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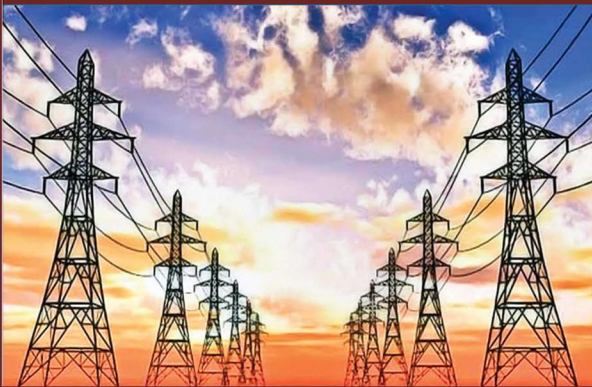
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One Constitution Bench in the Supreme Court throughout the Year



EC to Hold Virtual Regional Forum Meeting on Inclusive Polls



Revamped Distribution Sector Scheme (RDSS)



NITI Aayog Launches the National Data & Analytics Platform



Regional Rural Banks (RRBS)



G20 Education Ministers' Meeting



Legionellosis Disease



India-South Africa Bilateral Meeting

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Director's Message

Dear Aspirants,

The first Indigenous Aircraft Carrier (IAC) INS Vikrant has been commissioned by the Prime Minister on 2nd September 2022 reflecting the commitment of India becoming self-reliant. During the event, the Prime Minister also unveiled the new Naval Ensign (Nishaan), doing away with the colonial past and befitting the rich Indian maritime heritage. The Indigenous Aircraft Carrier is named after her illustrious predecessor, India's first Aircraft Carrier Vikrant, which had played a vital role in the 1971 war. INS Vikramaditya is the aircraft carrier which India currently possesses. With the commissioning of INS Vikrant, India will have two aircraft carriers which will help in further bolstering the maritime security of the nation. INS Vikrant is the first aircraft carrier to be designed by the Warship Design Bureau of Indian Navy and the first warship to be built by Cochin Shipyard Limited. It is the first ship of the Indian Navy to be built completely using the steel produced domestically. 76 percent of the ship's parts have been sourced indigenously for which around 500 Indian firms have been roped in.

India now joins the elite club of six nations – the US, UK, Spain, Russia, France and China – that have the capability to design and build an indigenous aircraft carrier. China has been demonstrating an aggressive approach along the land boundary with India. It has also increased its efforts to get a foothold in the Indian Ocean. The main intention behind China wanting to control the Indo-Pacific region is to protect the network of Chinese military and commercial bases from the Chinese mainland to Port Sudan in the Horn of Africa, commonly referred to as the “String of Pearls”. This network passes through critical maritime choke points that include the Strait of Malacca, Strait of Hormuz, Strait of Mandeb, Gwadar port and Hambantota port. In line with their ambitions, China has acquired a naval outpost in Djibouti and invested funds in developing Gwadar port in Pakistan. The recent docking of a Chinese ship in Hambantota port was also an issue of contention between the countries as it was a cause for concern in the Indian security establishment.

The induction of INS Vikrant into the Navy would boost India's aspirations of emerging as a strong partner for the islands and littoral countries of the Indian Ocean. It is the key to India's maritime diplomacy and power projection in the Indian Ocean. The ship provides critical access to the littorals and its mere presence would act as a deterrent for any enemy attacks.

Chinese Navy already possesses three aircraft carriers and it plans to build six more by 2049. The Indian Navy is also planning to build a second IAC INS Vishal with increased size and displacement. INS Vikramaditya and INS Vikrant use “Ski-Jump” (STOVAR) technology where the heavier aircrafts cannot be employed for launch. INS Vishal would be equipped with CATOVAR technology which will help in aircrafts carrying its full payload and operating at its full potential.

As the construction of second IAC involves astronomical amounts, critics argue that this amount could be better utilized for developing the Navy's fleet of Corvettes, mine-sweepers, destroyers, frigates, naval utility helicopters and unmanned aerial vehicles (UAVs). They also point out that these carriers are vulnerable to ever-improving ballistic/cruise missiles and submarines and Sukhoi (Su-30MKI) armed with the BrahMos can better police the Indian Ocean than carriers.

Control of maritime space and ensuring its security for long periods is impossible without a standoff capability and this is provided by the Aircraft Carriers. They represent the most potent yet least intrusive military power as they operate in and from international waters. INS Vikrant is a game changer in the government efforts to counter China's growing military assertiveness in the region. It is a proof of country's acumen and technical skills and will reinforce the country's defence indigenization programs and "Make in India" campaign.

Best wishes,

Yours sincerely,



K. Rajendra Kumar IPS (Retd)

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1. NATIONAL

1.1 The Parliamentary Panel has highlighted some of the outdated provisions of Goa's uniform Civil Code.

❖ The Goa Civil Code, a set of civil laws that governs all residents of the coastal State irrespective of their religion and ethnicity, has come under focus amid a call for the implementation of a uniform civil code (UCC) across the country. Goa is the only state with UCC in India.

Objections: There were some peculiar clauses in the law related to matrimony and division of property, which were outdated and not based on the principle of equality.

- E.g., The law also doesn't recognize bigamy or polygamy, including for Muslims but grants an exception to a Hindu man to marry once again if his wife doesn't conceive a child by the age of 21 or a male child by the age of 30. What is UCC? The UCC refers to a common set of laws governing personal matters such as marriage, divorce, adoption, inheritance and succession, that will apply to all citizens irrespective of their religion, caste, and gender.
- Article 44 of the Constitution, which is one of the Directive Principles of State Policy, also advocates a uniform civil code.
- However, governments since Independence have allowed respective religion-based civil codes to respect the diversity of India.

1.2 Electoral Bonds

- **Context:** Donations to political parties through electoral bonds (EBs) have crossed the Rs 10,000-crore mark

What are electoral bonds?

- Electoral Bond is a financial instrument for making donations to political parties.
- Electoral bonds are purchased anonymously by donors and are valid for 15 days from the date of issue.
- The bonds are issued in multiples of Rs. 1,000, Rs. 10,000, Rs. 1 lakh, Rs. 10 lakh and Rs. 1 crore without any maximum limit.
- State Bank of India is authorised to issue and encash these bonds, which are valid for fifteen days from the date of issuance.
- These bonds are redeemable in the designated account of a registered political party.
- The bonds are available for purchase by any person (who is a citizen of India or incorporated or established in India) for a period of ten days each in the months of January, April, July and October as may be specified by the Central Government.

1.3 100% Quota to Locals

- **Context:** SC Quashes Jharkhand Decision to Grant 100% Quota to Locals in Govt. Jobs.
- Observation by SC ““The citizens have equal rights, and the total exclusion of others by creating an opportunity for one class is not contemplated by the founding fathers of the Constitution of India”

- **The Issue:** Jharkhand Government in 2016 granted 100% reservations to locals of 13 scheduled areas in public jobs. Previously State HC had termed the decision discriminatory and impermissible.
- **Rights violated:** The move is unconstitutional and ultra vires Articles 14, 16(2), 16(3) and 35 of the Constitution of India.
- For reservation outer limit is 50% as specified in the Indra Sawhney case, 1992.
- **Previous Case:** The top court relied on the constitution bench judgment of 2020 related to a 100% quota in jobs in Andhra Pradesh.

1.4 Undertrials

- **Context:** SC has asked to facilitate the release of under trials and those convicted of minor offences to celebrate the 75th year of Independence.
- **Definition of Under-trials:** One who is arrested for some crime and is waiting to appear before the magistrate.
- 76% of prisoners in Indian jails are under-trials, thus violating their basic rights (NCRB 2020 data)
- **Reasons for a high number of undertrials:** Delay in the justice system, shortages of court staff and judges, inconsistency in the bail system, poor legal representation etc.
- **Initiative for Undertrials:** setting up of several Fast-Track Courts, Modernization of Prison scheme, Open Court, Streamlining of IPC and CrPC laws, Clubbing of similar petty offences and clearing them on mission mode, E-Prison project. Malimath Committee (2013) recommendation: Standard of 'Proof beyond reasonable doubt' followed in criminal cases be done away with.

1.5 SC: Unmarried Women Can Avail Abortion Services

- **Context:** (The Hindu Editorial section) Last week Supreme Court pointed out that the rules mentioned 'partner' and not husband, thereby reinterpreting the MTPA and putting unmarried women on equal footing with that of married ones.

1.6 EC To Hold Virtual Regional Forum Meeting on Inclusive Polls

- **Context:** The Election Commission of India will host a virtual meeting of the Asian Regional Forum on the theme of inclusive and accessible elections, as a precursor to the 'Global Summit for Democracy' next month.

Aim:

- It is aimed at generating synergy amongst international organisations, and electoral bodies from around the world and promoting intellectual and institutional mobilization to strengthen electoral democracy in the world. Last year, the first Summit for Democracy was hosted by the United States "to renew democracy at home and confront autocracies abroad".

India's status on Democracy:

- Freedom House 2021 report put India as only “partly free”
- V-Dem report called India an “electoral autocracy”.
- Global State of Democracy 2021 report: India was amongst the 10 most backsliding Democracies a more severe and deliberate kind of democratic erosion.

1.7 Supreme Court not in Favour of Derecognising Political Parties over Freebies

- **Context:** The Supreme Court refused to consider the question of derecognising political parties that resort to freebies.
- **SC observations:** The apex court was considering the question of reining in the practice of political parties offering “irrational freebies” to the electorate if they are voted to power, especially in states which are already drowning in debt.
- The court said ‘freebies’ are different from the welfare schemes of the government.

Legal Status:

- Part-IV-A of the Representation of the People Act contains, Section 29A deals with the registration of associations and bodies as political parties.
- Part-IV-A does not provide any section for the de-registration of political parties. Representation of the People Act, 1951 does not provide any mechanism for de-registration of a political party

1.8 One Constitution Bench in The Supreme Court Throughout The Year

- Justice U U Lalit (49th Chief Justice of India) assured there will be at least one Constitution Bench functioning throughout the year in the Supreme Court.

Key Highlights:

- **Urgent matters:** A clear-cut mechanism would be in place to allow lawyers to mention urgent matters, which includes bail petitions, etc., before the respective Benches for early listing.
- The Supreme Court's pendency has crossed over 71,000 from a little over 55,000 in 2017. This is despite the fact that the sanctioned judicial strength of the court was increased to 34 judges in August 2019.

Constitution bench:

- It is the name given to the benches of the Supreme Court of India which consist of at least five judges of the court who sit to decide any case

1.9 India's 'Wheat Waiver' WTO Demand is Risk-Fraught

- **Context:** Recently, India demanded World Trade Organization (WTO) find a permanent solution to the issue of public stockholding (PSH) of food.

Background:

- India's MSP policy for procurement of produce (for supporting farmers' income as well as providing subsidized food for the poor) had fallen out of WTO rules. Under WTO law, such price support-based procurement from farmers is considered a trade-distorting subsidy.
- Currently, India has temporary relief due to a '**peace clause**' that bars countries from raising legal challenges against these subsidies.

1.10 CPGRAMS

- **Context:** The timeline for redressal of grievances has been reduced from 45 days to 30 days

About:

- Centralized Public Grievances Redress and Monitoring System (CPGRAM) is an online web-enabled system developed by the National Informatics Centre (Ministry of Electronics & IT [MeitY]), in association with the Directorate of Public Grievances (DPG) and Department of Administrative Reforms and Public Grievances (DARPG) (under Ministry of Personnel, Public Grievances & Pensions). It helps in receiving, redressing and monitoring of grievance of the public in an efficient way.

1.11 Cabinet Nod for Climate Pledges

- **Context:** India has ratified pledges made by the Prime Minister in Glasgow last November to accelerate India's reliance on renewable energy to power the economy and be effectively fossil fuel-free by 2070.
- However the approved pledges were fewer than those Mr. Modi committed to.
- The Union Cabinet, chaired by the Prime Minister, approved an update to India's Nationally Determined Contribution (NDC).
- It is a formal communication to the United Nations, spelling out steps to be taken by the country towards keeping global temperatures from rising beyond 2°C by the end of the century.

1.12 Cooperatives on Government E-Marketplace

- **(GEM) Context:** Cooperatives have been onboarded to the GeM portal, thus allowing them to procure like other government agencies. Until now, cooperatives were purchasing from the open market.

Direction: Cooperatives are important. GeM is a one-stop portal for the online procurement of goods and services. It has been developed by the Directorate General of Supplies and Disposals (Ministry of Electronics)

About Cooperatives:

- **Def:** It is a voluntary association of individuals having common needs who join hands for common economic interests.
- **Based on the principle of:** Voluntary and open membership, Autonomy to members, Aimed at community concerns.

- A separate 'Ministry of Co-operation' has been created by the Central Government for realizing the vision of 'Sahkar se Samridhi' (Prosperity through Cooperation)

1.13 INSTC

- **Context:** Recently, Containers from Russia's Astrakhan port crossed the Caspian Sea and eventually reached Nhava Sheva port in Mumbai, signalling the launch of the International North-South Transport Corridor (INSTC). INSTC is a 7,200-km multi-modal transport corridor that combines road, rail and maritime routes connecting Russia and India via Central Asia and Iran. The corridor is expected to consolidate the emerging Eurasian Free Trade Area.
- **Legal Framework:** The legal framework for the INSTC is provided by a trilateral agreement signed by India, Iran and Russia at the Euro-Asian Conference on Transport in 2000.

Significance of INSTC:

- Reduce freight costs by 30% and the journey time by 40% in comparison with the conventional deep-sea route via the Suez Canal.
- **Complement East-West axis:** INSTC can shape a north-south transport corridor that can complement the east-west axis of the China-led Belt and Road Initiative (BRI).

1.14 Revamped Distribution Sector Scheme (RDSS)

- **Context:** RDSS has been launched for DISCOMs

Aim:

- RDSS is a reform-based and result-linked scheme to improve the financial sustainability and operational efficiencies of DISCOMs. This is done by financial assistance for the modernization of distribution infrastructure e.g., Smart Prepaid Meters. This is aimed to:
 - **Reduce AT&C loss** by 12-15%
 - Reduce financial deficit (average cost of supply-average revenue realised) of DISCOMs to Zero.
 - Compulsory installation of smart meters (target of installing 250 million smart meters by 2025)

Time: 2021-22 to 2025-26

Nodal Agency: Under Ministry of Power (Rural electrification cooperation and Power Finance Corporation)

1.15 Regional Rural Banks (RRBS)

- **Context:** Government has recently reviewed the financial and operational reforms for RRBs
- **Aim:** Reform is aimed at making RRBs financially sustainable, more digitized and increasing their credit base esp. to MSME sectors (for increased profitability)
- **Significance:** RRBs Provide banking to rural masses, support weaker sections (through credits), direct finance to cooperative societies and SHGs, reduce regional imbalances and increase rural employment generation.

- **Issues:** Most of the RRBs are in loss, poor management practices, NPA is increasing and lacks unity of command (being controlled by govt. as well as sponsor banks such as NABARD, RBI)

About RRBs:

- It was formed under RRB Act 1976 (recommended by Narasimha Working Group (1975)), for providing credit in rural areas.
- **Ownership:** Central Government (50%), Concerned State Govt. (15%), Sponsor Bank (35%)
- It was to follow priority sector lending (75%) on the same level as commercial Bank.
- The first Regional Rural Bank “Prathama Grameen Bank” was set up on 2nd October 1975.
- **Unique thing:** The RRBs combine the characteristics of a cooperative in terms of the familiarity with the rural problems and a commercial bank in terms of its professionalism and ability to mobilise financial resources.
- RRBs are to maintain CRAR (Capital-to risk-weighted asset ratio) of a minimum of 9% (at par with commercial banks) o CRAR is the ratio of a bank’s capital in relation to its risk-weighted assets and current liabilities

1.16 Rise in GST Collection

- **Context:** GST collection has risen by 28% every year (reached about 1.5 lakh cr in July this year)

Reasons:

- Higher inflation rate
- Economic recovery means a higher consumption pattern
- Stricter action against Tax evasions
- Better compliance with Rules

About GST: The Goods and Services Tax (GST) (by 101st C.A Act) is a value-added tax levied on most goods and services sold for domestic consumption. It is based on the principle of destination-based consumption taxation as against the previous principle of origin-based taxation.

