Fusarium* has entirely wiped out Gros Michel, the dominant export variety of bananas in the 1950s.
- It was in response to this, a new resistant variety, Grand Nain, came up, which has now fallen to TR4 infection.



Note:



drishti

History

Highlights

- Veer Savarkar Jayanti

Veer Savarkar Jayanti

Why In News

On 28th May, India paid tribute to the freedom fighter, Vinayak Damodar Savarkar (Veer Savarkar) on his birth anniversary.

- He was an Indian independence activist, politician, lawyer and writer.
- He is also known as Swatantryaveer Savarkar.

Key Points

- **Birth:** VD Savarkar was born on 28th May, 1883 in Bhagur, a village near Nashik in Maharashtra.
- **Related Organisations and Work:**
 - Founded a **secret society called Abhinav Bharat Society.**
 - Went to the United Kingdom and was involved with organizations such as India House and the Free India Society.
 - Involved in the **formation of Hindu Mahasabha.**
 - He was the president of **Hindu Mahasabha from 1937 to 1943.**
 - Savarkar wrote a book titled '**The History of the War of Indian Independence**' in which he wrote about the guerilla warfare tricks used in **1857 Sepoy Mutiny.**
 - He also wrote the book 'Hindutva: who is hindu?.'
- **Trial and Sentences:**
 - Arrested in 1909 on charges of plotting an armed revolt against the **Morley-Minto reform (Indian Councils Act 1909).**
 - Arrested in 1910 for his connections with the revolutionary group India House.
 - One of the charges on Savarkar was abetment to murder of Nashik Collector Jackson and the second was waging a conspiracy under Indian penal code 121-A against the King emperor.

- Following the two trials, Savarkar was convicted and sentenced to 50-years imprisonment also known as Kala Pani and transported in 1911 to the Cellular Jail in the Andaman and Nicobar Islands.
- He was not considered by the British government as a political prisoner.
- **Death:** He died on 26th February 1966 due to fasting on his own wish of death.

Abhinav Bharat Society (Young India Society)

- It was a secret society founded by Vinayak Damodar Savarkar and his brother Ganesh Damodar Savarkar in 1904.
- Initially founded at Nasik as Mitra Mela, the society was associated with several revolutionaries and political activists with branches in various parts of India and London.

India House

- It was founded by Shyamji Kishan Verma in 1905 in London.
- It was opened to promote nationalist views among Indian students in London.

Free India Society

- It was a political organization of Indian students in England, committed to obtaining the independence of India from British rule.
- Initially an intellectual group, it became a revolutionary outfit under its founding leader, Madam Bhikaji Cama.

Hindu Mahasabha

- It was a political party formed in 1933.
- It was founded by Veer Damodar Savarkar, Lala Lajpat Rai, Madan Mohan Malviya.
- The organisation was formed to protect the rights of the Hindu community, after the formation of the All India Muslim League in 1906 and the British India government's creation of separate Muslim electorate under the Morley-Minto reforms of 1909.



Note:



drishti

Geography

Highlights

- Hotter Oceans and Supercyclones
- Heat Waves
- Chardham Pariyojana

Hotter Oceans and Supercyclones

Why in News

The **supercyclone 'Amphan'** is likely to make landfall between the Sagar islands of West Bengal and the Hatiya islands of Bangladesh.

- Cyclone Amphan (pronounced as UM-PUN) is a tropical cyclone formed over Bay of Bengal that has turned into a "super cyclonic storm (maximum wind speed is 120 knots)".
- The higher than normal temperatures in the Bay of Bengal (BoB) with the **countrywide lockdown** due to **Covid-19** pandemic have played a role turning a storm into a super cyclone.
- Additionally, the super cyclone Amphan is the strongest storm to have formed in the BoB since the super cyclone of 1999 that ravaged Paradip in Odisha.

Key Points

- **'Cyclones' as a Regular Phenomenon:**
 - The cyclones gain their energy from the heat and moisture generated from warm ocean surfaces.
 - The BoB has higher Sea Surface Temperature (SST) compared to the Arabian Sea. Some of the reasons for higher SST of BoB are:
 - **Slow Flowing Winds:** It keeps temperatures relatively high i.e. around 28 degrees around the year.
 - **Higher Rainfall:** It provides required humidity for cyclone formation.
 - **Constant Inflow of Fresh Water:** The inflow from the Ganga and Brahmaputra rivers makes it impossible for the warm water to mix with

the cooler water below, making it ideal for a cyclonic depression.

- On the other hand, the Arabian Sea receives stronger winds that help dissipate the heat, and the lack of constant fresh water supply helps the warm water mix with the cool water, reducing the temperature.
- Additionally, the tropical cyclones in these seas are a typical feature of the summer months and play a role in aiding the arrival of the monsoon.
- **Unusual Higher Temperature in BoB:**
 - In 2020, the BoB has observed record summer temperatures due to the global warming from fossil fuel emissions that has been heating up oceans.
 - The **cyclone Fani** in 2019 was also fuelled by high temperatures in the BoB.
 - For the first two weeks of May, there were maximum surface temperatures of 32-34°C consecutively. These are record temperatures driven by climate change observed until now.
 - Such unusual warming around India is no longer restricted to just the BoB but also the Arabian Sea and the Indian Ocean. It makes storm prediction less reliable as well as disrupting monsoon patterns.
- **Impact of Lockdown:**
 - Reduced particulate matter emissions during the lockdown resulted in **fewer aerosols**, such as black carbon, that are known to reflect sunlight and heat away from the surface.
 - Every year, the particulate pollution from the Indo-Gangetic plains is transported towards the BoB which influences the formation of clouds over the ocean.
 - The minimal presence of heat and sunlight reflecting aerosols in BoB resulted in fewer clouds and more heat. Further, it raised the temperature of BoB by 1-3°C

Note:



higher than normal. Thus, the whole phenomenon has amplified the strength of the cyclone.

➤ Overall Impact:

- The higher temperatures and minimal presence of aerosols helped the cyclone Amphan to intensify itself from a **category-1 cyclone** to category-5 in 18 hours that is an unusually quick evolution.

Tropical Cyclones

- Tropical Cyclones are the formation of a very low-pressure system with very high-speed winds revolving around it. Factors like wind speed, wind direction, temperature and humidity contribute to the development of cyclones.
- Before cloud formation, water takes up heat from the atmosphere to change into vapour. When water vapour changes back to liquid form as raindrops, this heat is released to the atmosphere.
- The heat released to the atmosphere warms the air around. The air tends to rise and causes a drop in pressure. More air rushes to the centre of the storm. This cycle is repeated.
- Hurricanes derive their energy from heated seawater which can be prevented by presence of upper-level-winds that disrupt the storm circulation forcing it to lose its strength.