1.17 Status of Coal Reserves in India

- **Context:** According to the Inventory of India published by the Geological Survey of India, the total assessed geological coal resource in the country is 352 billion tonnes, putting it among the nations with the highest reserves (currently 5th placed)
- The bulk of it is relatively low calorific value thermal or non-coking coal (used mostly in thermal power plants) despite high reserve, India has to import coal because: Demand outpacing production, poor finances of DISCOMS, poor logistics, the private sector is a marginal player currently.
- **Suggestions:** Plan for coal as it will remain the mainstay of thermal power generation, utilize domestic coal reserves present across the country, and utilize technologies like coal liquefaction and carbon capture, storage, and utilization (CCUS) technologies.

1.18 Inflation Driving 8% of GST Revenue Rise:

High inflation is driving about 8% of the current surge in Goods and Services Tax revenues, and inflation-adjusted GST collections so far this year are 26% higher than pre-COVID levels, SBI Research said in a report, suggesting this rise could be driven by higher consumption.

1.19 Bharat Bill Payment System

- **Context:** RBI has allowed BBPS to process cross-border “inbound” bill payments aimed at benefiting senior citizens and families of persons who are dependent on remittances from abroad. Till now, BBPS was accessible only to ‘residents in India’. BBPS: It is an interoperable platform for the standardized bill payment system, conceptualised by RBI and implemented by the National Payments Corporation of India (NPCI).
- **NPCI:** National Payments Corporation of India (NPCI) is an umbrella organization for all retail payments systems in India. It was set up with the guidance and support of the Reserve Bank of India (RBI) and the Indian Banks’ Association (IBA). NPCI has ten promoter banks.

1.20 Centre Releases ₹1.16 Lakh Cr. to States

- **Context:** Central government released funds (double the usual amount) to help front-load State governments’ capital spending abilities in this financial year, after the expiry of the assured Goods and Services Tax (GST) compensation to States from this July.
- **Front-loaded approach by the Centre:** In order to incentivize States to increase their capital expenditure, to spur spending and growth, States get revenue from the Center:
- **Devolution (States’ share of taxes):** As state’s share of taxes from the Gross Tax Revenue (extra-budgetary)
- **Scheme Related Transfer:** As Centrally Sponsored Schemes from the Scheme Expenditure. (Based on Budget Allocations).
- **Finance Commission Grants:** As Transfer to States from the Transfers, Expenditure, and Other Expenses. (Based on Budget Allocations)
- **Other Transfers:** Other grants or loans. (Based on Budget Allocations) 15th Finance Commission’s recommended.
- **Vertical Devolution (Union to States):** States’ share in the divisible pool of taxes to 41% for the five-year period starting 2021-22.

1.21 Technology Innovation Hubs (TIH)

- **Context:** Joint India-US research projects will be implemented through TIH

About TIH

- It comes under National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) and is aimed at providing requisite infrastructure (test beds and data sets), enabling collaboration (e.g. on AI and wireless) and encouraging exchange programmes.

1.22 Blue Bonds

Context: SEBI has proposed the 'blue bonds' for sustainable finance

About Blue bond

- It will be a debt instrument to support investments in healthy oceans and blue economies (i.e. use of ocean resources for economic growth)- sustainable exploitation of ocean resources, fishing, and extracting renewable energy.
- It will catalyse progress towards SDG 14 (Life Below Water)
- UN Decade of Ocean Science for sustainable development (2021-2030)
- **First Blue Bond:** The Republic of Seychelles, in 2018, was the first to come with a blue bond

1.23 Issues with the Growth Pattern in India

Context: As India reaches 75 years of Independence, we look at the present development pattern with the national income at the time of independence.

Growth Pattern: • 1900-01 to 1946-47:

- National income growth was 1% per annum.
- National Income: the total amount of money earned within a country.
- 1950-51 to 2019-20: GDP has doubled every 14 years and the GDP per capita has doubled every 24 years.
- India's rapid economic growth since 1980 has led to a substantial reduction in absolute poverty

1.24 Regulating Digital Lending

Context: RBI has released guidelines to regulate digital lending based on the recommendation of the working group on 'digital lending' (2021)

Definition: Digital Lending involves lending through web platforms or mobile apps, utilizing technology for authentication and credit evaluation.

Benefits of digital lending:

- Ease of doing lending: Digital lenders disburse loans and collect repayments remotely through digital channels, such as bank accounts, e-commerce accounts, or mobile wallets integrated with a partner (or) third party integration.

- **Transparency:** These cashless channels improve operational efficiency and reduce fraud by providing a clear audit trail.
- **Need for regulation:** There have been instances of breach of data, unfair business practices, frauds, widespread defaults, digital unawareness and high-handed loan recovery practices by digital lenders

1.25 India and other Countries (of the G24 Grouping) have objected to the proposal that they can't levy any future digital service tax (similar to an equalization levy).

Background:

- In order to streamline the global governance of digital companies such as Google, and Facebook, a global tax deal under OECD's two-pillar plan was agreed upon in 2021 (including by India)
- **Under pillar 1**, all multinational enterprises (with turnover over 20bn Euro and profit of over 10%) will have to relocate part of their profit to the place where they sell their products.
- **Under Pillar 2**, all enterprises (with revenue over EUR 750mn) will have to give a minimum corporation tax of 15%. It will bring in 'global minimum corporation tax' to be implemented from 2023. What is Equalization Levy? Equalization Levy is a direct tax (of 6%), introduced in India in 2016 to tax foreign firms (such as Google, and Facebook) with now permanent establishments in India but profits from it. It was reaffirmed in Finance Act 2020 and expanded to include non-resident e-commerce operators (such as Amazon), by a new levy of 2% (digital service tax).

What is the digital tax scheme?

- Government in Finance Bill of 2020-21, imposed a 2% digital service tax on trade and services of foreign e-commerce companies such as Amazon and Walmart owned Flipkart and others having an annual turnover of ₹2 crores or more.
- **Group of 24:** It was established in 1971 as a chapter of the Group of 77 of developing countries in order to coordinate on monetary and developmental issues.

1.26 Agriculture Minister Launches Indigenous Vaccine for Lumpy Skin Disease

- **Context:** Union Minister for Agriculture and Farmers Welfare, launched the indigenous vaccine Lumpi-ProVacInd to protect livestock from Lumpy Skin disease.
- The vaccine has been developed by the National Equine Research Center, Hisar (Haryana) in collaboration with the Indian Veterinary Research Institute, Izzatnagar (Bareilly).

Lumpy skin disease (LSD)

- It is an infectious disease in cattle caused by a virus of the family Poxviridae, also known as the Neethling virus.

1.27 Nano Urea

- **Context:** India will produce over 6 Cr bottles of Nano urea and make it available to farmers in 2022-23.

What is nano urea?

- **Urea** is chemical nitrogen fertilizer, white in colour, which artificially provides nitrogen, a major nutrient required by plants.
- Liquid nano urea is essentially urea in the form of a nanoparticle.
- It is a patented chemical nitrogen fertilizer produced by IFFCO.

Which is better-Nano Urea vs imported/Urea

Cost: Nano urea is cheaper (Rs 240 for half litre without subsidy; the International market price of a bag of urea is between Rs 3,500 and Rs 4,000. A bottle of nano urea can effectively replace at least one bag of urea.

Benefits for the government:

- Reduces fertilizer subsidy bill of government. India is dependent on imports of the widely used fertilizer.
- The efficiency of Nano urea (nutritional use efficiency) can be as high as 85-90 per cent (Conventional urea has an efficiency of about 25 per cent).
- As Nano Urea has higher surface-mass ratios that help in releasing nutrients to plants in a controlled manner.
- Nano Urea has a shelf life of a year, and farmers need not be worried about “caking” when it comes in contact with moisture.

- **Other benefits of Nano Urea:**

Fertilizers in nano form provide a targeted supply of nutrients to crops, as they are absorbed by the stomata, and pores found on the epidermis of leaves.

Reduces the unbalanced and indiscriminate use of conventional urea.

Increases crop productivity by 8%

Reduces soil, water, and air pollution.

1.28 Modified Interest Subvention Scheme (MISS)

- **Context:** Government will provide interest subventions (kind of subsidy) to all financial institutions (Banks) for short-term agriculture loans given to farmers. This will be valid for FY22 to FY24 (2 years) and up to 1.5% interest subvention.

What is interest subvention:

- It is a form of waiver of some percentage of interest from the total interest that one has to pay on a loan taken from financial institutions.
- E.g., If banks provide loans on 8.5% interest rate to farmers. And if the government provides interest subvention of 1.5%. Then farmers have to pay only 7% interest rate to bank. The difference will be paid by government as subsidy.

About MISS

- Under this, bank provides short term loans upto 3 lakh for all agriculture and allied activities at 7% per annum.
- For prompt repayment of loans: Farmers repaying loans before due date are given extra 3% subventions (i.e., they will have to pay just 4% interest rate)
- **Funding:** 100% by centre
- **Nodal agency:** NABARD and RBI

Other schemes for interest subvention: Kisan Credit Card, Agri Market

Infrastructure Fund (provide subsidized loans to state and UT) and PM Fasal Bima Yojana.

1.29 Ex Vajra Prahar 2022

- **Context:** A joint exercise between the special forces (13th edition) of India and the US began in Himachal Pradesh's Bakloh.
- **Aim:** The drill aims to improve interoperability between the special forces of both the countries.
- **Other Exercises of India with the USA:** Exercise Yudh Abhyas (Army); Cope India (Air Force); Red Flag (USA's multilateral air exercise); Malabar Exercise (trilateral naval exercise of India, USA and Japan)

1.30 Brahmos Missile

Context: IAF sacks 3 officers in BrahMos missile firing case.

About the BrahMos Missile:

- BrahMos missiles are designed, developed and produced by BrahMos Aerospace, a joint venture company set up by DRDO and Mashinostroyenia of Russia (named after the Brahmaputra and Moskva rivers)
- It is a two-stage cruise missile with a solid propellant booster in the first stage and a liquid ramjet in the second stage.
- A ramjet is a form of air breathing jet engine that uses the forward motion of the engine to produce thrust.
- It can be launched from land, air, and sea and works both day and night irrespective of the weather conditions

1.31 Nepal Suspends Gorkha Recruitment for Indian Army

- **Context:** Nepal has stalled the recruitment of Gorkhas in the Indian Army under the Agnipath scheme, as it feels that it does not conform with provisions of the tripartite agreement signed by Nepal, India and Britain on November 9, 1947.
- **Other concerns:** There are concerns about the future of Gorkha recruits when they retire after four years, and the impact of these out-of-job young men all in their twenties on society.

- **Background:** Recruitment of Gorkhas from Nepal began in the British Indian army after the Treaty of Sagauli was signed in 1816 between the government of Nepal and the British East India Company.
- It became a tripartite arrangement in November 1947 after India became independent and Gorkhas in Nepal were given a choice to serve in the Indian Army or go to the UK.
- India currently has 43 Gorkha battalions serving in seven regiments.
- Apart from India, the UK also recruit soldiers from Gorkhas.

1.32 Head Quarter Agreement with CDRI

- ❖ **Context:** CDRI (**Coalition for Climate Resilient Infrastructure**) was given an ‘independent and international legal entity’ tag as India signed “Headquarter agreement’ with CDRI.

What is Headquarter Agreement?

- ❖ It is an agreement between an international organization and the host country (India is hosting CDRI HQ) to determine the privileges, immunities and facilities of an independent body.
- ❖ **Benefit:** The pact will enable CDRI to pursue functions internationally with all rights, immunities, and privileges, as per the United Nations (Privileges & Immunities) Act, 1947.

1.33 Technology Innovation Hubs (TIH)

Context: Joint India-US research projects will be implemented through TIH

About TIH

- It comes under National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) and is aimed at providing requisite infrastructure (test beds and data sets), enabling collaboration (e.g. on AI and wireless) and encouraging exchange programmes. NM-ICPS was launched in 2018 for 5 year period to enable academia-industry-government collaboration and provide technical support for CPS implementations.
- **Activities under NM-ICPS are:**
Technology Development; Human Resources and Skill development; Entrepreneurship; Innovations and International Collaborations.

1.34 China Pledges Support to Sri Lanka at The UNHRC Session

- **Context:** In the upcoming UN Human Rights Council session in Geneva, where a resolution on Sri Lanka is expected to be tabled, China has said it would “continue to support” Sri Lanka in international fora on the Human Rights issue.
- Previously, China had voted against it, backing Sri Lanka, while India abstained. Core group: In the March 2022 session, the ‘Core Group’ on Sri Lanka, comprising the United Kingdom, United States, Canada, Germany, North Macedonia, Malawi and Montenegro, noted in a statement that: surveillance and intimidation of civil society persist, and detentions, threats and intimidation of journalists and human rights defenders continue.

1.35 Pandemic Treaty

- **Context:** WHO had established an intergovernmental negotiating body to draft and negotiate a Pandemic treaty. WHO says it will be ready in the next 18 months and help prevent future global health disasters.
- **About Pandemic Treaty In December 2021,** the Health Assembly adopted a decision titled “The World Together” at its second special session since it was founded in 1948.
- Under the decision, the health organisation established an intergovernmental negotiating body (INB) to draft and negotiate the contents of the pandemic treaty in compliance with Article 19 of the WHO Constitution.
- The pandemic treaty is expected to cover aspects like data sharing and genome sequencing of emerging viruses and equitable distribution of vaccines and drugs and related research throughout the world.

1.36 Petcoke

- **Context:** India buys discounted Venezuelan petroleum coke to replace coal (due to high prices of coal) Petroleum coke (or pet coke) is a final carbon-rich solid material that is derived from oil refining.
- **Characteristics:** A tonne of petcoke is more expensive than coal, but produces more energy when burnt. It is generally not used as fuel because of toxic emissions, but is widely used by the cement industry - its largest consumer, as sulphur dioxide emissions, are absorbed by limestone.
- **Uses:** As fuel in Industries- Cement, Lime, Alumina etc. Previously Supreme Court had banned the use of Petcoke in NCR areas (Delhi)

1.37 UN Sanction: JeM Deputy Chief

- **Context:** China has thwarted a joint India-U.S. bid to list Jaish-e-Mohammad (JeM) deputy chief Rauf Asghar as a UN Security Council-designated ‘**Global Terrorist**’ by placing a “**technical hold**” on the process.

Who is Rauf Asghar:

- He is the brother of JeM leader Masood Azhar, and is accused of masterminding a number of terror attacks from the IC-814 hijacking in 1999, the Parliament attack in 2001, as well as a number of attacks on security forces personnel from 2014-2019, including the strikes on the Air Force base in Pathankot, Army camps in Kathua, Nagrota, Sanjwan and other locations.
- He is arrested in Pakistan and convicted of terror financing charges.
- Mohammad (also called the Jaish-i-Mohammad) along with Rauf Asghar, Omar Saeed was convicted for the killing of American journalist Danny Pearl.

1.38 UN Sanctions Regime

- **Context:** India has said to the UN that the credibility of the United Nations’ sanctions regime is at an “all-time low”. Double standards and continuing politicisation have rendered the credibility of the sanctions regime at an all-time low.

Issues with the Sanction regime:

- **Double standards:** Some countries such as China, Pakistan, Afghanistan and the United Nations Secretariat have adopted “selectivity” and “double standards” against terrorism.
- **China:** China’s decision to place a hold on terror listings, the “glorification” of terror acts by the Pakistan Taliban regime in Afghanistan: It has provided shelter to terror groups, including ISIL-Khorasan which was behind the attacks on a Gurdwara in Kabul.
- Frequent blocks and ‘technical holds’ placed by China in its attempts to add a number of terrorists to the UNSC-designated terrorist listings, including the top leadership of the LeT and the JeM based in Pakistan and Afghanistan. For E.g. China thwarted a more recent joint proposal by India and the U.S. to list LeT deputy chief Abdul Rahman Makki.

1.39 Asean-India Foreign Ministers’ Meeting (AIFMM)

Context: 30 years of India-ASEAN relations and 2022 has been designated as ASEAN-India friendship year.

Areas of Cooperation:

- **Trade:** Over 10% of India’s overall trade with ASEAN countries (India’s 4th largest trading partner)
- **Forums:** India is a member of the ASEAN Regional Forum (ARF), Mekong Ganga Cooperation.
- **Transport:** India-Myanmar-Thailand Trilateral Highways, Kaladan Multi-modal Project.
- **Security:** India’s ‘Act East Policy’ and ‘Indo-Pacific Oceans Initiative (IPOI)’
- **Military exercise:** CORPAT (with Indonesia and Thailand); Samudra Shakti (Indonesia); SIMBEX (Singapore)
- **Socio-Cultural Cooperation:** Inviting ASEAN students to India, Special Training Course for ASEAN diplomats, Exchange of Parliamentarians, etc.
- **East Asia Summit (EAS):** First held in 2005, the summit is usually attended by the heads of state from ASEAN, Australia, China, India, Japan, New Zealand, Russia, South Korea, and the United States.

1.40 NIDAAN

Context: National Integrated Database on Arrested narco-offender (NIDAAN) gets operationalized

About NIDAAN

- It is 1st of its kind database for data on all arrested narcotics-related offenders. It is developed by the Narcotics Control Bureau (NCB). The portal will source its data from the Inter-operable criminal justice system (ICJS), e-Prison and CCTNS (when integrated). Earlier it was part of the NCORD Portal (Narcotics Coordination Mechanism).

1.41 Manthan Portal

- **Context:** It has been launched by the Office of the Principal Scientific Adviser for promoting collaboration between industry and the scientific research and development ecosystem to meet India's sustainability goals.
- **Programmes:** Knowledge Transfer, Interactive sessions, exhibitions on new innovations
- Platform is powered by NSEIT (a 100% subsidiary of the National Stock Exchange of India)

1.42 NeVA

- **Context:** 'One Nation-One Application' is being implemented using the National eVidhan Application (NeVA). NeVA is a portal to bring all the legislatures of the country together, on one platform.

Key Benefits:

- Paperless Assembly
- Automation of the entire law-making process
- Cloud technology (Meghraj) allows data to be accessed anywhere at any time.
- Himachal Pradesh is the first Digital Legislature in the country

1.43 Smile-75 Initiative

The Ministry of Social Justice & Empowerment has launched the "SMILE-75 Initiative".

About SMILE-75 initiative

- SMILE (Support for Marginalized Individuals for Livelihood and Enterprise Scheme) is aimed at making cities/towns and municipal areas begging-free and comprehensive rehabilitation of the persons engaged in the act of begging.
- Under the initiative, seventy-five (75) Municipal Corporations in collaboration with NGOs and other stakeholders will cover several comprehensive welfare measures for persons who are engaged in the act of begging. Measures taken: rehabilitation, provision of medical facilities, counselling, awareness, education, skill development, economic linkages and convergence with other Government welfare programmes etc.

Beggars in India:

- According to the Census 2011 total number of beggars in India is over 4 lakhs.
- West Bengal tops the chart followed by Uttar Pradesh and Bihar

2. INTERNATIONAL RELATIONS

2.1 Falkland Islands

- ❖ Recently, India extended support to Argentina's campaign to restart international negotiation on the Falklands Territorial Issue.



Where is Falkland Island?

- Falkland Islands, also called Malvinas Islands or Spanish Islas Malvinas, are internally self-governing overseas territory of the United Kingdom in the South Atlantic Ocean.
- It lies about 300 miles northeast of the southern tip of South America and a similar distance east of the Strait of Magellan.
- The capital and major town is Stanley, on East Falkland, there are also several scattered small settlements as well as a Royal Air Force base that is located at Mount Pleasant.
- The two main islands are East Falkland and West Falkland, and it also comprises of about 200 smaller islands. The government of the Falkland Islands also administers the British overseas territory of South Georgia and the South Sandwich Islands, including the Shag and Clerke rocks.

What is the History of the Falkland Islands?

- The British, in 1765, were the first to settle in West Falkland, but they were driven off in 1770 by the Spanish, who had bought out the French settlement about 1767.
- The British outpost on West Falkland was restored in 1771 after threat of war, but then the British withdrew from the island in 1774 for economic reasons, without renouncing their claim to the Falklands.
- Spain maintained a settlement on East Falkland (which it called Soledad Island) until 1811. In 1820 the Argentina Government, which had declared its independence from Spain in 1816, proclaimed its sovereignty over the Falklands.
- In 1831 the US warship destroyed the Argentine settlement on East Falkland in reprisal for the arrest of three US ships that had been hunting seals in the area.

- In early 1833, a British force expelled the few remaining Argentine officials from the island without firing a shot. In 1841, a British civilian lieutenant governor was appointed for the Falklands, and by 1885 a British community of some 1,800 people on the islands was self-supporting.
- Argentina regularly protested Britain's occupation of the islands.
- After World War II (1939-45) the issue of sovereignty over the Falkland Islands shifted to the United Nations (UN) when, in 1964, the islands' status was debated by the UN committee on decolonization.
- In 1965, the UN General Assembly approved a resolution inviting Britain and Argentina to hold discussions to find a peaceful solution to the dispute.
- These protracted discussions were still proceeding in February 1982, but in April Argentina's military government invaded the Falklands.
- This act started the Falkland Islands War, which ended 10 weeks later with the surrender of the Argentine forces at Stanley to British troops who had forcibly reoccupied the islands.
- Although Britain and Argentina re-established full diplomatic relations in 1990, the issue of sovereignty remained a point of contention.
- In the early 21st century Britain continued to maintain some 2,000 troops on the islands. In January 2009 a new constitution came into effect that strengthened the Falklands' local democratic government and reserved for the islanders their right to determine the territory's political status. In a referendum held in March 2013, islanders voted nearly unanimously to remain a British overseas territory.

What are the Bases of Different Claims on the Island?

- Argentina based its claim to the Falklands based on an official document of 1493 modified by the Treaty of Tordesillas (1494), by which Spain and Portugal had divided the New World between themselves, on succession from Spain, on the islands' proximity to South America, and on the need to end a colonial situation.
- Britain based its claim on its "open, continuous, effective possession, occupation, and administration" of the islands since 1833 and its determination to apply to the Falklanders the principle of self-determination as recognized in the United Nations Charter.
- Britain asserted that, far from ending a colonial situation, Argentine rule and control of the lives of the Falklanders against their wishes would in fact create one.

2.2 Mikhail Gorbachev and Cold War

Recently, the last leader of the Soviet Union, Mikhail Gorbachev died at the age of 91.

What was the contribution of Mikhail Gorbachev?

About:

- He joined Communist Party of the Soviet Union as a youth, and after Stalin's death, he became a keen proponent of De-Stalinisation reforms started by Nikita Khrushchev.

- He was selected as the First Party Secretary of the Stavropol Regional Committee in 1970. In 1985 when he was elected as the General Secretary of the Communist Party of the Soviet Union, in other words, the de facto ruler of the government.

Achievements:**Major Reforms:**

- He introduced the policies of “glasnost” and “perestroika” which helped in freedom of speech and press and the economic expansion of the economy.
- Perestroika means “restructuring,” specifically of the Communist economy and political system, by incorporating some features of a market economy into the Soviet economy. It also resulted in the decentralization of financial decision-making.
- Glasnost means “openness,” particularly openness of information and began the democratization of the Soviet Union.

Focused on Arms Reduction:

- He forged arms reduction deals with the United States and partnerships with Western powers to remove the Iron Curtain that had divided Europe since World War Two and reunify Germany.
- Iron curtain is the political, military, and ideological barrier erected by the Soviet Union after World War II to seal off itself and its dependent eastern and central European allies from open contact with the West and other non communist areas.

Ended the Cold War:

- Gorbachev is credited with bringing the Cold War to an end, which resulted in the dissolution of the USSR into separate countries.

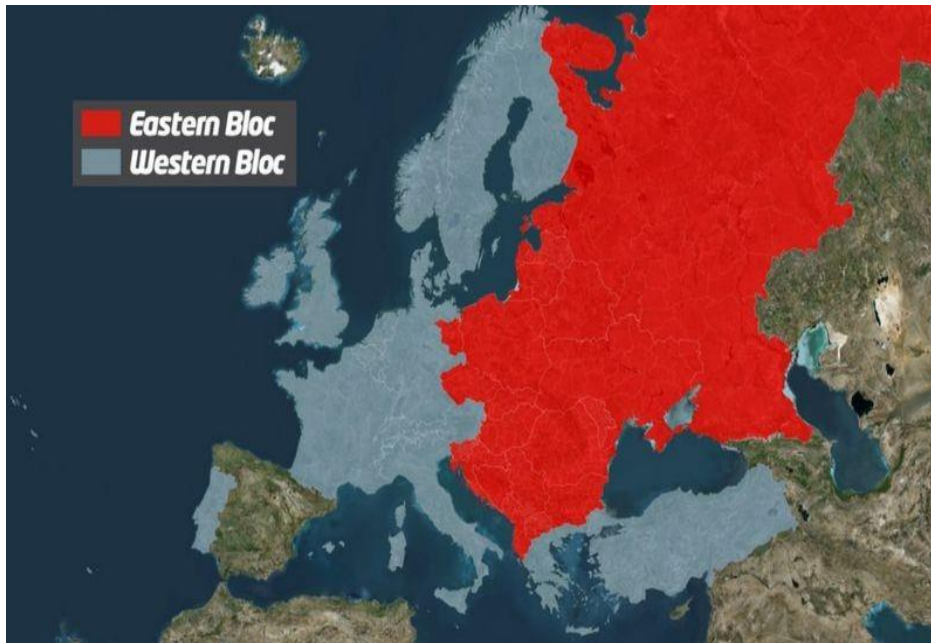
Nobel Peace Prize:

- He was awarded the Nobel Peace Prize in 1990 for his efforts to end the Cold War between the US and USSR.

Indian Connection:

- Gorbachev visited India twice, in 1986 and 1988.
- His objective was to extend his disarmament initiatives in Europe to Asia and to secure Indian cooperation.
- It was Gorbachev’s first visit to a non-Warsaw Pact country after taking over as leader of the Soviet Union.
- The then Prime Minister Rajiv hailed Gorbachev as a “crusader for peace”.
- His address to India’s Parliament during the visit received hyperbolic coverage in the Indian and Soviet press and was seen as a high point of Indian diplomacy.

What was the Cold War?



About:

- The Cold War was a division between Russia and western countries (the US and its allies, like Britain), which started in the 1940s and lasted until 1991.
- It was a war between two ideas and ways of ruling - communism (the east) and capitalism (the west).
- The Russians operated a communist state (from 1922 to 1991), while western countries like the US were capitalist countries.
- Throughout the Cold War, communist and capitalist nations tried to outdo each other, competing to develop the best technologies and weapons.

India's Role:

Non-Alignment Movement:

- The policy of Non Alignment Movement (NAM) did not seek to formally align themselves with either the United States or the Soviet Union, but sought to remain independent or neutral.
- The basic concept for the group originated in 1955 during discussions that took place at the Asia-Africa Bandung Conference held in Indonesia.
- The first NAM Summit Conference took place in Belgrade, Yugoslavia, in September 1961.

Purpose:

- The purpose of the organization was enumerated in Havana Declaration of 1979 to ensure "the national independence, sovereignty, territorial integrity and security of non-aligned countries" in their struggle against imperialism, colonialism, neo-colonialism, racism, and all forms of foreign subjugation.
- During the cold war era the NAM played a vital role in stabilizing the world order and preserving peace and security.

Neutral Stand:

- India was able to take decisions and stances at the international level serving its own interest rather than serving the interest of the superpowers.

2.3 G20 Education Ministers' Meeting

Recently, the Minister of Education addressed the G-20 Education Ministers' Meeting in Bali, Indonesia.

- ❖ Theme: Recovery, Re-imagine and Rebuild Stronger.
- ❖ The G20 presidency is scheduled to move from Indonesia to India in December 2022.

What are the Key Highlights?

- Emphasized on the importance of sharing mutual experiences & working together to create a new world in which education remains the nodal point for addressing common challenges.
- The National Education Policy 2020, based on the foundational principles of access, equity, quality, affordability and accountability is India's guiding light for promoting lifelong learning opportunities and achieving the shared vision of G20.
- Highlighted India's rapid strides towards building a more resilient and inclusive education and skilling ecosystem and realising the creative potential of each learner through the implementation of NEP 2020.
- India is giving special emphasis on formalizing early childhood care & education, supporting differently-abled children, boosting digital and multi-modal learning, flexible entry-exit pathways, integrating education with skills, which are keys to improve learning outcomes.

What is G20?**About:**

- It is a group of 19 countries and the European Union (EU), founded in 1999, with representatives of the International Monetary Fund and the World Bank.
- Its members are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States and the EU.
- Nigeria was meant to be the "20th" member and was dropped at the last minute due to political troubles at the time.
- The membership comprises a mix of the world's largest advanced and emerging economies, representing about two-thirds of the world's population.
- The G20 holds a strategic role in securing future global economic growth and prosperity.
- Together, the G20 members represent more than 80% of world GDP, 75% of international trade and 60% of the world population.
- Functioning of G20: The G-20 has no fixed headquarters, and the secretariat moves by rotation between the countries hosting or assuming Presidency of the grouping each year.

- The members are divided into five groups (India is in Group 2, along with Russia, South Africa and Turkey).
- The G-20 agenda that still depends heavily on the guidance of Finance Ministers and central Governors is finalised by a unique system of ‘Sherpas’, who are special envoys of G-20 leaders.
- Another feature of the G-20 is ‘Troika’ meetings, comprising the countries presiding over the G-20 in the past year, present year, and next year. At present, the Troika is made up of Italy, Indonesia and India.

How has the G20 Evolved over the years?

- The Global Financial Crisis (2007-08) cemented G20’s reputation as the premier crisis management and coordination body.
- The US, which held the G20 Presidency in 2008, elevated the meeting of the Finance Ministers and Central Bank Governors to Heads of State, resulting in the first G20 Summit.
- The Summits in Washington DC, London, and Pittsburgh set the scene for some of the most durable global reforms:
- Blacklisting states in an effort to tackle tax evasion and avoidance, provisioning stricter controls on hedge funds and rating agencies, making the Financial Stability Board an effective supervisory and watchdog body for the global financial system, proposing stricter regulations for too-big-to fail banks, refraining members from imposing new barriers to trade etc.
- By the time Covid-19 struck, the G20 had wandered off from its original mission and G20 lost its focus.
- G20 reinvented itself by widening its agenda to include issues such as climate change, jobs and social security issues, inequality, agriculture, migration, corruption, terror financing, drug trafficking, food security and nutrition, disruptive technologies, and meeting the sustainable development goals.
- In recent times, G20 members have made all the right commitments after the pandemic, but there is little to show in action.
- At the Riyadh Summit in October 2020, they prioritised four things: fighting the pandemic, safeguarding the global economy, addressing international trade disruptions, and enhancing global cooperation.
- The Italian Presidency in 2021 had focused on three broad, interconnected pillars of action People, Planet, Prosperity vowing to take the lead in ensuring a swift international response to the pandemic.