Heat Waves

Why in News

Recently, the **India Meteorological Department (IMD)** has forecasted the “**heatwave to severe heatwave conditions**” over northwest, central and adjoining peninsular India along with heavy rain over northeast India.

- Many parts of coastal Andhra Pradesh, Odisha and Maharashtra have also observed **increase in temperatures above 42°C**, triggering heatwave conditions.
- The heat wave has been observed due to **dry northwesterly winds** prevailing over northwest and central India.

Heat Wave

- A heat wave is a period of **abnormally high temperatures**, more than the normal maximum temperature that occurs during the summer season in the North-Western and South Central parts of India.

India Meteorological Department

- The India Meteorological Department (IMD) was established in **1875**.
- It is an agency of the **Ministry of Earth Sciences** of the Government of India.
- It is the principal agency responsible for meteorological observations, weather forecasting and seismology.

- Heat waves typically occur **between March and June**, and in some rare cases even extend till July.
- Higher daily peak temperatures and longer, more intense heat waves are becoming increasingly frequent globally **due to climate change**.

Criteria for Heat Waves

- The heat wave is considered when the maximum temperature of a station reaches at least **40°C for Plains** and at least **30°C for Hilly regions**.
- If the **normal maximum temperature** of a station is **less than or equal to 40°C**, then an **increase of 5°C to 6°C** from the normal temperature is considered to be **heat wave condition**.
 - Further, an increase of 7°C or more from the normal temperature is considered as **severe heat wave condition**.
- If the normal maximum temperature of a station is **more than 40°C**, then an **increase of 4°C to 5°C** from the normal temperature is considered to be **heat wave condition**. Further, an **increase of 6°C or more** is considered as **severe heat wave condition**.
- Additionally, if the actual maximum temperature remains **45°C or more** irrespective of normal maximum temperature, a **heat wave is declared**.

Health Impacts of Heat Waves

- The health impacts of Heat Waves typically involve **dehydration, heat cramps, heat exhaustion and/or heat stroke**.
- It also causes heat cramps, fatigue, weakness, dizziness, headache, nausea, vomiting, muscle cramps and sweating.
- The extreme temperatures and resultant atmospheric conditions adversely affect people living in these regions as they cause physiological stress, sometimes resulting in death.

Note:

Way Forward

- While climate change does have a strong link with the occurrence of extreme weather events, it **isn't the cause for extreme weather events**. Episodes of heat waves are growing more common as climate change intensifies. Therefore, the intensity and frequency of heatwaves can be reduced if the global community adopts and adheres to a lower emissions scenario in the future.

Chardham Pariyojana**Why in News**

The **Border Roads Organisation (BRO)** has completed **construction of a 440 m long tunnel below the Chamba town** on the Rishikesh-Dharasu road highway (National Highway - 94).

- The construction of the tunnel is a **part of the Chardham Pariyojana**.

Key Points

- It is a programme taken up by the Ministry of Road Transport and Highways **for connectivity improvement for Chardham** (Kedarnath, Badrinath, Yamunotri and Gangotri) in Uttarakhand.
- The cost of the project is around Rs. 12,000 Crore.

- It envisages improvement as well as development of 889 km length of national highways.
- **Implementing Agencies:** Uttarakhand State Public Works Department (PWD), BRO and the National Highway & Infrastructure Development Corporation Limited (NHIDCL).
- **Project Mode:** The work under the programme is being implemented on **Engineering, Procurement and Construction (EPC)** mode.
 - Under the EPC mode, the **project cost** is completely borne by the government.
 - However, the contractor is directly responsible for **ensuring quality of the work** as well as rectification of defects and maintenance of the project stretch for a period of 4 years after completion of construction.

Border Roads Organisation

- It was conceived and **raised in 1960 by Pandit Jawaharlal Nehru** for coordinating the speedy development of a network of roads in the North and the North Eastern border regions of the country.
- It works under the **administrative control of the Ministry of Defence**.
- It has diversified into a large spectrum of construction and development works comprising airfields, building projects, defence works and tunneling and has endeared itself to the people.



Note:

Art & Culture

Highlights

- Release of 11th Panchen Lama
- Katkari Tribe
- Purandara Dasa
- Solarisation of Konark Sun Temple

Release of 11th Panchen Lama

Why in News

Recently, the USA has urged China to release Tibetan Buddhism's 11th Panchen Lama, who was taken into captivity at the age of six by Chinese authorities.

Key Points

- In 1995, a young Tibetan boy **Gedhun Choekyi Nyima** was recognised as the 11th Panchen Lama, **the second highest spiritual authority in Tibetan Buddhism** after the Dalai Lama.
- Days after his recognition Nyima was detained by Chinese authorities and became the **world's youngest political prisoner**.
- Thereafter, China appointed its own Panchen Lama, **Gyaltzen Norbu**, who has been described by exiles as a **"stooge of the atheist Chinese Communist Party government"**.
 - The incident threatened the **unique identity of Tibetan Buddhism** and created **religious freedom issues** in Tibet.
- The Dalai Lama has in the past strongly criticised China for meddling in the system of reincarnation of the Dalai Lamas and Panchen Lamas.

Background

- Tibet is governed as an **autonomous region of China**. Beijing claims a centuries-old sovereignty over the region but many Tibetans argue that Tibet was colonised.
- China sent in thousands of troops to enforce its claim on the region in 1950.

- Some areas became the **Tibetan Autonomous Region** and others were incorporated into neighbouring Chinese provinces.
- In 1959, after a failed anti-Chinese uprising, the 14th **Dalai Lama fled Tibet and set up a government in exile in India**.
- **China views the Dalai Lama as a separatist threat**, although he has repeatedly stated that his goal is for Tibetan autonomy rather than independence.