2.4 India-South Africa Bilateral Meeting

- Recently, India and South Africa agreed to develop institutional mechanisms for tie-ups between Higher Education Institutions (HEIs) & Skill Institutions.

Why are the Key Highlights of the Meeting?

About:

- The bilateral meeting was held in Bali, Indonesia.
- It was decided to develop institutional mechanisms for educational tie-ups.

- Also, it was agreed to set up a Joint Working Group on Education between the two countries.

Significance:

- This would further extend the cooperation that already exists and also to realise the full potential of bilateral cooperation in education.
- Introduction of National Education Policy (NEP) has already paved the way for the internationalisation of Indian education. India and South Africa relations are close and friendly and are rooted in shared values and interests.
- Institutional mechanisms for educational tie-ups would strengthen the academic & skill development partnerships and bilateral education cooperation.
- Further, it will be helpful in mutual recognition of skill qualifications & capacity building in skill development.

How has been the India-South Africa Relations?**Background:**

- India's links with the struggle for freedom and justice in South Africa date back to the period during which Mahatma Gandhi started his Satyagraha movement in South Africa over a century ago.
- India was at the forefront of the international community in its support to the anti-apartheid movement.
- It was the first country to sever trade relations with the apartheid Government (in 1946) and subsequently imposed a complete diplomatic, commercial, cultural and sports embargo on South Africa.
- After a gap of four decades, India re-established trade and business ties in 1993, after South Africa ended its institutionalised racial segregation (apartheid).
- In November 1993, diplomatic and consular relations were restored.

Political Relations:

- After South Africa achieved democracy in 1994, it was the Red Fort Declaration on Strategic Partnership between India and South Africa, signed in March 1997 which set the parameters for a rekindled relationship.
- The Strategic Partnership between the two countries was again reaffirmed in the Tshwane Declaration (October 2006).
- Both these declarations have been instrumental mechanisms that have contributed in the past to both South Africa and India for achieving their respective national objectives.
- India and South Africa have a long history of working together by coordinating their views and efforts in institutions of global governance/multilateral fora, in order to achieve greater autonomy and ensure that the agenda of 'South' is prioritised.
- **For Example:** BRICS (Brazil, Russia, India, China and South Africa), IBSA (India, Brazil, and South Africa), G20, Indian Ocean Rim Association (IORA) and World Trade Organisation (WTO).

Economic:

- In 2016, both the countries agreed to collaborate in the defence sector, especially in terms of the opportunities available for South African private sector under 'Make in India' initiative, energy sector, agro-processing, human resource development, and infrastructure development.
- Trade between India and South Africa has exceeded the USD 10 billion target set by the leaders of the two countries in 2020.

Science & Technology:

- The Department of Science and Technology of both countries have collaborated, especially in the Square Kilometer Array (SKA) project.

Culture:

- With the help of the Indian Council for Cultural Relations (ICCR), an intensive programme of cultural exchanges is organised throughout South Africa including scholarships for South African nationals.
- The 9th World Hindi Conference was held in September 2012 at Johannesburg.

Indian Community:

- The major part of the Indian origin community came to South Africa from 1860 onwards as farm labours.
- South Africa is home to the highest number of Indian Diaspora in the African continent, with a total strength of 1,218,000 thereby constituting 3% of South Africa's total population.
- Since 2003 onwards, India has celebrated Pravasi Bhartiya Divas (PBD) each year on 9th January (the day Mahatma Gandhi returned from South Africa to India).

What should be the Way Forward for Both Countries?

- Academic collaboration and student exchange programmes should be commenced in the field of Sanskrit language, Philosophy, Ayurveda and Yoga.
- This will pave the way for broadening the understanding of Hinduism and the shared spiritual, cultural & economic ties.
- Arrangements for the collaborations in skilling sector must be made.
- It will encourage tourism preneurship, help build capacities in emerging areas of travel, tourism, hospitality & business and boost people-to-people linkages.

2.5 IMF Bailout to Sri Lanka

- ❖ Recently, The International Monetary Fund (IMF) approved a preliminary agreement with Sri Lanka on a four-year, USD 2.9 billion bailout package which is aimed at restoring economic stability and debt sustainability for the crisis-ridden south Asian nation.

What is the Bailout Package Offered to Sri Lanka?

Need:

- The Economic Crisis of Sri Lanka with USD 51 billion debt which was caused due to various reasons:
- The Easter bomb blasts of April 2019 in churches in Colombo
- The government policy of lower tax rates and wide-ranging subsidies for farmers during their campaign.
- The Covid-19 pandemic in 2020 which impacted exports of tea, rubber, spices, garments and the tourism sector.

About:

- The IMF package is to be paid in tranches over the next four years, which is less than what India provided to Sri Lanka over four months.
- The package must be approved by the IMF's board of directors.
- The approval is contingent on Sri Lanka's international creditors - commercial lenders such as banks and asset managers, multilateral agencies, as well as bilateral creditors including China, Japan, and India agreeing to restructure its debt.

Benefits:

Improve credit rating:

- It can boost the receiving country's credit ratings, and the confidence of international creditors and investors who may then chip in to provide bridge financing to close the gaps between the tranches.

Aim:

- Its program will aim to boost government revenue, encourage fiscal consolidation, introduce new pricing for fuel and electricity, hike social spending, bolster central bank autonomy, and rebuild depleted foreign reserves.
- The programme aims to reach a primary surplus of 2.3% of GDP by 2024.

What Measures are taken by Sri Lanka's Economy to improve its Economy?

Increase in Revenue:

- The country's budget aimed at increasing revenue to 15% of GDP by 2025 from 8.2% at the end of 2021 by reducing public debt.
- An increase in VAT from 12 to 15%, and compulsory tax registration for everyone aged 18 years and older in order to widen personal income tax collections are among the measures.
- Some 50 state-owned enterprises are up for privatisation.

Reduce the age of retirement:

- The age of retirement in government and semi-government organisations has been brought down to 60 from 65 and 62 respectively.

Banking sector:

- Staff and depositors are to be offered a 20% shareholding in state banks to address recapitalization requirements arising out of non-repayment of loans due to the economic meltdown.

What is the International Monetary Fund (IMF)?**About:**

- The International Monetary Fund (IMF) is an international organization that promotes global economic growth and financial stability, encourages international trade, and reduces poverty.

Conditionalities set by IMF:**About:**

- When a country borrows from the IMF, its government agrees to adjust its economic policies to overcome the problems that led it to seek financial aid.
- These policy adjustments are conditions for IMF loans and serve to ensure that the country will be able to repay the IMF.
- This system of conditionality is designed to promote national ownership of strong and effective policies.
- Conditionality helps countries solve balance-of-payments problems without resorting to measures that are harmful to national or international prosperity.
- Policy commitments agreed with country authorities can take different forms. They include:

Prior actions:

- These are the steps a country agrees to take before the IMF approves financing or completes a review.
- They ensure that a program will have the necessary foundation for success.

Quantitative performance criteria (QPCs):

- Specific, measurable conditions for IMF lending always relate to macroeconomic variables under the control of the authorities.
- Such variables include monetary and credit aggregates, international reserves, fiscal balances, and external borrowing.

Indicative targets (ITs):

- In addition to QPCs, ITs may be set for quantitative indicators to assess progress in meeting a program's objectives.

Structural benchmarks (SBs):

- These are reform measures that often are non-quantifiable but are critical for achieving program goals and are intended as markers to assess program implementation.

2.6 India Bangladesh Agreements

- ❖ Recently, the Prime Minister of Bangladesh has visited India and held talks with Indian Prime Minister.
- ❖ India and Bangladesh have signed seven agreements for cooperation in areas ranging from sharing of river waters to space and unveiled new connectivity and energy initiatives.



What are the Key Highlights of the Meeting?

- The two sides seven Memorandum of Understanding (MoU), which includes:
 - The withdrawal of water from the cross-border Koshiyara river.
 - The agreement will benefit southern Assam in India and the Sylhet region of Bangladesh.
 - Cooperation in space technology.
 - Collaboration on Information Technology systems used by railways in areas such as movement of freight.
 - Science and technology cooperation.
 - Training of Bangladesh Railway personnel and Bangladeshi judicial officers in India.
 - Cooperation in broadcasting between Prasar Bharati and Bangladesh Television.

Thermal Power Project:

- The two nations unveiled the first unit of the Maitree super thermal power project being built in Khulna division of Bangladesh with concessional funding from India. The unit was synchronized with Bangladesh's power grid in August 2022, and the project will generate 1,320MW, when completed.

Rupsha Rail Bridge:

- The 5.13-km Rupsha rail bridge was also inaugurated, a key part of the 64.7-km Khulna-Mongla port broad gauge railway project.
- The bridge was constructed with an Indian line of credit of \$389 million.

- It will increase connectivity with Mongla, Bangladesh's second largest port.

Loans and Advances:

- India has provided concessional loans worth USD 9.5 billion for development projects in Bangladesh, which includes:
 - Rail connectivity between Khulna and Dhaka, Chilahati and Rajshah. Connecting Mongla port with Darshana-Gede at a cost of USD 312 million. The Parbatipur-Kaunia rail project to facilitate the transportation of fuel is being built at a cost of USD 120 million.
 - Supply of road construction equipment and machinery worth USD 41 million to repair and maintain Bangladesh's road network.

Defence Procurement:

- In 2018, India has extended USD 500 million defence Line of Credit (LoC) to Bangladesh.
- In May 2018, Defence public sector undertaking of Kolkata had signed a Memorandum of Understanding with Bangladesh to provide assistance and know-how in the design and construction of warships.
- Dhaka has shared a wish list of military platforms and systems that its armed forces would like to procure from India.
- Bangladesh Army has approved procurement of three items:
 - 5 Bridge Layer Tanks (BLT-72) at USD 10 million
 - 7 Portable Steel Bridges (Bailey) at USD 2.2 million
 - 1 Mine Protective Vehicles at USD 2.2 million.

Other Proposed Procurements include:

- Off-road vehicles, heavy recovery vehicles, armoured engineer reconnaissance vehicles and bullet proof helmets.
- Modernisation and extension of automobile assembling unit for a Bangladesh machine tools factory, supply of explosives, raw materials and tools
- The Bangladesh Navy has proposed the procurement of a logistics ship, floating dock, oil tanker, and an ocean-going tug.

What is India's Vision on CEPA with Bangladesh?**About:**

- The Prime Minister of India has said that India and Bangladesh will soon commence negotiations on a Bilateral Comprehensive Economic Partnership Agreement (CEPA).
- The CEPA is likely to focus on trade in goods, services, and investment, with a key objective being the reduction of the trade gap between the two countries.

- Bangladesh prepares to graduate into a developing nation by 2026, after which it may no longer qualify for trade benefits that it currently enjoys as a least-developed country; it is keen to clinch the CEPA within a year.

India Bangladesh Trade Relations:

- In 2021-22, Bangladesh has emerged as the largest trade partner for India in South Asia and the fourth largest destination for Indian exports worldwide.
- Exports to Bangladesh grew more than 66% from USD 9.69 billion in FY 2020-21 to USD 16.15 billion in FY 2021-22.
- Despite Covid-19 related disruptions, bilateral trade grew 44% from USD 10.78 billion in 2020-21 to USD 18.13 billion in 2021-22.

India's Exports to Bangladesh:

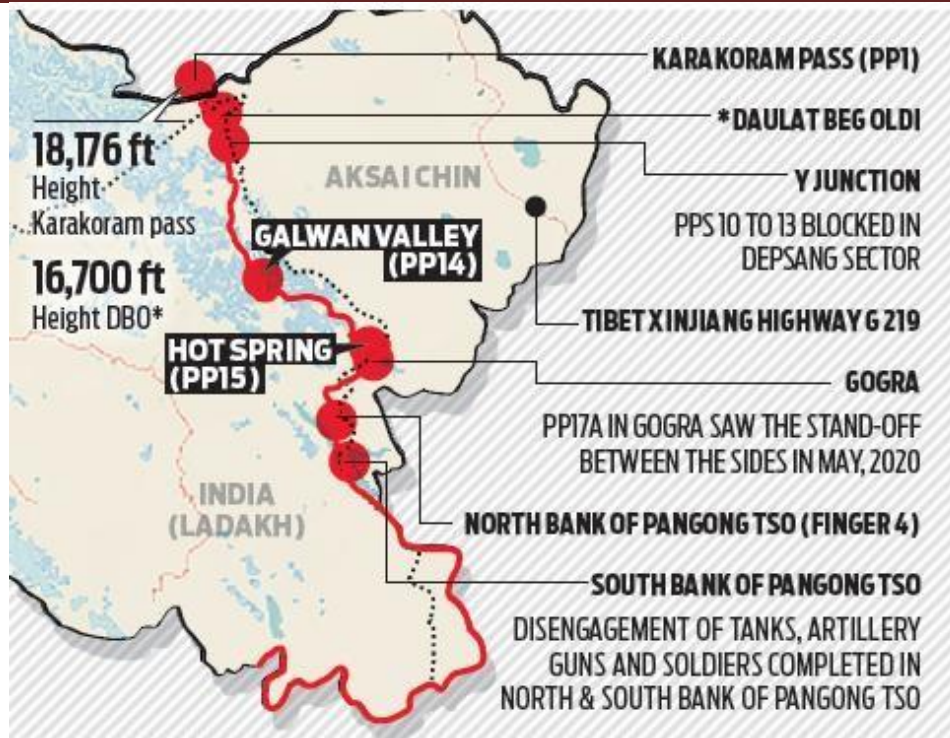
- Raw cotton, non-retail pure cotton yarn, and electricity India's Imports from Bangladesh:
- Pure vegetable oils, non-knit men's suits, and textile scraps.

What are some Issues which Both Nations should Resolve?

- There should be efforts to resolve pending issues concerning sharing of waters, resolving continental shelf issues in the Bay of Bengal, bringing down border incidents to zero, and managing the media.
- PM of Bangladesh held out the hope that the two countries will resolve the issue of sharing the waters of the Teesta River an agreement on the matter has been pending since 2011.
- Bangladesh has already raised concerns over roll out of the National Register of Citizens (NRC) in Assam, an exercise carried out to identify genuine Indian citizens living in Assam and weed out illegal Bangladeshis.
- Currently, Bangladesh is an active partner of the Belt and Road Initiative (BRI) that Delhi has not signed up to.
- In the security sector, Bangladesh is also a major recipient of Chinese military inventory, including submarines.

2.7 Indo-China Disengagement at Hot Springs & Gogra Post

- ❖ Recently, the Indian and Chinese troops have begun disengaging at Patrolling Pillar-15 (PP-15) in the Gogra-Hotspring region of Eastern Ladakh.
- Forces of the two countries have been locked in a confrontational position in the area since April 2020. The move comes ahead of Shanghai Cooperation Organisation (SCO) summit in Uzbekistan.



Why are the Key Highlights about the Current Disengagement?

- Indian and Chinese armies have begun to disengage from Patrolling Point-15 in the Gogra- Hotsprings area of Eastern Ladakh, marking a step forward to end the standoff ongoing since May 2020.
- PP-15 is one of the 65 patrolling points in Ladakh along the Line of Actual Control (LAC).
- The disengagement has begun in a coordinated and planned way, which is conducive to peace and tranquility in the border areas.
- As per the understanding reached earlier on disengagement, a buffer zone is to be created at the friction points once troops are withdrawn by both sides and new patrolling norms are to be worked out after complete disengagement and de-escalation.
- The consensus about the disengagement was reached in the 16th round of India China Corps Commander Level Meeting.
- The 16th round of talks was held on July 17, 2022, at the Chushul border personnel meeting point on the Indian side.
- Since the stand-off began in May 2020, the two sides have so far held 16 rounds of talks with disengagement undertaken from both sides of Pangong Tso.
- With disengagement at PP-15, forces of the two countries have disengaged at all friction points in the region which included the North and South banks of the Pangong Tso, PP-14, PP-15 and PP-17A.
- The last disengagement between the forces of the two countries had been achieved at PP-17 A in August 2021 following the 12th Corp Commander Level meeting.
- The friction points that remain now are Demchok and Depsang, which China has constantly refused to accept, maintaining that they are not a part of the current stand-off.

What We Need to Know about the Hot Springs and Gogra Post?

Location:

- Hot Springs is just north of the Chang Chenmo river and Gogra Post is east of the point where the river takes a hairpin bend coming southeast from Galwan Valley and turning southwest.
- The area is north of the Karakoram Range of mountains, which lies north of the Pangong Tso lake, and south east of Galwan Valley.

Importance:

- The area lies close to Kongka Pass, one of the main passes, which, according to China, marks the boundary between India and China.
- India's claim of the international boundary lies significantly east, as it includes the entire Aksai Chin area as well.
- Hot Springs and Gogra Post are close to the boundary between two of the most historically disturbed provinces (Xinjiang and Tibet) of China.

What should be the Way Forward?

- India must continue to press for complete disengagement and de-escalation from all friction areas.
- Also, the Corps Commander level talks should be continued as the relationship cannot go back to normal as long as the situation along the standoff continues.
- India should keep its stand firm over the restoration of the status quo and restoration along the LAC.

What is China's fully solar-powered, semi-satellite drone?

About:

- China's first fully solar-powered Unmanned Aerial Vehicle (UAV) has successfully completed its maiden test flight with all onboard systems functioning optimally.
- The drone is a large machine powered entirely by solar panels with a wingspan of 164-ft.
- Named the Qimingxing-50, or Morning Star-50, this drone flies above 20-km altitude where there is stable airflow with no clouds.
- The High-Altitude, Long-Endurance (HALE) UAV can stay airborne for long durations.
- This helps these drones to make the maximum use of solar equipment to stay functional for extended durations.
- This drone is also referred to as 'High Altitude Platform Stations' or pseudo- satellites.

Significance:

- It can operate without a break for months, even years.
- It is capable of carrying out satellite-like functions.

- If satellite services are not available for, say, time-sensitive operations or in case of wartime disruption, then near-space UAVs can step in to fill the operational gap.
- Morning Star-50's long-endurance provides an added advantage to make this capability available over a longer period.
- It can undertake surveillance missions that require it to stay operational, watching over borders or oceans, for months.
- It can be used for monitoring forest fires, providing communication and environment relay.

2.8 Tenth Non-Proliferation Treaty Review Conference

- ❖ Recently, the Non-Proliferation Treaty Review Conference which was held in New York ended without adopting a substantive outcome due to Russia's objection.

What is the Nuclear Proliferation Treaty?

About:

- The NPT is an international treaty whose objective is to prevent the spread of nuclear weapons and weapons technology, to foster the peaceful uses of nuclear energy, and to further the goal of disarmament.
- The treaty was signed in 1968 and entered into force in 1970. Presently, it has 191 member states.
- India is not a member.
- It requires countries to give up any present or future plans to build nuclear weapons in return for access to peaceful uses of nuclear energy.
- It represents the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon States.
- Nuclear-weapon states parties under the NPT are defined as those that manufactured and exploded a nuclear weapon or other nuclear explosive devices before 1st January, 1967.

India's Stand:

- India is one of the only five countries that either did not sign the NPT or signed but withdrew later, thus becoming part of a list that includes Pakistan, Israel, North Korea, and South Sudan.
- India always considered the NPT as discriminatory and had refused to sign it.
- India has opposed the international treaties aimed at non-proliferation since they were selectively applicable to the non-nuclear powers and legitimised the monopoly of the five nuclear weapons powers.

What are the concerns arising out of Russia's disagreement?

- The occupation of the Zaporizhzhia nuclear plant in southeastern Ukraine as well as the takeover of the Chernobyl nuclear plant, scene of the world's worst nuclear disaster in 1986, renewed global fears of another nuclear emergency.

- The threat of nuclear weapons use today is higher than at any time since the heights of the Cold War and the deteriorated international security environment.
- This NPT conference represents a missed opportunity to strengthen the treaty and global security by agreeing to a specific action plan with benchmarks and timeframes to effectively address the growing dangers of nuclear arms racing and nuclear weapons use.

What are the Other Treaties and Agreements related to Nuclear Weapon?

- The Treaty Banning Nuclear Weapon Tests in the Atmosphere, In Outer Space and Under Water, also known as the Partial Test Ban Treaty (PTBT).
- Comprehensive Nuclear-Test-Ban Treaty (CTBT): India has not signed the CTBT as India is a strong advocate for a time-bound disarmament commitment from nuclear weapon states (NWS) and may use the lack of a commitment as a reason to refrain from signing the CTBT.
- The Treaty on the Prohibition of nuclear weapons (TPNW): It entered into force on 22 January 2021 and India is not a member of this treaty.
- Nuclear Suppliers Group(NSG): India is not a member of the NSG.
- The Missile Technology Control Regime.
- Hague Code of Conduct against Ballistic Missile Proliferation. The Wassenaar Arrangement.

2.9 Issue of Tamilians in Sri Lanka

- ❖ Recently, India has expressed concern over the lack of any measurable progress by Sri Lanka on its commitment towards reaching a political solution on the Tamil issue.
- India, in its statement at the 51st session of the United Nations Human Rights Council in Geneva said it has “always believed in the responsibility of States for promotion and protection of human rights and constructive international dialogue and cooperation” guided by the U.N. Charter.

What concerns were raised by India?

- The current crisis in Sri Lanka has demonstrated the limitations of a debt-driven economy and the impact it has on the standard of living.
- It is in the best interests of Sri Lanka to build the capacity of its citizens and work towards their empowerment.
- Over 13 years since the end of Sri Lanka’s civil war in 2009, when tens of thousands of civilians were killed and disappeared, survivors continue demanding justice and accountability for war-time crimes.
- In the post-war years, Sri Lanka’s human rights defenders have frequently flagged concerns over persisting militarisation, especially in the Tamil-majority north and east, repression, and the shrinking space for dissent.

What is the Tamil issue and its History?

Background:

- Sri Lanka is 74.9 % Sinhalese and 11.2 % Sri Lankan Tamil. Within these two groups, Sinhalese tend to be Buddhist and Tamils tend to be Hindu, displaying significant linguistic and religious divisions.
- It is believed that the Tamils arrived in Sri Lanka both as invaders and traders from India's Chola Kingdom.
- Some origin stories suggest that the Sinhalese and Tamil communities have experienced tension from the very beginning not out of cultural incompatibility, but rather out of power disputes.

Pre-Civil War:

- During British Rule the pattern of Tamil favoritism left Sinhalese people feeling isolated and oppressed. Soon after British occupiers left the island in 1948, these patterns of Tamil dominance changed dramatically.
- After British independence, many Sinhalese gained power and went on to gradually pass acts effectively disenfranchising their Tamil counterparts, which led to the creation of Liberation Tigers of Tamil Eelam (LTTE) in 1976.
- LTTE was an uncompromising group inspired by Che Guevarra and his guerilla warfare tactics.
- The conflict then escalated into civil war in 1983, leading to riots targeting Tamils in Colombo.
- The fighting lasted just under three decades and ended in May 2009, when the Sri Lankan government announced that they killed the LTTE leader.

Post-Civil War:

- Although the Civil War ended in 2009, the current situation in Sri Lanka has only partially improved.
- A large portion of the Tamil population remains displaced. While there are fewer political and civil rights issues, instances of torture and enforced disappearances persist even in recent years.
- The government's Prevention of Terrorism Act (PTA) targets mostly Tamils. In a more subtle sense, the Sri Lankan government continues to disenfranchise the Tamil community.
- Through the process of "Sinhalization," for instance, Sinhalese culture has slowly replaced that of the Tamil population.
- Sinhalese monuments, road signs, street and village names, as well as Buddhist places of worship became more common in predominantly Tamil areas.
- These efforts have infringed upon, and in some cases even erased, the Tamil perspective on Sri Lankan history, as well as Tamil and Hindu elements of the country's culture.

What are the Concerns for India?

Rehabilitation of Refugees:

- A lot of Srilankan Tamils who evaded from Srilankan civil war (2009) are seeking refuge in Tamil Nadu. They are not returning in fear of being targeted again. It is a challenge for India to rehabilitate them.

Sentiments of Indian Tamils:

- A number of protests and criticism is drawn at the end of the Indian Government for overlooking the plight of Srilankan Tamils to maintain good relationship with Srilanka.

Strategic interests vs Tamil question:

- Often India has to trade off on the question of Tamilian minority rights over strategic issues to protect its economic interests in its neighborhood and to counter Chinese influence in the Indian Ocean.

What are the other Issues in India-Sri Lanka Relations?

Killing of Fisherman:

- Killing of Indian fishermen by the Sri Lankan Navy is a lingering issue between these two nations.
- In 2019 and 2020, a total of 284 Indian fishermen were arrested and a total of 53 Indian boats were confiscated by the Sri Lankan authorities.

East Coast Terminal project:

- In 2021 Sri Lanka canceled an MoU signed with India and Japan for the East Coast Terminal project.

Influence of China:

- China's rapidly growing economic footprint (and political clout as a corollary) in Sri Lanka is straining India-Sri Lanka relations.
- China is already the largest investor in Sri Lanka, accounting for 23.6% of the total Foreign Direct Investment (FDI) during 2010-2019 as against 10.4% from India.

13th Amendment of the Sri Lankan Constitution:

- It envisages devolution of necessary powers to the provincial councils to address the just demand of the Tamil people for equality, justice, peace, and respect within a united Sri Lanka.

Way Forward

- It is in Sri Lanka's best interests to build the capacity of its citizens and work towards their empowerment, for which devolution of power to the grassroots level is a pre-requisite. Nurturing the Neighbourhood First policy with Sri Lanka is important for India to preserve its strategic interests in the Indian Ocean region.

3. ECONOMY

3.1 Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PMFME) Scheme of M/o Food Processing Industries, under Aatmanirbhar Bharat Abhiyan, Completes Two Years

- ❖ PMFME Scheme is currently being implemented in 35 States and Union Territories in the country
- ❖ PMFME Scheme envisages financial support of Rs. 40,000 for working capital and purchase of small tools for each member of the Self Help Group (SHG) engaged in food processing activities
- ❖ Over 1 lakh SHG members have been identified and the seed capital amount of Rs. 203 Cr. has been released so far
- The centrally sponsored Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME) Scheme was launched on 29th June, 2020 by the Ministry of Food Processing Industries, Government of India under the Aatmanirbhar Bharat Abhiyan. The scheme has completed two years and a journey that started with the zest to empower the unorganized Micro Enterprises continues to fulfill the aim of formalising the food processing sector and celebrating their tremendous support towards the economy, has borne good results for the sector.
- Envisioning enhancement of the existing individual micro-enterprises in the unorganized segment of the food processing industry and formalization of the sector, the PMFME Scheme is currently being implemented in 35 States and Union Territories. Under the scheme, the submission process for the applicants to apply for the credit-linked subsidy is done through the online portal. Nearly 50,000 applicants have registered on the portal and more than 25,000 applications have been successfully submitted so far.
- The digital GIS One District One Product (ODOP) map of India has been developed to provide details of ODOPs of all the States and UTs. The digital map also has indicators for Tribal, SC, ST, aspirational districts and Incubation Centers approved under the PMFME Scheme. It will enable stakeholders to make concerted efforts for its value chain development.
- The Ministry of Food Processing Industries signed Joint Letters with Ministry of Rural Development (MoRD), Ministry of Tribal Affairs (MoTA) and Ministry of Housing and Urban Affairs (MoHUA) and MoUs with Indian Council of Agriculture Research (ICAR), National Cooperative Development Corporation (NCDC), Tribal Co-operative Marketing Development Federation of India (TRIFED), National Agricultural Cooperative Marketing Federation of India (NAFED), National Scheduled Castes Finance and Development Corporation (NSFDC), National Scheduled Tribes Finance and Development Corporation (NSTFDC), Food Safety and Standards Authority of India (FSSAI) and Department of Animal Husbandry and Dairying (DAHD). An agreement has been signed with the Union Bank of India as the Nodal Bank for the PMFME Scheme and MoUs have been signed with 15 banks as official lending partners for the scheme.
- Under the Capacity Building component of the scheme, the National Institute of Food Technology Entrepreneurship and Management, Kundli (NIFTEM-K) and the National Institute of Food Technology

Entrepreneurship and Management, Thanjavur (NIFTEM-T) have been performing a key role in providing training and research support to food processing enterprises/groups/clusters in partnership with the State Level Technical Institutions and private training partners. Training of beneficiaries is being conducted on food product processing including Food Safety & Hygiene and Entrepreneurship Development Programme (EDP).

- 75 Incubation Centers have been approved under the scheme. The Ministry in collaboration with the National Institute of Food Technology Entrepreneurship and Management, Thanjavur (NIFTEM-T) has also developed an online portal for submission of Incubation Center proposals and a digital map for the facilitation of details of Incubation Centers across the country.
- The PMFME Scheme also envisages financial support of Rs. 40,000 for working capital and purchase of small tools for each member of the Self Help Group (SHG) engaged in food processing activities. Over 1 lakh SHG members have been identified and the seed capital amount of Rs. 203 Cr. has been released so far.
- Under the scheme, MoUs have been signed with NAFED and TRIFED to take up the marketing and branding activities for supporting and handholding the beneficiaries along the entire value chain. Under the component 10 ODOP Brands in association with NAFED have been launched. The scheme also envisages marketing support to State-level brands. As of now, 2 State-level brands have been successfully launched, including the brand “AASNAA” from the State of Punjab and the brand “BHIMTHADI” from the State of Maharashtra and many others in the pipeline.
- To commemorate 75 years of India’s Independence, under the Azadi Ka Amrit Mahotsav initiative, the Ministry is conducting 75 Unique One District One Product (ODOP) webinars/offline workshops across the country in collaboration with States/UTs and NIFTEM. “Kahaani Sukshma Udyamon Ki” a series of success stories is also being published under this initiative wherein the inspiring stories feature the journey of the Micro Enterprises and Self Help Groups in the food processing sector, create awareness about the opportunities in the sector and encourage the existing and aspiring entrepreneurs to take the opportunity of availing the PMFME Scheme benefits to upscale their food processing business.
- A monthly e-newsletter is also published featuring success stories, stories of innovation, One District One Product based stories, and research-based articles related to food processing. The E-Newsletter also features interviews with academics and industry professionals from the food processing sector, innovations and trends in the sector that can help Micro Enterprises, Self Help Groups, FPOs and Co-operatives to grow and become Aatmanirbhar.