Tibetan Buddhism

- **Origin:**
 - Buddhism became a major religion of Tibet towards the end of the 8th century CE.
 - The **Tibetan king, Trisong Detsen**, who invited **two Buddhist masters namely, Shantarakshita and Padmasambhava from India to Tibet**. These two masters had helped to translate important Buddhist texts into Tibetan.
 - **Shantarakshita** was the **abbot** of Nalanda in India. He **built the first monastery in Tibet**.
 - **Padmasambhava** was a **mahasiddha** (master of miraculous powers).
- **Geographical Reach:**
 - Tibetan Buddhism is not only found in Tibet but also across the **Himalayan region from Ladakh to Sikkim as well as parts of Nepal**.
 - It is the **state religion of the kingdom of Bhutan**.
 - It also spread to **Mongolia and parts of Russia** (Kalmykia, Buryatia and Tuva).
 - **Tara** (Tibetan Sgrol-ma) is a **Buddhist saviour-goddess**, widely popular in **Nepal, Tibet and Mongolia**.
- **Special Features of Tibetan Buddhism:**
 - Tibetan Buddhism **combines the essential teachings of Mahayana Buddhism with Tantric and Shamanic**

Note:



and material from an **ancient Tibetan religion called Bon**.

- **Relationship between life and death:** A proper understanding of the subject of death and dying is held to be indispensable towards having a fuller, happier life.
- **Lama:** Lama is a teacher.
- **Deities:** These deities are not gods but aspects of enlightened qualities like wisdom and compassion. The patron deity of Tibet is **Avalokiteshvara**, the Buddha of Compassion.
- **Rituals:** Temple ceremonies are often held with brass instruments, cymbals and gongs and musical and impressive chanting by formally dressed monks.

Katkari Tribe

Why in News

Katkari tribal youth from Shahpur in **Maharashtra** are making a name by **selling Giloy and other products online** during lockdown.

- They received help under the **Pradhan Mantri Van Dhan Yojana (PMVDY)** run by the **Tribal Cooperative Marketing Development Federation of India (TRIFED)**.
 - TRIFED is a national level apex organisation functioning under the administrative control of the Ministry of Tribal Affairs.
- **Giloy** (*Tinospora Cordifolia*) is an Ayurvedic herb that has been used and advocated in Indian medicine for ages..

Key Points

- Katkari is one of the **75 Particularly Vulnerable Tribal Groups (PVTGs)**.
- Katkaris are **located** primarily in Raigad and in parts of Palghar, Ratnagiri and Thane districts of Maharashtra as well as in some places of Gujarat.
- Katkaris were historically forest dwellers.
 - The name **Katkari is derived from a forest-based activity** – the making and bartering or sale of Catechu from the Khair tree (*Acacia Katechu*).
 - **Catechu** is an extract of acacia trees used variously as a food additive, dye, etc. It is extracted by boiling the wood in water and evaporating the resulting brew.

- The British administration had classified them under the **Criminal Tribes Act, 1871**.
 - The Act described certain groups of people as 'habitually criminal'. The stigma associated with the Act continues.

Pradhan Mantri Van Dhan Yojana

- Pradhan Mantri Van Dhan Yojana (PMVDY) is a **retail marketing led value addition plan for Minor Forest Produce (MFP)**, meant for forest-based tribes to optimize the tribal income, locally.
 - MFP means **all non-timber forest produce of plant origin** and includes **bamboo, canes, fodder, leaves, gums, waxes, dyes, resins and many forms of food including nuts, wild fruits, honey, lac, tusser etc**.
 - It provides both **subsistence and cash income** for people who live in or near forests. They form a major portion of their food, fruits, medicines and other consumption items and also provide cash income through sales.
- Under the program, MFP-based tribal groups / enterprises of around 300 members are formed for collection, value addition, packaging & marketing of Minor Forest Produces (MFPs).
 - These tribal enterprises are in the form of **Van Dhan Self Help Groups (SHGs)** which is a group of 15-20 members and such 15 SHG groups will further be federated into a larger group of **Van Dhan Vikas Kendras (VDVKs)** of around 300 members.
- TRIFED supports the VDKs through providing them with model business plans, processing plans & tentative list of equipment for carrying out the value addition work of MFPs.

Purandara Dasa

Why in News

The **Department of Archaeology, Heritage and Museums, Karnataka** will soon commence field research work at **Araga in Malnad (Malenadu) region in Karnataka**, to end the **speculations regarding the birthplace of Purandara Dasa**.



Note:

Key Points

- **Issue About Birthplace:**
 - It was widely **believed** that the Purandara Dasa was born in **Purandharagad, Maharashtra**. However, many **people in Malnad claimed that he hailed from their region**.
 - On **literary evidence**, it is being **speculated that Purandara Dasa was born near Araga**. However, **definitive conclusions can be reached only if tangible archaeological evidence** like inscriptions, coins, remains of building-related to the name Srinivasa Nayaka or Purandara Dasa **are found**.
- **About Purandara Dasa:**
 - Purandara Dasa belonged to the **Vaishnava tradition** during the **Vijayanagar rule**.
 - Prior to the adoption of Vaishnava tradition, he was a rich merchant and was called **Srinivasa Nayaka**.
 - The proponents of the theory that Purandara Dasa was born in Malnad, refer to his older name and point out that **Nayaka title** was attributed to locally influential people, including wealthy merchants in Malnad during the Vijayanagar rule.
 - He was a great **devotee of Lord Krishna**, a **poet** and a **musician**. He is considered the **father of Carnatic Music**.
 - He formalized the music system which was a **blend of various traditions of South India and the musical science** as explained in the Vedas.
 - He **identified 84 ragas** and devised a system of teaching Carnatic music in graded lessons.
 - He **composed songs in Kannada and Sanskrit** with the pen name **Purandara Vithala**.
 - In his compositions, he expressed his love for Sri Krishna **describing various aspects of Krishna's life**.

Solarisation of Konark Sun Temple

Why in News

The Government of India has launched a scheme for **100% solarisation of Konark sun temple and Konark town in Odisha**.

- The scheme will meet all energy requirements of Konark town with solar energy.

Key Points

- **Objective:** To take forward the Prime Minister's vision to develop the historical **Sun temple town of Konark in Odisha as 'Surya Nagri'**.
 - To convey a message of synergy between the modern use of solar energy and the ancient Sun Temple and the importance of promoting solar energy.
- **Plan:** It envisages setting up of the 10-MW grid connected solar project and various solar off-grid applications such as solar trees, solar drinking water kiosks and off-grid solar power plants with battery storage.
- **Funding: 100% Central Financial assistance (CFA)** support of around Rs. 25 crore through the Ministry of New and Renewable Energy.
- **Implementation Agency:** Odisha Renewable Energy Development Agency.