3.2 India’s largest floating solar power project commissioned

- ❖ 100 MW Floating Solar Power Project fully operationalized at NTPC-Ramagundam
- ❖ Endowed with advanced technology and Environment-friendly features
- ❖ Total commercial operation of Floating Solar Capacity in Southern Region rises to 217 MW

- India's largest floating Solar Power Project is now fully operational. NTPC declared Commercial Operation of the final part capacity of 20 MW out of 100 MW Ramagundam Floating Solar PV Project at Ramagundam, Telangana with effect from 00:00 hours of July 01, 2022.
- With the operationalisation of 100-MW Solar PV Project at Ramagundam, total commercial operation of Floating Solar Capacity in Southern Region rose to 217 MW. Earlier, NTPC declared Commercial operation of 92 MW Floating Solar at Kayamkulam (Kerala) and 25 MW Floating Solar at Simhadri (Andhra Pradesh), Shri Anand added.
- The 100-MW Floating Solar project at Ramagundam is endowed with advanced technology as well as environment friendly features. Constructed with financial implication of Rs. 423 crores through M/s BHEL as EPC (Engineering, Procurement and Construction) contract, the project spreads over 500 acres of its reservoir. Divided into 40 blocks, each having 2.5 MW. Each block consists of one floating platform and an array of 11,200 solar modules. The floating platform consists of one Inverter, Transformer, and a HT breaker. The solar modules are placed on floaters manufactured with HDPE (High Density Polyethylene) material.



- The entire floating system is being anchored through special HMPE (High Modulus Polyethylene) rope to the dead weights placed in the balancing reservoir bed. The power is being evacuated up to the existing switch yard through 33KV underground cables. This project is unique in the sense that all the electrical equipment including inverter, transformer, HT panel and SCADA (supervisory control and data acquisition) are also on floating ferro cement platforms. The anchoring of this system is bottom anchoring through dead weight concrete blocks.
- From environment point of view, the most obvious advantage is minimum land requirement mostly for associated evacuation arrangements. Further, with the presence of floating solar panels, the evaporation rate from water bodies is reduced, thus helping in water conservation. Approximately 32.5 lakh cubic meters per year water evaporation can be avoided. The water body underneath the solar modules helps in maintaining their ambient temperature, thereby improving their efficiency and generation. Similarly,

while coal consumption of 1,65,000 Tons can be avoided per year; Co2 emission of 2,10,000 tons per year can be avoided.

3.3 Operation “NARCOS”

- Railway Protection Force as one of the law enforcing agency has gained prominence in recent times. RPF has been empowered to conduct search, seizure and arrest under NDPS Act since April 2019 and has been actively participating in the efforts of Government to restrict this illegal trade. In order to bring attention to the menace of NDPS, a month long pan India drive against smuggling of narcotics through rail, was launched under code name Operation “NARCOS” in the month of June-2022. Under this operation RPF has performed excellently against the carriers/transporters of Narcotics product through Indian Railways. RPF intensified its checks in trains and in identified black spots across the country in coordination with NCB and other LEA’s to target drug peddlers involved in this illegal trade. In the month of June 2022, RPF has recovered various narcotics products including designer products valued Rs.7,40,77,126/- and within its own domain arrested 165 persons who were carrying NDPS and handed them over to the concerned Law Enforcement Agencies for onward legal action.
- Narcotics not only destroys the health of youth, they also damage the economy and the well being of the nation. Drug addiction has far reaching implications as it affects both the body and the mental health of the person.
- Indian Railways plays a leading role in transportation of passengers and goods and has the widest network in India, that is why long-distance trains are often used by offenders to smuggle the NDPS into different states disguising drug carriers as common passengers. Thus, it becomes very challenging for the security agencies to stop this flow and prevent railways from becoming a conduit of illegal transportation of NDPS.

3.4 Toy imports down by 70% and exports up 61% over last three years as Make in India yields positive results for the sector

- ❖ TOY BIZ attracts 96 exhibitors with ‘Made In India’ product manufactured domestically by small, medium and large enterprises Indian history, and culture to strengthen domestic designing and position India as a global manufacturing hub for toys.
- Interventions by the government for the Toy Sector.
 1. Directorate General of Foreign Trade (DGFT) vide Notification No.33/2015-2020, dated 02.12.2019 mandated sample testing of each consignment and no permission for sale unless the quality testing is successful. In case of failure, the consignment is either sent back or destroyed at the cost of the importer.
 2. Basic Custom Duty (BCD) on Toys-HS Code-9503 has been increased from 20% to 60% in February, 2020.

3. The Government issued Toys (Quality Control) Order, 2020 on 25/02/2020 through which toys have been brought under compulsory Bureau of Indian Standards (BIS) certification with effect from 01/01/2021. As per the Quality Control Order (QCO), every toy shall conform to the requirements of relevant Indian Standard and bear the Standard Mark under a licence from BIS as per Scheme-I of BIS (Conformity Assessment) Regulations, 2018. This QCO is applicable to both domestic manufacturers as well as foreign manufacturers who intend to export their toys to India.
4. QCO on Toys was amended on 11.12.2020 to exempt goods and articles manufactured and sold by artisans registered with Development Commissioner (M/o Textile) and also by registered proprietor and authorized users of a product registered as Geographical Indication by the Office of Controller General of Patents, Designs and Trademarks (CGPDTM).
5. BIS made special provisions on 17.12.2020 so as to grant license to micro scale units manufacturing toys without testing facility for one year and not to insist on establishing in-house facility.
6. BIS has granted 843 licenses to domestic manufacturers from safety of toys, out of these, 645 licenses have been granted for non-electric toys and 198 licenses granted for electric toys. In addition to this, 6 licenses have been granted to international toy manufacturers.

3.5 Odisha, UP, AP emerge as top three states among General Category States in the 1st 'State Ranking Index for NFSA'; Tripura, Himachal Pradesh and Sikkim take top three positions in the Special Category States/UTs

- ❖ Odisha has been adjudged the top ranked State followed by Uttar Pradesh at the 2nd spot and Andhra Pradesh at third amongst the General Category States in 'State Ranking Index for NFSA'. Among the Special Category states/UTs, Tripura stood first followed by Himachal Pradesh and Sikkim respectively. Further, among the 3 UTs where Direct Benefit Transfer (DBT)- Cash is operational, Dadra and Nagar Haveli & Daman and Diu is the top ranked UT.

3.6 National Food Security Act (NFSA), 2013

Objective:

- To provide for food and nutritional security in the human life cycle approach, by ensuring access to adequate quantities of quality food at affordable prices to people to live a life with dignity.
- **Coverage:**
- 75% of the rural population and upto 50% of the urban population for receiving subsidized foodgrains under Targeted Public Distribution System (TPDS).
- Overall, NFSA caters to 67% of the total population.

Eligibility:

- Priority Households to be covered under TPDS, according to guidelines by the State government.
- Households covered under existing Antyodaya Anna Yojana.

Provisions:

- 5 Kgs of foodgrains per person per month at Rs. 3/2/1 per Kg for rice/wheat/coarse grains.
- The existing AAY household will continue to receive 35 Kgs of foodgrains per household per month.
- Meal and maternity benefit of not less than Rs. 6,000 to pregnant women and lactating mothers during pregnancy and six months after the child birth.
- Meals for children upto 14 years of age.
- Food security allowance to beneficiaries in case of non-supply of entitled foodgrains or meals.
- Setting up of grievance redressal mechanisms at the district and state level.

3.7 Finance and Corporate Affairs Minister, Smt. Nirmala Sitharaman chairs 1st meeting of Apex Monitoring Authority of National Industrial Corridor Development Programme.

Finance Minister emphasizes upon optimal utilization of resources for Industrial Corridors

About the Programme

- The Government of India is developing various Industrial Corridor Projects as part of the National Industrial Corridor Programme.
- Each industrial in the Industrial Corridors is envisaged to be implemented by a Special Purpose Vehicle (SPV) in the form of a company set up under the Companies Act, 2013 as a joint venture between the central and the state governments.

Aims

- Development of futuristic and greenfield industrial cities in India which can compete with the best manufacturing and investment destinations in the world.
- Creation of employment opportunities and economic growth leading to overall socio-economic development.
- Provide multi-modal connectivity with complete 'plug and play' infrastructure till the plot level along with building resilient and sustainable future-ready cities.
- Expansion of industrial output and provide better living and social facilities for the new and growing workforce.
- Enhance India's competitiveness in manufacturing through the creation of world-class infrastructure and reduced logistics costs.
- The National Industrial Corridor Development Corporation Limited (NICDC) is the implementing agency.
- It acts as a knowledge partner to NICDIT in respect of all the Industrial Corridor projects for undertaking various project development activities.
- Monitoring and Review Mechanism:
 - The National Industrial Corridor Development and Implementation Trust (NICDIT).

- In 2016, the government approved the expansion of the scope of existing DMIC-Project Implementation Trust Fund (PITF) and re-designated it as NICDIT.
- NICDIT comes under the administrative control of the Department of Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.
- An Apex Monitoring Authority under the chairmanship of the Finance Minister periodically reviews the activities of NICDIT and progress of the projects.
- 11 Industrial Corridors Projects are being taken up for development with 32 Projects to be developed in four phases as part of the National Master Plan for providing multimodal connectivity to economic zones up to 2024-25.

3.8 PM Gati Shakti National Master Plan – “An impetus to Power infrastructure development”

- ❖ One-click Comprehensive view to steer and simplify the planning & implementation process in Power transmission projects
- ❖ PM Gati Shakti NMP portal plays critical role in planning, tendering, implementation and approval stages
- ❖ 9 High Impact Power projects spanning over 6 RE rich States mapped in the portal
- The Prime Minister launched PM Gati Shakti-National Master Plan (NMP) for infrastructure development in October, 2021 with the objective to bring different Ministries/ Utilities & infrastructure planning under a single unified vision, across all sectors such as Highways, Railways, Aviation, Gas, Power transmission, Renewable Energy etc. Such an unprecedented initiative outlines the vision for infrastructure development across the country including “Power” in general and “Transmission” in particular, which strengthens the energy life-line of the country.
- It would be a game changer providing multi-modal connectivity of infrastructures to various economic zones by leveraging technology extensively including spatial planning tools with indigenous ISRO imagery developed by BISAG-N, Gujarat, fulfilling the objective of “Atmanirbhar Bharat”.
- As country takes strides towards strengthening its infrastructure, power plays a pivotal role in development of infrastructure and the economy. The PM Gati Shakti NMP portal provides "One-click Comprehensive view” to steer and simplify the planning & implementation process by reduction of time and cost of implementation in Power transmission projects. It would also aid in improving logistics efficiency through single digital platform & multi-modal portal.
- In development of Power Transmission projects, PM Gati Shakti NMP portal shall play critical role in Planning, Tendering, Implementation and Approval stages. At planning stage, user shall identify the tentative line length of the planned transmission line and location of the substation(s). Under tendering/bidding stage, the survey agency will utilize the portal for identifying the best techno-economical route. During Implementation stage, based on actual conditions, finalization of the

transmission line route and location of substation shall be done. Lastly, approval stage is envisaged for single window clearance.

- PM's call for "One Sun, One World, One Grid" has set the tone for strong and reliable transmission system which will support India's Renewable Energy (RE) ambitions along with supplementing growth of renewables globally. Power transmission has been an enabler in the RE story and various key Power projects are enabling RE evacuation across country. Of these projects, Ministry of Power has undertaken 9 High Impact Power projects (10 no. of transmission lines) spanning over 6 RE rich States Viz. Rajasthan, Gujarat, Madhya Pradesh, Maharashtra, Karnataka, Tamil Nadu. The requisite details of projects have been mapped in the portal, by creating a separate layer of ISTS transmission lines incorporating basic data (like Line route, tower location, location of substation, name of owner etc.).
- In line with goal of PM GatiShakti, entire "existing" Inter State Transmission System (ISTS) lines have been mapped on the portal spanning across length and breadth of the country. Also, 90% "under construction" ISTS lines have also been integrated in the portal and remaining 10% ISTS lines are to be integrated after finalization of route survey by respective Transmission Service Providers.
- PM GatiShakti NMP portal will ultimately aid in solving problems of development of infrastructures in the country by building secure, sustainable, scalable and collaborative approach towards infrastructure planning for seamless connectivity to economic zones. Now, with PM Gati Shakti NMP portal and onset of more holistic & comprehensive approach towards planning for Ministries, Utilities and Infrastructure, we as a nation are well poised to take giant stride towards evolving into 5 trillion dollars economy while enabling reliable "Power to All".

3.9 Government formulates strategy to promote NER as agri export hub

- ❖ Government initiatives helped NE region witness more than 85% export growth in last six years
- ❖ Bangladesh, Bhutan, Middle East, UK, Europe are major destination for export of NER products
- ❖ APEDA organises 136 capacity building programmes on export awareness & 22 International Buyer Seller Meetings in last three years in NER
- ❖ APEDA signs a MoU with Assam Agriculture University, Jorhat to conduct various training programmes on pre-harvest and post-harvest management and other research activities
- To give boost to the export of horticulture products grown in North-Eastern (NE) states, the overnment is now up with a robust strategy to promote locally produced agricultural products to the international markets. The NE region is geopolitically important as it shares international boundaries with China and Bhutan, Myanmar, Nepal and Bangladesh making it the potential hub for the export of agricultural produce to neighbouring countries as well as other foreign destinations.
- As a result, there has been a significant increase in the export of agricultural produce from NE states like Assam, Nagaland, Manipur, Mizoram, Tripura, Arunachal Pradesh, Sikkim and Meghalaya in the last few years. The NE region witnessed an 85.34 percent growth in the export of agricultural products in the

last six years as it increased from USD 2.52 million in 2016-17 to USD 17.2 million in 2021-22. The major destination of export has been Bangladesh, Bhutan, the Middle East, the UK and Europe.

- To provide potential market linkages, the Agricultural and Processed Food Products Development and Authority (APEDA), under the Ministry of Commerce and Industry, organised field visits of importers to have first-hand information about the qualitative cultivation practices being followed by farmers. Importers were mostly the Middle East, far Eastern countries, and European nations and Australia, etc.
- In the last three years, APEDA organised 136 capacity building programmes on export awareness across the different parts of NER. Highest, 62 capacity building programmes were held in NER in 2019-20, while 21 in 2020-21 and 53 such programmes were organised by APEDA in the year 2021-22. Apart from capacity building initiatives, APEDA facilitated 22 International Buyer-Seller Meets as well as trade fairs in NER in the last three years.
- APEDA also organised conference on the Export Potential of Natural, Organic and Geographical Indications (GI) Agro Products in Guwahati on June 24, 2022 to tap the abundant export potential of organic agricultural products from Assam and neighbouring states of NER.
- APEDA aims at creating a platform in Assam for the exporters to get the products directly from the producer group and the processors. The platform will link the producers and processors of Assam and exporters from other parts of the country that would expand the base of the export pockets in the North-Eastern states, including Assam and increase the employment opportunities among the people of the state.
- APEDA signs MoU with Assam Agriculture University, Jorhat to conduct various training programmes on pre-harvest and post-harvest management and other research activities for the promotion of export from the region.
- The APEDA promoted GI products from NER like Bhut Jolokia, Assam Lemon, etc drew the attention of Hon'ble Prime Minister Shri Narendra Modi who had mentioned it during his Maan Ki Baat programme. Assam Lemon is now exported regularly to London and the Middle East and as of now, more than 50 MT of Assam Lemon has been exported. Several consignments of litchi and pumpkin have also been exported by APEDA from Assam to different countries.
- "Assam and the other states of North East Region have a favourable climate condition and the soil type for growing almost all agricultural and horticultural crops. As most of NER's boundaries are shared with nations like Bhutan, Bangladesh, Myanmar, and China, there are possibilities of enhancing exports from the region," APEDA Chairman Dr M Angamuthu said.
- During Covid-19 period, APEDA continued to push its export plans through Virtual Buyer Seller Meet in association with the Embassy of India located in different countries with exporters and FPOs/FPCs from NER regarding the sourcing of pineapple, ginger, lemon, orange, etc. APEDA also organised Virtual Trade Fairs during the pandemic and facilitated the export to foreign countries.

- APEDA has also planned to undertake several other projects like capacity building of 80 budding entrepreneurs and exporters from the region, the Farmer Producer Organizations (FPOs) and Farmer Producer Companies (FPCs) and the state govt. officials, organize skill development and training in food processing, value addition on horticultural produce, etc.
- APEDA has also planned to facilitate capacity building to officials of the Assam Agriculture Department and selected officials would be sent in batches to Karnataka, Maharashtra and Gujarat.
- APEDA also extend its support for branding and promotion of North East products such as KIWI Wine, processed foods, carrying out a wet sampling of Joha Rice Pulao, Black Rice kheer, etc.
- As a part of capacity building, APEDA organised skill development programmes for manufacturers, exporters and entrepreneurs to utilise the local produce for value addition and export. Training programmes are being held in different states of the Northeast in association with the Central Food Technology Research Institute, Mysore (CFTRI) and Indian Institute of Food Processing Technology (IIFPT).
- APEDA also facilitated a workshop on Food Quality and Safety Management for Export of Processed Food Products from NER at Ri Bhoi in Meghalaya and Dibrugarh in Assam for boosting exports of agricultural and processed food products from NER through sustainable food value chain development.
- With the APEDA's intervention, Tripura's Jack fruit was exported to London, and Nagaland's King Chilli to London through a local exporter for the first time. Also, Assam's local fruit called Leteku (Burmese Grape) was exported to Dubai and Assam's Betel leaves have been regularly exported to London.
- Tapping the export potential of pork and pork products, APEDA assisted the Assam Govt in setting up a modern pork processing facility at Nazira which has a slaughtering capacity of 400 animals per day. The unit is ready and set to be commissioned soon.
- APEDA organised a training programme on the promotion of organic pork export from Sikkim, which is an organic state of India, in association with the State Animal Husbandry Department. APEDA has also developed guidelines for the export of fresh and processed pork with the help of NRC on pigs located at Rani, which is near Guwahati. In the NER, Sikkim is the first state to have an organic certification agency, which was established in 2016 with the support of APEDA.

3.10 Need for early amendment of DTAA regulations to stop the double taxation of Indian IT firms: Ms. Anupriya Patel tells the visiting Deputy Premier of Western Australia

- ❖ Both sides acknowledge the need for an early ratification of Ind-Aus ECTA
- ❖ Australia to look into visa related issues of Indian students and tourists
- On the concerns related to delay in issuance of visa for Indian students, the Australian side agreed to look into the ways to facilitate early processing and issuance of visa for Indian students pursuing higher studies in Australia and similarly for the tourists.

- The two sides also exchanged views on significant opportunities to strengthen the cooperation between India with Western Australia on a range of issues pertaining to various sectors including education, critical minerals, agriculture, energy, tourism, mining technology etc. Ms. Patel said that the bilateral relations between India and Australia have undergone transformative evolution in recent years and there is enormous scope for cooperation in various fields and improving the existing level of bilateral trade and investment.
- Both the sides acknowledged the need to expedite the ratification processes for early Entry into Force of the Ind-Aus ECTA for mutual benefit of both the economies, in particular, the businesses. Discussions also explored on market access issues relating to certain commodities such as potato, okra, gherkins, pineapple, onion etc. in Australian market and also on possible technical collaboration for increasing yield for agricultural products in India.
- The two leaders emphasized on outcome oriented actions leading to gains to citizens of both the countries, in particular, each other's businesses. They deliberated on various important avenues of cooperation and target oriented actions on specific sectors.
- Both the countries laid emphasis on complimentary schemes and expertise available with them to develop new avenues by leveraging Western Australian expertise in areas like agri-tech, water management, energy efficiency, renewables as well as Indian expertise in commodity analytics, information technology, mobile applications etc. Further, both the sides agreed to work towards having extensive engagement in activities relating to legal mineral mining, extending technical cooperation and expertise sharing and work towards a smooth resilient supply chain.
- Indian and Australian side noted that there are significant opportunities which exists to strengthen cooperation in sectors like critical mining, education, agriculture, mining and mining equipment, technology sectors, energy, tourism etc. and there is need to work together for result oriented outcome.

What is the India-Australia ECTA?

- It covers almost all the tariff lines dealt in by India and Australia respectively.
- India will benefit from preferential market access provided by Australia on 100% of its tariff lines.
- India will be offering preferential access to Australia on over 70% of its tariff lines.
- Under the agreement, Indian graduates from STEM (Science, Technology, Engineering and Mathematics) will be granted extended post-study work visas.
- It will provide zero-duty access to 96% of India's exports to Australia and will give about 85% of Australia's exports zero-duty access to the Indian market
- It will boost bilateral trade in goods and services to USD 45-50 billion over five years, up from around USD 27 billion, and generate over one million jobs in India, according to a government estimate.

What is Its Significance?**Enhanced Exports:**

- Currently, Indian exports face a tariff disadvantage of 4-5% in many labour-intensive sectors vis-à-vis competitors in the Australian market such as China, Thailand, Vietnam, South Korea, Japan, Indonesia and Malaysia.
- Removing these barriers under the ECTA can enhance India's merchandise exports significantly.

Cheaper Raw Materials:

- Australian exports to India are more concentrated in raw materials and intermediate products. Due to zero-duty access to 85% of Australian products, many industries in India will get cheaper raw materials and thus become more competitive, particularly in sectors like steel, aluminium, power, engineering and so on.

Change in Perceptions for India:

- The recent trade agreement will also assist in changing perceptions in the developed world which has always typecast India as 'protectionist' and address scepticism around India's openness to do business with the world.

Stronger Indo-Pacific:

- Strong Australia India economic ties will also pave the way for a stronger Indo-Pacific economic architecture, that's not just based on flows of physical goods, money and people, but on the basis of building capacity led connections, complementarities, sustainable commitments and mutual dependence across countries and sub-regions.

1.1 Centre amends the Legal Metrology (Packaged Commodities) Rules 2011 for ease of doing business and reducing the compliance burden for the electronic industries

- ❖ The amendment to allow the industry to declare the information in the digital form through the QR Code
- The Department of Consumer Affairs vide the Legal Metrology (Packaged Commodities), (Second Amendment) Rules 2022 has allowed the electronic products to declare certain mandatory declarations through the QR Code for a period of one year, if not declared in the package itself.
- This amendment will allow the industry to declare the elaborated information in the digital form through the QR Code. It will allow important declarations to be declared effectively on the label in the package while the other descriptive information can be conveyed to the Consumer through the QR Code.
- The Department to enable greater use of technology in this digital era to declare the mandatory declaration through the QR Code which can be scanned to view the declarations like address of the manufacturer or packer or importer, the common or generic name of the commodity, the size and dimension of the commodity & customer care details except the telephone number & e-mail address.

- Earlier, all the prepackaged commodities including the electronic products are required to declare all the mandatory declarations as per the Legal Metrology (Packaged Commodities), Rules 2011 on the package.

1.2 Labour Codes

- ❖ The Government has enacted the four Labour Codes, namely, the Code on Wages, 2019; the Industrial Relations Code, 2020 (IR Code); the Code on Social Security, 2020 (SS Code) and the Occupational Safety, Health and Working Conditions Code, 2020 (OSH Code).
- “Labour” as a subject is in the Concurrent List of the Constitution of India and under the Codes, the power to make rules has been entrusted to Central Government as well as State Governments. As a step towards implementation of the four Labour Codes, the Central Government has pre-published the draft Rules, inviting comments of all stakeholders. The details of the State/Union Territories (UTs) which have pre-published the draft Rules, inviting comments of all stakeholders,
- The Labour Codes strengthen the protection available to workers, including unorganized workers, in terms of statutory minimum wage, social security, working hours, healthcare, etc. The SS Code, 2020, provides for social security benefits for all workers including in unorganized sectors as well as gig and platform workers. Some of the new provisions envisaged in the Codes are as under:
 1. Setting up of Social Security Fund for formulating schemes for welfare of the unorganised workers, gig workers and platform workers.
 2. Extension of coverage under Employees’ State Insurance Corporation (ESIC) to pan-India, i.e., in all districts in the country.
 3. ESIC coverage on voluntary basis for establishments having less than 10 employees has been introduced.
 4. Benefits under ESIC can also be made applicable through notification to an establishment which carries on hazardous or life threatening occupation in which even a single employee is employed.
 5. Extension of benefits to unorganised workers, gig workers and platform workers and the members of their families through ESIC or Employees’ Provident Fund Organization (EPFO).
 6. For the persons engaged in Fixed Term Employment (FTE), the proportionate benefit of service has been extended without requirement of minimum service of 5 years for gratuity. The person having a contract for one year under FTE will also be eligible for gratuity.
- In line with the Payment of Gratuity Act, 1972, the SS Code, 2020 also provides for payment of gratuity to workers on the rate of wages last drawn. Further, as provided under the Payment of Gratuity Act, 1972, the SS Code, 2020 also provides that the amount of gratuity payable to an employee shall not exceed such amount as may be notified by the Central Government. However, the said Code has not come into effect so far.

- In order to maintain continuity, the SS Code, 2020 envisages administration of social security schemes under the Code by the respective social security organisations.
- Further, the OSH Code, 2020 consolidates and amends the laws regulating the occupational safety, health and working conditions of the persons employed in an establishment. It inter alia provides for free annual health check-up of employees and provision for formal appointment letter. Women have been empowered for employment in all establishments covering all types of works. Women are now entitled to work in the night, subject to their consent, with provisions of safety.

1.3 India attracts USD 343.64 million FDI equity inflow in R&D sector during 2021, which is 516% higher as compared to 2020

- ❖ Karnataka is the top FDI Equity recipient state in R&D followed by Telangana and Haryana
- ❖ Singapore is the top investing country in R&D with 40% share of total FDI Equity in R&D followed by Germany and U.S.A
- ❖ Robust and growing R&D sector to benefit the economy by driving innovation, increasing productivity, thereby leading to higher economic growth.
- India attracted USD 343.64 million FDI equity inflow in R&D sector during C.Y. 2021 (Calendar Year) which is 516% higher as compared to previous C.Y. 2020 (USD 55.77 million). FDI is permitted under 100% automatic route in R&D sector subject to applicable laws/regulations, security and other conditionalities.
- Karnataka is the top FDI Equity recipient state in R&D during C.Y. 2021 followed by Telangana and Haryana. The following states showed growth of more than 250% during C.Y. 2021 compared to previous C.Y. 2020: Telangana, Karnataka, Haryana, Andhra Pradesh & Tamilnadu.
- Singapore is the top investing country in R&D during C.Y. 2021 with 40% share of total FDI Equity in R&D followed by Germany (35%) and U.S.A (11%). Further, FDI Equity inflow from several countries like Germany, Mauritius, France, Singapore, Oman and U.S.A. showed an increase of more than 200% as compared to previous C.Y. 2020.
- Daimler Truck Innovation Center was the top FDI Equity inflow recipient company in R&D during C.Y. 2021 with 35% share of total FDI Equity in R&D followed by Aragen Life Sciences Private Limited (34%) and Stelis Biopharma Private Limited (21%).
- These trends indicate a robust and growing R&D sector which would benefit the economy by driving innovation, increasing productivity, thereby leading to higher economic growth.
- Research and Development (R&D) plays an important role in the development of a knowledge-based economy that can pave the way for higher economic growth. Foreign Direct Investment (FDI) infuses long term sustainable capital in the economy and contributes towards technology transfer, development of strategic sectors, greater innovation, competition and employment creation amongst other benefits. It has been a continuous endeavor of the Government to attract and promote R&D intensive FDI in order

to supplement domestic capital, technology and skills for accelerated economic growth and development.

1.4 Jan Samarth Portal

- ❖ The portal presently hosts loans under 13 credit linked Government Schemes catering to youth, students, entrepreneurs and farmers viz. Education Loans, Agriculture Loans, Business Activity Loans, and Livelihood Loans
 1. It connects all stakeholders like beneficiaries, financial institutions, Central/State Government Agencies, & Nodal Agencies on a common platform.
 2. Applicant can initially access 13 schemes through a single platform.
 3. Intuitive guidance to applicants for checking subsidy eligibility.
 4. Auto recommendation of the best suitable scheme for beneficiary.
 5. Digital approval of loan application based on digital verifications.
 6. Beneficiary can track real time status of their loan application.
- The “Jan Samarth” Portal by applicants will ease the loan application and disbursement process as the applicant can upload his application and the rule engine for approval of the applications is inbuilt. This will save time and effort as applicant can apply for a loan on the portal which is available on 24/7 basis.

4. ENVIRONMENT

4.1 Arctic Amplification

- ❖ A recent study points out that the Arctic is heating four times faster than the rest of the planet. The warming is more concentrated in the Eurasian part of the Arctic, where the Barents Sea north of Russia and Norway is warming at an alarming rate seven times faster than the global average. This is affecting the monsoons and climate conditions around the world.

What is Polar and Arctic amplification?

- Global warming has hastened due to anthropogenic forces or human activities since pre-industrial times and has increased the planet's average temperature by 1.1 degrees Celsius.

Polar amplification:

- Any change in the surface air temperature and the net radiation balance tends to produce larger changes at the north and south poles. This phenomenon is known as polar amplification

Arctic amplification:

- The above changes are more pronounced in the northern latitudes than in the southern latitudes. This is known as Arctic amplification.



What are the causes of Polar and Arctic amplification?

Primary causes:

- Ice-albedo feedback, lapse rate feedback, water vapour feedback and ocean heat transport. Among these, the ice-albedo feedback and the lapse rate feedback are responsible for 40% and 15% of polar amplification respectively.

Ice-albedo feedback:

- Sea ice and snow have high albedo, implying that they are capable of reflecting most of the solar radiation compared to water and air. Global warming is resulting in diminishing sea ice. As the sea ice melts, the Arctic Ocean will be more capable of absorbing solar radiation.

Lapse rate feedback:

- The lapse rate or the rate at which the temperature drops with elevation decreases with warming.

What are the consequences of Arctic amplification?

- The causes and consequences of Arctic amplification are cyclical, which means what might be a cause can be a consequence too.

Melting of Greenland ice sheet:

- Greenland's old and thicker ice sheets are getting replaced by young and thinner ice sheets.
- In 2019, the melting of this ice sheet was the single biggest cause for the rise in the sea level, about 1.5 metres. If the Greenland ice sheet melts completely, the sea level would rise by seven metres.

Note:

- The Greenlandic ice sheet holds the second-largest amount of ice, after Antarctica, and therefore it is crucial for maintaining the sea level.

Impact on biodiversity:

- The warming of the Arctic Ocean results in the acidification of water by changing the salinity levels. This impacts biodiversity, including the marine species and the dependent species.
- Further, it also increases the amount of rainfall. This affects the availability and accessibility of lichens to the reindeer. This is causing widespread starvation and death among the Arctic fauna.

Impact on permafrost:

- The permafrost in the Arctic is thawing and in turn releasing carbon and methane which are among the major greenhouse gases responsible for global warming.
- Experts fear that the thaw and the melt will also release the long-dormant bacteria and viruses that were trapped in the permafrost and can potentially give rise to diseases.

What are the impacts of Arctic amplification on India?**Arctic ice and Indian monsoon:**

- A study found that the reduced sea ice in the Barents-Kara Sea region can lead to extreme rainfall events in the latter half of the monsoons in India. The changes in the atmospheric circulation due to diminishing sea ice combined with the warm temperatures in the Arabian Sea contribute to enhanced moisture and drive extreme rainfall events.

Arctic ice and sea level rise:

- According to the World Meteorological Organization's report, the sea level along the Indian coast is rising faster than the global average rate. One of the primary reasons for this rise is the melting of sea ice in the polar regions, especially the Arctic.

4.2 UN conference to protect oceans

The UN nations have recently met to push for the treaty to govern the use of high seas.