Konark Temple

- Konark was built by King **Narasimhadeva I** of the **Ganga Dynasty (1238-1264AD)** in the 13th century and is located in Eastern Odisha near the sacred city of Puri.
- The temple is designed in the shape of a colossal chariot. It is dedicated to the **sun God**.
 - There are two rows of 12 wheels on each side of the Konark sun temple.
 - The seven horses are said to symbolize the seven days of the week.
- The temple was used as a navigational point by European sailors. They referred to it as the **'Black Pagoda'** due to its dark colour and its magnetic power that drew ships into the shore and caused shipwrecks.
- It is the culmination of **Odisha temple architecture**.
- It was declared a **UNESCO world heritage site in 1984**.



Note:

Social Issues

Highlights

- Endemic Disease
- Food Systems
- Drop in Institutional Deliveries
- Covid-19 Halts Global Vaccination Programme

Endemic Disease

Why in News

Recently, the **World Health Organisation (WHO)** predicted that novel coronavirus could become endemic to the world.

- The rapid spread of **Covid-19** across the world has been characterised as Pandemic by the WHO.
- Though India has made great efforts in containing the spread of the virus, the probability of its conversion into the category of endemic would be a great vulnerability.

Key Points

- **Endemic Disease:**
- A disease is called endemic when the presence or usual prevalence of its infectious agent is constant within a given geographical area or population group.
- When the cases begin to rise, it is classified as an epidemic. If this epidemic has been recorded in several countries and areas, it is called a pandemic.
- Some examples of endemics include chicken pox and **malaria**, where there are a predictable number of cases every year in certain parts of the world.
- According to the WHO, the novel coronavirus may become just another endemic virus in communities, and may never go away.
- **R0 and Spread of the Disease:**
 - The mathematical figure '**R0**' (pronounced "**R-naught**") indicates how fast an infection is spreading.
 - It is called the basic reproduction number and indicates the average number of people who will contract the virus from a person who has already been infected, in a population that does not have immunity for the said disease.

- If **R0=1**, then the disease is endemic.
- When **R0>1**, it implies that the cases are increasing and that the disease will eventually become an epidemic.
- **When a Disease Becomes Epidemic:**
 - The Disease becomes "**increasingly tolerated**" and the responsibility of protecting against it shifts from the government to the individual.
 - This means, rather than government agencies actively engaging in tracking and identifying cases, the individuals themselves will be responsible for managing risk from the disease and seeking care.
 - The sociopolitical response to the disease may also change, with investment in the disease becoming institutionalised along with the disease-inducing behavioural changes in people.
 - Epidemic diseases typically have **higher mortality and morbidity** than the diseases which have become endemic, owing to lack of clinical experience and knowledge. Over time, effective prevention and treatment interventions emerge for the disease that has become endemic.

Types of

Endemic Diseases

- **Holoendemic Diseases:** This kind of endemic disease affects mostly children. This infection is highly prevalent in the early years of life. The adult population do not show traces of diseases as much as children do. Malaria is a type of holoendemic disease.
- **Hyperendemic Diseases:** These types of endemic diseases are constantly present at a high rate and are found among all age groups equally. E.g. African Sleeping Sickness and Chicken Pox.

Note:

Food Systems

Why in News

According to the **Global Nutrition Report 2020**, food systems should be inclusive, local and diverse to address food security and malnutrition and build economic and climate resilience.

Key Points

- **Food systems**
 - A food system is a composite of the environment, people, inputs, processes, infrastructures, institutions, etc.
 - Production, processing, distribution, preparation and consumption of food are a part of food systems.
 - They also include the outputs of such activities, including socio-economic and environmental outcomes.
- **Reducing malnutrition through food systems**
 - By adjusting food systems away from staples like wheat and rice towards non-staples like vegetables, fruits, fish, nuts etc., malnutrition can be reduced.
 - More incentives towards millets, and non-staples will make production of healthy food attractive to producers and therefore improve the availability of more nutritious food, especially for the rural poor.
 - Procurement of nutritious and climate-resilient crops like sorghum and millets should become the policy of the government.
 - Their consumption should be increased through public food distribution schemes and creating awareness on the health benefits of these crops.
 - Child malnutrition is a risk factor that can keep India from fulfilling all its child mortality related Sustainable Development Goals (e.g. SDG 2: Zero Hunger).
- **Role of small farm holders**
 - Small farm holders who usually do not have access to big value chains will be critical in improving food systems.
 - Incentivising and hand-holding them to transition to diverse crops may improve local value chains as better access enables income enhancement.
- **Food systems and climate change**

- Smaller and localised value chains instead of supermarket driven long-value chains can reduce carbon footprints.
- Similarly, climate-resilient and less water intensive crops should be incentivised and popularised among farmers and consumers alike.

Drop in Institutional Deliveries

Why in News

Recently, the **data from the states of Chhattisgarh and Jharkhand** has reported a drop in the institutional deliveries.

Key Points

- **Current Scenario in Two States:**
 - **Chattisgarh:** It has recorded a **drop by 15.39 %** in April compared to the numbers recorded in March.
 - In February 2020, before the lockdown was imposed, the State had recorded 37,984 institutional deliveries . But following the lockdown, the number of institutional deliveries fell to 32,529.
 - The State has recorded an increase in the percentage of institutional deliveries from **44.9 to 70.2 between NFHS 3 (2005-06) and NFHS 4 (2015-16)**.
 - Jharkhand: The state had listed 52,000 women for scheduled deliveries in May, out of these only 5.9% of these were conducted in medical institutions by May 21.
 - The State has recorded an increase in the percentage of institutional deliveries from **40.1 % to 61.9 % between NFHS 3 (2005-06) and NFHS 4 (2015-16)**.
- **Reasons for Drop in Institutional Deliveries:**
 - The **public transport has been majorly affected** due to **nationwide lockdown** imposed to contain the spread of the **Covid-19 pandemic**. Thus reaching hospitals from villages became difficult.
 - The **declared Covid-19 hospitals have created a fear of infection** and thus people are avoiding physical contacts with the hospitals.
 - Many deliveries are being carried out at small private nursing homes to avoid movement and related Covid-19 spread.

Note:



Institutional Deliveries in India

➤ Description:

- **Institutional delivery means giving birth to a child in a medical institution** under the overall supervision of trained and competent health personnel.
- It also signifies an availability of amenities to handle the situation and save the life of the mother and child.

➤ National Scenario:

- Over the past two decades, India has made progress in increasing the number of institutional deliveries.
 - According to the **National Family Health Survey (NFHS-4)**, institutional deliveries have **increased from 39% in 2005-06 to 79% in 2015-16**.
 - Further, the institutional births in public institutions have increased from 18% to 52% in the same time period.

➤ Step Taken to Increase Institutional Deliveries:

- **Janani Suraksha Yojana: Janani Suraksha Yojana (JSY)** is a 100% **centrally sponsored scheme** which is being implemented with the objective of reducing maternal and infant mortality by promoting institutional delivery among pregnant women.
- **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA):** It has been launched to focus on conducting special AnteNatal Check-ups (ANC) check up on 9th of every month with the help of Medical officers to detect and treat cases of anaemia.
- **Pradhan Mantri Matru Vandana Yojana (PMMVY):** It is a maternity benefit programme being implemented in all districts of the country with effect from 1st January, 2017.
- **LaQshya Programme: LaQshya (Labour room Quality Improvement Initiative)** intended to improve the quality of care in the labour room and maternity operation theatres in public health facilities.

- The **entire health machinery is battling Covid-19**, so non-Covid health services experience a lack of medical staff.

Way Forward

- The entire health machinery is **battling Covid-19 but non-Covid health services** should not compromise which are the base of the health infrastructure of the country.
- The government **should ensure adequate availability of medical staff, emergency medical services such as ambulance, vaccinations, maternity care, etc.** to the urban as well as rural areas.
- The balance of the **Covid and non-Covid medical services** is need of the hour and the government needs to ensure the implementation of the same in the future.

Covid-19 Halts Global Vaccination Programme

Why in News

As per the report released by the **World Health Organisation (WHO)** and partners, **nearly 80 million children under the age of 1 are at risk of contracting deadly but vaccine preventable diseases** such as **measles, polio** and diphtheria.

- This is so because many countries have **postponed their vaccine campaigns due to Covid-19**.
- The report has come **ahead of the Global Vaccine Summit on 4th June**, at which world leaders are expected to come together to help maintain immunization programmes and mitigate the impact of the pandemic in lower-income countries.
 - The summit will provide **an opportunity for the international community to pledge its support for Gavi's five-year strategy (2021-2025)** which is aimed at immunizing 300 million children and saving up to 8 million lives.
- The **United Nations Children's Fund (UNICEF)**, the Sabin Vaccine Institute (Washington, USA) and **Global Alliance for Vaccines and Immunizations (GAVI)** are the partner organisations.

Key Points

- **Data:**
 - **More than half (53%) of the 129 countries** where data were available reported **moderate-to-severe disruptions, or a total suspension of vaccination services** during March-April 2020.

Note:



Immunization

- It is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine.
- **Functioning:**
 - A vaccine usually consists of two parts and is usually given through an injection. The first part is the **antigen**, which is a piece of disease one's body must learn to recognise. The second part is the **adjuvant**, which sends a danger signal to the body and helps the immune system to respond strongly against the antigen.
 - In simple terms, vaccines work by exposing a person to a safer version of a disease. While the body responds to the vaccine, it builds an **adaptive immune system**, which helps the body to fight off the actual infection in the future.
- According to the WHO, vaccination prevents between **two-three million deaths each year**, a figure that will rise by another 1.5 million if vaccine coverage improves.
- **Reasons for the disruption:**
 - Vaccination, which is typically done in mass campaigns, has been stopped due to **fear of breaking social distancing guidelines** needed to stop the spread of Covid-19.
 - **Health workers** who provide vaccinations have also been **diverted to help with the response to the pandemic**.

- Also, there has been a **significant delay in planned vaccine deliveries** due to lockdown measures and reduction in the number of available flights.
 - More than 40 of Africa's 54 nations have closed their borders, though some allow cargo and emergency transport.

Concerns:

- Disruption to immunization programs from the Covid-19 pandemic threatens to undo decades of progress against vaccine-preventable diseases like Measles, Polio and Diphtheria.
- According to the experts, children need routine immunizations before the age of 2.

Way Forward

- There is an urgent need to focus upon the **Global Vaccine Action Plan 2011-2020** that is a framework to prevent millions of deaths by 2020 through more equitable access to existing vaccines for people in all communities.
- It is equally important for the countries to give importance to the **United Nations Sustainable Development Goal 3** i.e. Good Health and Well being.
- There is a need for an immediate action plan to restart the vaccination programmes through better health infrastructure and medical equipment during the corona crisis.
- Countries should start efforts at individual level e.g. India can expedite the vaccination programmes under the **Mission Indardhanush**.



Note:



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Security

Highlights

- *Illicit Drug Supply and Covid-19: UNODC*

Illicit Drug Supply and Covid-19: UNODC

Why in News

Recently, the United Nations Office on Drugs and Crime (UNODC) released a report on ‘**Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges**’.

- According to this report, **Covid-19** induced **lockdowns and movement restrictions** may lead to an initial **statistical reduction in drug seizures**, but **without a real change in terms of supply**.
- In other words, Covid-19 is **unlikely to have any effect on illicit drug supply**.

Key Points

- **Shifting of Priorities:** Rearrangement of governments’ priorities and resources to tackle the **pandemic** could threaten the efforts to strengthen drug prevention and treatment programmes.
- **No Direct Correlation:** Not every fluctuation in terms of drug seizures, prices, drug-related arrests or deaths in the coming months would be a direct or indirect consequence of the outbreak.
- **Quick and Flexible Response:** Active organised crime groups have shown flexibility to respond to shortages of supplies and have raised risk levels on certain trafficking routes.
- **Local Capacities:** Main synthetic drug of concern in the region, Methamphetamine (also called meth), was manufactured, trafficked and consumed without the need for globalised supply chains.

Indian Context

- India reported a substantial increase in seizures of

Amphetamine-Type Stimulants (ATS), most of which are suspected to be meth.

- The reasons behind the spike are:
 - Growth in trafficking of meth from the **Golden Triangle** overland to Bangladesh, with some routes crossing India.
 - The Golden Triangle represents the region coinciding with the **rural mountains of Myanmar, Laos, and Thailand**.
 - It is Southeast Asia’s main opium-producing region and one of the oldest narcotics supply routes to Europe and North America.
 - Use of maritime trafficking routes from Myanmar along the Andaman Sea, some of which cross Indian territorial waters.
- India is in the middle of two major illicit opium production regions in the world, the Golden Crescent in the west and the Golden Triangle in the east.

Golden Crescent

- This region of South Asia is a principal global site for opium production and distribution.
- It comprises **Afghanistan, Iran, and Pakistan**.

Challenges

- **Easy Borders:** The borders are porous and difficult to control in the lower Mekong region so cross-border movements in many places are not significantly hindered by Covid-19 measures.
- **Evolving Ways of Trafficking:** The methods of containerised trafficking, couriers and body-packing have reduced due to shutting down of borders and trade. However, dealers might come up with other ways limiting the impact of reduced trade.
- **Limited Control:** There is limited government control in the Golden Triangle, trafficking would continue at high volumes.

Note:

- **Unaffected Supply:** The supply of precursor chemicals is not likely to be disrupted because major organised crime groups source chemicals through direct diversion from industry and not diversion from illicit overseas trade channels.
- **Lowest Price Level:** The price of meth has dropped to the lowest level in a decade with the surge of supplies. This has in turn increased its affordability and, therefore, use.
- **Increased Crime:** Changed methods to access drugs and economic hardship might reduce the disposable income of some drug users, and result in increased crime.
 - Street dealing of drugs might be significantly impacted and altered due to movement restriction and social distancing.
- **Additional Risks:** Vulnerable populations of drug users may be exposed to additional risks as funding is re-prioritised, access to programmes and services becomes difficult and activities of treatment providers are hampered as they are dealing with the pandemic.

United Nations Office on Drugs and Crime

- Established in **1997** and was named **UNODC in 2002**.
- It acts as the Office for Drug Control and Crime Prevention by combining the United Nations International Drug Control Program (UNDCP) and the Crime Prevention and Criminal Justice Division of the United Nations Office at **Vienna**.
- UNODC publishes the **World Drug Report**.

Way Forward

- Additional efforts would be required at the national, regional, and international level to carefully analyse methods and trends to understand changes to drug markets in the wake of the pandemic.
- Moreover, methods or procedures to deal with illicit drug supply, their usage must be institutionalised in order to ensure that fight against this menace is not compromised in face of a pandemic or any other crisis.



Note:



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Miscellaneous

Highlights

- Defence Testing Infrastructure Scheme
- Statehood Day of Sikkim
- Missile Park 'Agneprastha'
- Odisha Promotes Contract Farming
- International Day of Families
- GOAL Programme
- International Tea Day
- Sonic Boom
- Quantum Entanglement

Defence Testing Infrastructure Scheme

Why in News

Recently, the government has approved the launch of '**Defence Testing Infrastructure Scheme (DTIS)**' in order to give a **boost to domestic defence and aerospace manufacturing**.

Background

- The Government has accorded high priority to development of the manufacturing base of Defence and Aerospace sectors in the country under "**Make in India**" initiative to reduce dependence on imports.
- In the above context, the government has already announced establishment of **Defence Industrial Corridors (DICs) in Uttar Pradesh and Tamil Nadu**.
- But, still one of the main impediments for domestic defence production is **lack of easily accessible state-of-the-art testing infrastructure**.
- Defence Testing Infrastructure is **capital intensive** requiring continuous upgradation and it is not economically viable for individual defence industrial units to set up in-house testing facilities.

Key Points

- **Objectives:**
 - The Scheme aims to promote indigenous defence production, with special focus on participation of **MSMEs and Start Ups by bridging gaps in defence testing infrastructure in the country**.

- It will also help to provide easy access and to meet the testing needs of the domestic defence industry.
- It will facilitate indigenous defence production, consequently reduce imports of military equipment and help make the country self-reliant.
- **Finance and Cooperation:**
 - The Scheme has an outlay of **Rs 400 crore** for creating state of the art testing infrastructure over the **duration of five years**.
 - It envisages to set up test facilities in **partnership with private industry**.
 - The projects under the Scheme will be provided with up to **75% government funding in the form of 'Grant-in-Aid'**.
 - The remaining **25% of the project cost** will have to be borne by the **Special Purpose Vehicle (SPV)** whose constituents will be **Indian private entities and State Governments**.
 - Only private entities registered in India and State Government agencies will qualify for forming the implementation agency for the Scheme.
 - The SPVs under the Scheme will be registered under Companies Act 2013.
- **Location of DTISs:**
 - The Scheme aims at setting up Greenfield Defence Testing Infrastructure mainly in DICs but is not limited to setting up Test Facilities in the DICs only.

Statehood Day of Sikkim

Why in News

On the **Statehood Day of Sikkim (16th May)**, the Prime Minister greeted the people of the state and praised

Note:

the traditions and culture of the state highlighting its contributions to the national progress.

Key Points

- Sikkim is located in the **northeastern part** of the country, in the **eastern Himalayas** and is **one of the smallest states** in India.
- It derives its name from the **Limbu** (a tribe) words *su him*, meaning **'new house'**.
- **Capital: Gangtok.**
- **Borders:**
 - **Tibet Autonomous Region of China** to the north and northeast, **Bhutan** to the southeast, Indian state of **West Bengal** to the south and **Nepal** to the west.
 - Sikkim is of **great political and strategic importance** for India because of its location along several international boundaries.
- **History:**
 - Sikkim became a **protectorate of India in 1950** following the **Indo-Sikkimese Treaty**, with India assuming responsibility for the external relations, defense and strategic communications of Sikkim.
 - Sikkim became the **22nd state** of India on **16th May 1975**, following a **statehood demand** from the political leaders.
 - The **Namgyal dynasty** ruled Sikkim until 1975.
- **Geography:**



- **Mount Kanchenjunga**, India's highest peak and the world's third highest mountain **lies in Sikkim**.
 - The **Kanchenjunga National Park (KNP)** (established in **1977**), near the peak is among the largest of India's high-elevation conservation areas.
 - KNP was designated a **World Heritage Site** in **2016** under the **'mixed' category** (sites containing elements of both natural and cultural significance).
- Sikkim is drained by the **Teesta river** and its **tributaries** such as the Rangit, Lhonak, Talung and Lachung.
 - **Teesta river water conflict** is one of the most contentious issues between **India and Bangladesh**.
 - Teesta river is a **tributary of Brahmaputra river**.

Missile Park 'Agneeprastha'

Why in News

- Recently, the foundation stone for a **missile park "Agneeprastha"** was laid at INS Kalinga.
- A **2 MegaWatts (MW) solar photovoltaic plant** was also commissioned at INS Kalinga.
 - This is in tune with the initiative of the Union government to **promote solar power** and the **objective to achieve 100 GW** of solar power by 2022 as part of the **National Solar Mission**.
 - Launched in **2010**, the National Solar Mission is **one of the eight key components of the National Action Plan on Climate Change (NAPCC)**.
 - INS Kalinga is a premier Naval Establishment located on the Visakhapatnam- Bheemunipatnam beach road under the **Eastern Naval Command**.

Key Points

- The Missile Park 'Agneeprastha' **aims to capture glimpses of missile history** of INS Kalinga from its establishment in 1981 till date.
- It will be **dedicated to all the officers, sailors and support staff of INS Kalinga**.
- It will also commemorate **the award of the prestigious Unit Citation to INS Kalinga** for the year 2018-19.
- It has been set up with a **replica of missiles and Ground Support Equipment (GSE)** that showcase the evolution of missiles handled by the unit.

Note:

- **P-70 'Ametist', an underwater launched anti-ship missile** from the arsenal of the old 'Chakra' (Charlie-1 submarine) which was in service with Indian Navy during 1988-91 is the main attraction point in the Park.
- Agneeprastha will provide a one-stop arena for motivation and stimulation of curious minds regarding the missiles and related technologies, from school children to Naval personnel and their families.

Odisha Promotes Contract Farming

Why in News

Recently, the Odisha government has promulgated an ordinance allowing investors and farmers to enter into an agreement for **contract farming**.

- The contract farming has been allowed in view of the continuing **uncertainties** due to the **Covid-19 pandemic**.

Key Points

- **Aim:**
 - The ordinance aims to facilitate both farmers and sponsors to develop **mutually beneficial and efficient** contract farming systems.
 - It is also expected to improve the production and marketing of agricultural produce and livestock while promoting farmers' interest.
- **Contract Farming:**
 - Contract farming signifies an agricultural production (including livestock and poultry) based on a **pre-harvest agreement** between buyers (such as food processing units and exporters) and producers (farmers or farmer organisations).
 - The producer can sell the agricultural produce at a specific price in the future to the buyer as per the agreement.
 - Under contract farming, the **producer can reduce the risk** of fluctuating **market price and demand**. The **buyer** can reduce the **risk of non-availability of quality produce**.
 - **Regulations:**
 - In India, contract farming is regulated under the **Indian Contract Act, 1872**.

- In addition, the **Model Agricultural Produce Market Committee (APMC) Act, 2003** provides specific provisions for contract farming, like compulsory registration of contract farming sponsors and dispute settlement.
- Since **agriculture is a state list** subject, therefore contract farming is **not uniform**.
 - The **NITI Aayog** observed that market fees and other levies are paid to the **APMC** for contract farming when no services such as market facilities and infrastructure are rendered by them.
 - Thus, it has been recommended that contract farming should be out of the ambit of APMCs. Instead, an **independent regulatory authority** must be brought in to disengage contract farming stakeholders from the existing APMCs.
- Therefore, the Ministry of Agriculture came out with a **draft Model Contract Farming Act, 2018**.
 - The draft Model Act seeks to create a regulatory and policy framework for contract farming. Based on this draft Model Act, legislatures of states can enact a law on contract farming.

Advantages:

- Contract farming addresses the problem of **low investment** in agriculture and ensures a supply of quality inputs, technical guidance and management support for farmers.
- It provides an **assured market and a pre-agreed sale price for produce**, makes it easier for farmers to **access cheaper institutional credit**.

Way Forward

- The contract farming seeks to provide alternative marketing channels and better price realisation to farmers. It has been observed that if the market price rises higher than the contracted price, the farmers are tempted to sell the produce to someone else for a higher price. On the other hand, if market prices were to fall below the contracted rate, the buyer often fails to honour the commitment.
- It is also necessary to remember that for growers agriculture is a livelihood issue and for processors and aggregators it is business. Hence the Government

Note:



should play the role of a facilitator to promote as well as to develop a healthy system of farmer-corporate relationship for mutual benefit and development of the agriculture sector in India.

International Day of Families

Why in News

- The International Day of Families is observed on **15 May** every year.

Key Points

- In 1993, the **United Nations** General Assembly passed a resolution that 15 May of every year should be observed as the International Day of Families.
- **Objectives:** It provides an opportunity to promote awareness of issues relating to families and to increase the knowledge of the social, economic and demographic processes affecting families.
- **Theme:** The theme for 2020 is Families in Development: **Copenhagen & Beijing+25**.

Copenhagen & Beijing+25

- Copenhagen & Beijing+25 signifies the World Conferences on Women (WCW) organised by the United Nations.
 - The United Nations has organized four world conferences on women.
 - These took place in Mexico City in 1975, Copenhagen in 1980, Nairobi in 1985 and Beijing in 1995.
- **WCW, Copenhagen:**
 - Under this a Programme of Action called for stronger national measures to ensure women's ownership and control of property, as well as improvements in protecting women's rights to inheritance, child custody and nationality.
- **WCW, Beijing:**
 - It marked a significant turning point for the global agenda for gender equality. The Beijing Declaration was adopted unanimously by the UN at the end of the 4th WCW.
 - 2020 marks the 25th anniversary of the 4th World Conference on Women (WCW) and adoption of the Beijing Declaration and Platform for Action (1995). Hence, it is referred to as Beijing + 25.

- The theme changes every year depending on the developmental endeavours ahead of the organisations working towards the welfare of families.

Steps to promote healthy families:

- Healthy familial bonds are some of the greatest boons that parents and elders in the family can pass on their children and family youngsters.
- A nurturing environment promoted with love and care helps the children grow up into well-balanced, happy adults.
- Communication, quality time, appreciation, respect are some of the essentials towards building a strong and supportive family.

GOAL Programme

Why in News

Recently, the **Union Minister for Tribal Affairs** launched "**GOAL (Going Online As Leaders)**" programme at a webinar in New Delhi.

- GOAL is a joint initiative of **Facebook and the Ministry of Tribal Affairs**.

Key Points

- The GOAL programme is designed to **provide mentorship to tribal youth** through **digital mode**.
- The program will focus on three core areas - **Digital Literacy, Life Skills and Leadership and Entrepreneurship**.
- The program intends to upskill and empower 5,000 tribal youths in the current phase to harness the full potential of digital platforms and tools to learn new ways of doing business, explore and connect with domestic and international markets.
- The programme has been designed with a long term vision to develop the potential of **tribal youth and women** to help them **acquire skills and knowledge through mentorship in various sectors including horticulture, food processing, bee keeping, tribal art and culture, medicinal herbs, entrepreneurship** among others.
- The program aims to enable **Scheduled Tribe (ST)** youth in remote areas to use digital platforms for sharing their aspirations, dreams and talent with their mentors.

Note:



- All the mentees will be provided with smartphones and Internet access (for one year) by Facebook along with exposure to various external forums that will give opportunity to the participants to showcase their entrepreneurial skills and leadership abilities.
- The program will also **create awareness amongst tribal beneficiaries** about various **schemes initiated by Central and State Governments** for welfare of STs as well as their fundamental duties.

International Tea Day

Why in News

Recently, the **first International Tea Day** was observed on 21st May after it was designated by the **United Nations General Assembly** in December 2019.

- The UN General Assembly called on the **Food and Agricultural Organisation (FAO is an agency of the United Nations)** to lead the observance of the day.
- The date was chosen because the **season of tea production begins in May** in most of the tea producing countries.

Key Points

- Tea is a beverage made from the **Camellia sinensis plant**. It is the world's most consumed drink, after water.
- **Origin:** It is believed that tea originated in **northeast India, north Myanmar and southwest China** but the exact place where the plant first grew is not known. There is evidence that tea was consumed in China 5,000 years ago.
- **Economy:**
 - **Tea production and processing** constitutes a main source of livelihoods and subsistence for millions in developing and least developed countries.
 - It is a labour-intensive sector, providing jobs, especially in remote and economically disadvantaged areas.
 - Tea can play a **significant role in rural development, poverty reduction and food security** in developing countries, being one of the most important **cash crops**.
- **Sustainable Development:** Tea production and processing contributes towards various **sustainable development goals**:

- Reduction of extreme poverty (Goal 1).
- Fight against hunger (Goal 2).
- Empowerment of women (Goal 5).
- Sustainable use of terrestrial ecosystems (Goal 15).

➤ Plantation condition:

- Tea is a **tropical and sub-tropical plant** and grows well in moderately hot and humid climates.
- The ideal temperature for its growth is 20°-30°C and temperatures above 35°C and below 10°C are harmful for the bush.
- It requires 150-300 cm annual rainfall which should be well distributed throughout the year.
- The most suitable soil for tea cultivation is **slightly acidic soil (without calcium)** with porous sub-soil which permits a free percolation of water.

➤ Climate Change:

- Changes in temperature and rainfall patterns, with more floods and droughts, are already affecting yields, tea product quality and prices, lowering incomes and threatening rural livelihoods.
- In parallel, there is a growing recognition of the need to contribute to **climate change** mitigation, by reducing carbon emissions from tea production and processing.

➤ FAO has designated 4 tea cultivation sites in **China, Korea and Japan** as **Globally Important Agricultural Heritage Systems**.

- Pu'er Traditional Tea Agrosystem (China)
- Fuzhou Jasmine and Tea Culture System (China)
- Traditional Tea-grass Integrated System (Japan)
- Traditional Hadong Tea Agrosystem, Hwagae-myeon (Republic of Korea)

Globally Important Agricultural Heritage Systems

- It was started by the FAO to safeguard and support the **world's agricultural heritage systems**.
- GIAHS are outstanding landscapes of aesthetic beauty that combine agricultural biodiversity, resilient ecosystems and a valuable cultural heritage.
- **Three recognised GIAHS sites in India:**
 - Kuttanad Below Sea Level Farming System, **Kerala**.
 - Koraput Traditional Agriculture, **Odisha**.
 - Pampore Saffron Heritage, **Kashmir**.

Note:

Sonic Boom

Why in News

Recently, sonic boom (a loud sound) was heard in **Bengaluru** which emanated from an **Indian Air Force (IAF)** test flight involving a supersonic profile.

Key Points

- Sonic Booms are shockwaves produced by planes or other objects that are flying at a speed equal to or greater than the speed of sound (**supersonic, >1225 kmph at sea level**).
- When an airplane travels through the air, it produces **sound waves**. If the plane is traveling slower than the speed of sound, then sound waves can propagate ahead of the plane. If the plane breaks the sound barrier and flies faster than the speed of sound, it produces a sonic boom when it flies past. The **boom is the plane's sound waves combined together propagated at once**.
- **Air reacts like fluid to supersonic objects**. As those objects travel through the air, molecules are pushed aside with great force and this forms a **shock wave**. The bigger and heavier the aircraft, the more air it displaces.
- **Cause:**
 - The shock wave forms a **cone of pressurized or built-up air molecules**, which move **outward and rearward** in all directions and extend all the way to the ground.
 - As the pressure cone **spreads across the landscape** along the flight path, it **creates a continuous sonic boom** along the full width of the cone's base.
 - The **sharp release of pressure**, after the buildup by the shock wave, is **heard as the sonic boom**.
 - The change in air pressure associated with a sonic boom is only a **few pounds per square foot**, about the same pressure change experienced riding an elevator down two or three floors.
 - It is the rate of change, the **sudden changing of the pressure**, which **makes the sonic boom audible**.
- **General Factors Associated With Sonic Booms:**
 - There are several **factors that can influence sonic booms** like weight, size, and shape of the aircraft or vehicle, plus its altitude, attitude, and flight path, and weather or atmospheric conditions.

- The **direction of travel and the strength** of shock waves are influenced by wind, speed, and direction, as well as by air temperature and pressure.

Quantum Entanglement

Why in News

Recently, the scientists from **S. N. Bose National Centre for Basic Sciences (SNBNCBS)**, **Kolkata** have developed a novel protocol to find out whether a pair of electrons is in an entangled state.

- This novel protocol to measure the status of entanglement is known as **Device Independent Self Testing (DIST)** method.

Key Points

- **Device Independent Self Testing (DIST) Method:**
 - This method can be used to overcome safety concerns in quantum entanglement as it **enables the verification** of entanglement in an unknown quantum state of two photons **without having direct access to the state, or complete trust in the measurement devices**.
 - In several practical situations, one of the parties may be fully trusted, whereas, the other may not be trusted like in the case of server-client relationship in banking transactions.
- **Quantum Entanglement:**
 - It is the **physical phenomenon** that occurs when a pair or group of particles is generated and they interact in such a way that the **quantum state of each particle of the pair or group cannot be described independently** of the state of the others.
 - In this quantum mechanical phenomenon, the quantum states of two or more objects have to be described with reference to each other, even though the individual objects may be spatially separated.
 - This leads to correlations between observable physical properties of the systems.
 - **Albert Einstein** dismissed this idea as a 'spooky action'.
- **Importance:**
 - Entangled states are **key resources** to facilitate many **quantum information processing tasks and quantum cryptographic protocols**.

Note:



- The entangled pairs of electrons can be **safely used as resources for facilitating quantum information processing tasks.**

➤ **Challenges:**

- **Fragility:** Entanglement is **fragile and is easily lost** during the transit of photons through the

environment. Hence, it is extremely **important to know whether a pair of photons is entangled**, in order to use them as resources.

- **Safety:** Verification of entanglement requires the use of measurement devices, but such devices may be hacked and cannot be trusted fully.



Note:



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Key Points

Details

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Summary

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