About the News:

- The Arctic has been heating up at a record rate while plastic pollution is "choking the seas," fish stocks are being depleted, acidity rates are rising and ocean waters are warming and rising.
- In this regard, the United Nations has kicked off a conference recently aimed at creating a new, legally-binding global treaty to govern the use of the high seas.
- The treaty will help conserve biodiversity in areas beyond national jurisdiction (BBNJ) that lie outside countries' 322-kilometre exclusive economic zones.
- This is the fifth round of negotiations on the international instrument under the UN Convention on the Law of the Sea (UNCLOS) since 2018.
- Previously, an Intergovernmental Conference (IGC) session has been held by the UN to elaborate on the text of the legal instrument for protecting BBNJ under UNCLOS.
- Many nations have however raised concerns over how such laws would impact their ability to fish and mine – especially given the rising cost of energy and the rush for minerals used in the production of batteries and other technology in high demand.

Major highlights of the bill:

- **Background:** UNCLOS was adopted in 1982 and laid the foundation of ocean governance, with the first single set of rules for oceans and seas.
- **Major instruments:** Once completed, there will be three instruments under the Convention:
 - 1994: Agreement on the implementation of rules under UNCLOS
 - 1995: UN Fish Stocks
 - 2022: The treaty on biodiversity in areas beyond national jurisdiction (BBNJ)

Focus area of the discussion:

Genetic resources:

- The discussions will focus on marine genetic resources, including issues on sharing benefits.

Management of marine areas:

- Steps to improve area-based management tools of marine protected areas, environmental impact assessments, capacity-building, transfer of marine technology and cost-cutting issues.

Focus areas:

- The discussions target the collection of marine genetic resources (MGRs) of areas beyond national jurisdiction, with varying views on ways to restructure this part of the agreement.

Protecting knowledge:

- The provision of access to traditional knowledge of indigenous peoples and local communities associated with marine genetic resources on the high seas.

Importance of the Treaty:

- Defining high seas: It refers to international waters sea space that doesn't fall within any nation's sovereign or extended maritime zone.

**Area:**

- About two-thirds of the world's water is considered high seas and, as of today, only about 1% of that area is covered by international agreements on fishing and other resource extraction.

Rule-based monitoring:

- The high seas treaty, if agreed, would create a new global body to enforce rules laid out to protect about 30% of the world's oceans by 2030.

Marine Protected Areas:

- The draft treaty would establish patches of ocean known as Marine Protected Areas, where there would have to be environmental impact studies before any deep-sea mining or exploration could take place.

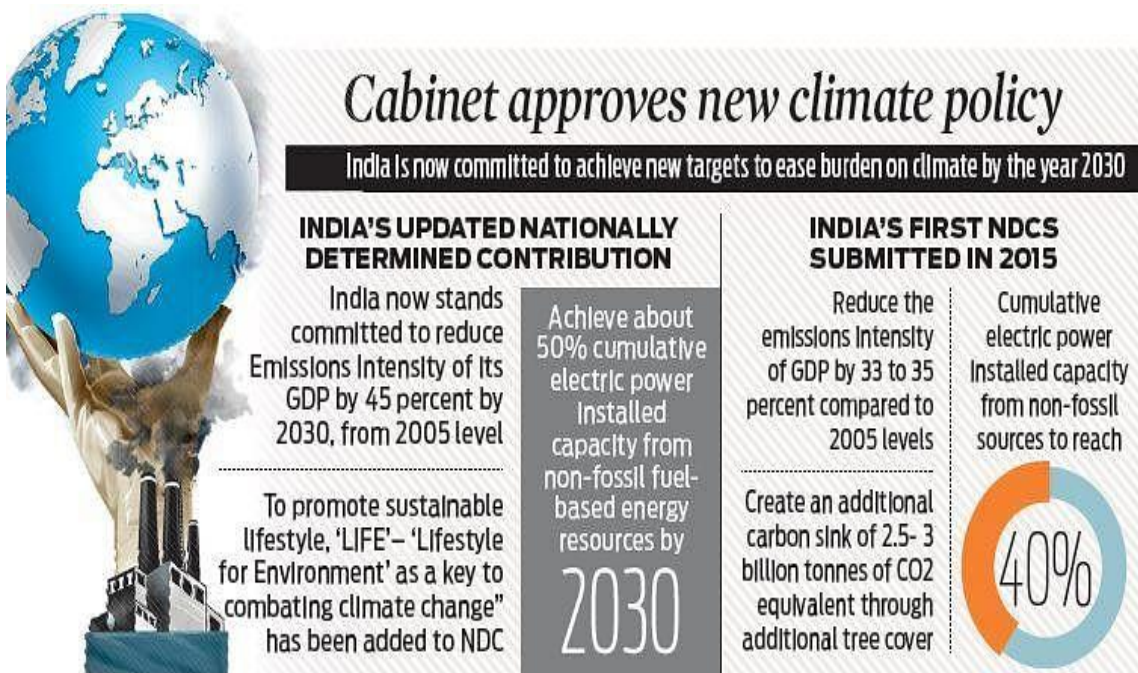
Better protection:

- It would extend international law beyond countries' territorial waters and exclusive economic zones (EEZs), which extend 200 miles from any nation's coastline, to cover a major portion of the currently unprotected waters from threats such as overfishing and unchecked seafloor mining.

4.3 India's Updated NDC


- **Context:** The Union Cabinet has recently approved India's updated Nationally Determined Contribution under the Paris Agreement.
- The updated NDC seeks to enhance India's contributions towards achievement of strengthening of global response to the threat of climate change, as agreed under Paris Agreement.

- It will incorporate India's 'Panchamrit' strategy announced at the Glasgow Conference into enhanced climate targets.
- It promotes healthy and sustainable way of living through mass movement called LIFE (Lifestyle for Environment).
- These commitments are a step towards achieving India's goal of reaching net-zero by 2070.
- India's updated NDC will be implemented over the period 2021-2030 through programs and schemes of relevant Ministries /departments and with due support from States and UTs.
- According to the updated NDC, India now stands committed to reducing emissions intensity of its GDP by 45% by 2030, from 2005 level (acc to NDC 2015, it is 33 to 35% from 2005 levels) and achieving about 50% cumulative electric power installed capacity (40%, NDC 2015) from non-fossil fuel-based energy resources by 2030.



Cabinet approves new climate policy

India is now committed to achieve new targets to ease burden on climate by the year 2030

INDIA'S UPDATED NATIONALLY DETERMINED CONTRIBUTION	INDIA'S FIRST NDCs SUBMITTED IN 2015
<p>India now stands committed to reduce Emissions Intensity of its GDP by 45 percent by 2030, from 2005 level</p> <p>To promote sustainable lifestyle, 'LIFE' – 'Lifestyle for Environment' as a key to combating climate change" has been added to NDC</p>	<p>Reduce the emissions Intensity of GDP by 33 to 35 percent compared to 2005 levels</p> <p>Cumulative electric power Installed capacity from non-fossil sources to reach</p>
<p>Achieve about 50% cumulative electric power Installed capacity from non-fossil fuel-based energy resources by</p> <h1 style="font-size: 2em;">2030</h1>	<p>Create an additional carbon sink of 2.5- 3 billion tonnes of CO2 equivalent through additional tree cover</p> <div style="text-align: center;">  <p style="font-size: 2em; font-weight: bold;">40%</p> </div>

PM MAKES FIVE PLEDGES

- 1 India will increase its non-fossil energy capacity to 500GW by 2030
- 2 India will meet 50% of its energy requirements from renewable energy by 2030
- 3 India will reduce the total projected carbon emissions by one billion tonnes from now to 2030
- 4 By 2030, India will reduce the carbon intensity of its economy by 45% (from a previous target of 35%)
- 5 By 2070, India will achieve the target of net zero

WHAT IS NET ZERO?

Net zero refers to a balance where emissions of greenhouse gases are offset by the absorption of an equivalent amount from the atmosphere. Experts see net zero targets as a critical measure to successfully tackle climate change and its devastating consequences

PLEDGES BY TOP THREE EMITTERS

-  **CHINA:** Beijing announced no new pledges on Monday. It previously pledged net zero by 2060.
-  **UNITED STATES:** The US touted domestic legislation to spend \$555bn to boost renewable power and electric vehicles. It has pledged net zero by 2050.
-  **INDIA:** The country's economy will become carbon neutral by the year 2070

4.4 New Ramsar Sites

- India has recently added 26 more wetlands to the list of Ramsar sites making the total number of sites as 75, covering an area of 13,26,677 ha in the country in the 75th year of Independence.
- The Ramsar Convention, which came into existence in 1971, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Brief on the New Ramsar Sites:

Karikili Bird Sanctuary (Tamil Nadu):

- The sanctuary is spread over a five-kilometre-wide belt and is home to cormorants, egrets, grey heron, open-billed stork, darter, spoonbill, white Ibis, night herons, grebes, and grey pelican among others.

Pallikaranai Marsh Reserve Forest (Tamil Nadu):

- The Pallikaranai Marsh is one of India's few natural coastal aquatic habitats that qualify as a wetland.
- Being one of the last remaining natural wetlands, the marsh drains an area of 250 square kilometres encompassing 65 wetlands.

Pichavaram Mangrove (Tamil Nadu):

- It is one of the last mangrove forests in the country.
- It has an island of a vast expanse of water covered with mangrove forests.

Sakhya Sagar (Madhya Pradesh):

- Created from the Manier river in 1918, Sakhya Sagar is located near Madhav National Park.

Pala Wetland in Mizoram (Mizoram):

- Its geographical location falls under the Indo-Burma biodiversity hotspot and is therefore rich in animal and plant species.
- It is home to a wide range of animals, birds, and reptiles.
- The lake is a major component of the Palak Wildlife Sanctuary and supports the sanctuary's major biodiversity.

About:

S.No	Ramsar Site	Place	Importance
1	Koonthankulam Bird Sanctuary	Tamil Nādu	It is a significant man-made wetland which covers an area of 72.04 ha. This is the largest reserve for breeding resident and migratory water birds in South India. It is an Important Bird and Biodiversity Area forming part of the Central

			Asian Flyway.
2	Satkosia Gorge	Odisha	<p>It spreads along the magnificent gorge over the mighty river Mahanadi in Odisha.</p> <p>Established in 1976 as a wildlife sanctuary, it supports a rich ecosystem, representing a diverse population of floral and faunal species.</p> <p>It is the meeting point of two biogeographic regions of India; the Deccan Peninsula and the Eastern Ghats, contributing immense biodiversity.</p> <p>It also helps in maintaining a specific desirable depth of water crucial for the endangered gharial population.</p>
3	Nanda Lake	Goa	<p>The majority of the area is intermittent freshwater marshes that lie adjacent to rivulets of the Zuari River.</p> <p>This lake is habitat for notable faunal species including Black-headed ibis and Common kingfisher.</p>
4	Gulf of Mannar Marine Biosphere Reserve	Tamil Nadu	<p>It is the first Marine Biosphere Reserve in South & South -East Asia.</p> <p>It is one of the most biologically diverse regions in India, comprising different species of corals, fishes, sea turtles and sea grasses besides mangroves.</p> <p>The Reserve is also home to several globally important and highly threatened species like the Dugong, whale shark, sea horses, Balanoglossus, green sea turtle, Hawksbill turtle, dolphins, sacred chanks etc.</p>
5	Ranganathittu Bird Sanctuary	Karnataka	<p>The site has been enlisted as one of the Important Bird Areas (IBA) in Karnataka and India by Bombay Natural History Society.</p> <p>It is an ecologically important riverine wetland of India, rich in biodiversity.</p> <p>The site supports several threatened taxa including mugger crocodiles (<i>Crocodylus palustris</i>), smooth-coated otter (<i>Lutrogale perspicillata</i>) and the river waters harbour the endangered hump-backed masheer (<i>Tor remadevii</i>).</p>

6	Vembannur Wetland Complex	Tamil Nadu	<p>It is a human-made inland tank.</p> <p>It forms the southernmost tip of peninsular India.</p> <p>It forms part of the Important Bird and Biodiversity Area (IBA) and hence part of BirdLife International Data Zone.</p> <p>The site hosts around 12% of the total non-breeding population of garganey.</p> <p>The tank is believed to have been constructed in the regime of Pandyan king Veeranarayana.</p>
7	Vellode Bird Sanctuary	Tamil Nadu	<p>It is provincially known as Periyakulam Yeri is one of the 141 Prioritized wetlands in Tamil Nadu.</p> <p>Spread over an area of 77.185 ha, this site forms part of the Central Asian Flyway.</p>
8	Sirpur Wetland	Madhya Pradesh	<p>It is an important site for its aesthetic value besides being an important ecological terrain.</p> <p>Presently, the wetland is being developed as a bird sanctuary and ecological learning center.</p>
9	Vedanthangal Bird Sanctuary	Tamil Nadu	<p>It is one of the oldest bird-protected areas in India.</p> <p>This site is also recognized internationally, as an Important Bird and Biodiversity Area (IBA).</p> <p>It belongs to the Coromandel Coast biotic province.</p>
10	Udhayamarthandapuram Bird Sanctuary	Tamil Nadu	<p>It is an important bird sanctuary famous for several species of waterbirds.</p> <p>The notable species observed at the site are oriental darter, glossy ibis etc.,</p> <p>It is one of the important breeding sites for the darter & Eurasian spoonbill.</p>

The details of the newly added sites are tabulated as below:

Ramsar Site	Location	Features
Tampara Lake	Ganjam District, Odisha	The depression on the ground gradually filled with rainwater from catchment flow and was called “Tamp” by the British and subsequently termed “Tampra” by the locals. Important habitat for vulnerable species such as Cyprinus carpio, common pochard (Aythya ferina), and river tern (Sterna aurantia).
Hirakud Reservoir	Odisha	It is an earthen dam in Odisha Reservoir is source of water for hydropower and for irrigating command area. The wetland also provides important hydrological services by moderating floods in the Mahanadi delta, the ecological and socio-economic hub of the east coast of India.
Ansupa Lake	Banki sub-division of Cuttack district, Odisha	It is the largest freshwater lake of Odisha. The wetland is an oxbow lake formed by River Mahanadi.
Yashwant Sagar	Madhya Pradesh	It is considered to be a stronghold of the vulnerable Sarus Crane in central India. One of the two Important Bird Areas (IBA) in the Indore region as well as one of the most important birding sites in Malwa region
Chitrangudi Bird Sanctuary	Ramanathapuram district in Tamil Nadu	It is an ideal habitat for winter migratory birds.
Suchindram Theroor Wetland Complex	Kanyakumari District, Tamil Nadu	It is declared an Important Bird Area and lies at the southern tip of the Central Asian flyway of migratory birds.
Vaduvur Bird Sanctuary	Thiruvarur District, Tamil Nadu	It is a large human-made irrigation tank and shelter for migratory birds as it provides a suitable environment for food, shelter, and breeding ground.

		Large concentrations of wintering waterfowl have been recorded in these tanks.
Kanjirankulam Bird Sanctuary	Ramanathapuram District, Tamil Nadu	<p>It is notable as a nesting site for several migratory heron species that roost in the prominent growth of babul trees there.</p> <p>The site qualifies as an IBA as the threatened Spot-billed Pelican <i>Pelecanus philippensis</i> breeds here.</p> <p>The wetland supports IUCN RedList vulnerable avian species like <i>Sterna aurantia</i> (River Tern).</p>
Thane Creek	Maharashtra	<p>There are several sources of fresh water to the creek, of which Ulhas River is the largest, followed by many drainage channels.</p> <p>It has been declared as Thane Creek Flamingo Sanctuary.</p> <p>Thane creek is fringed by mangroves on both banks & comprises around 20% of the total Indian mangrove species.</p> <p>The area is an important part of the wetland complex of the Central Asian Flyway of the birds and has been categorized as an Important Bird Area (IBA).</p>
Hygam Wetland Conservation Reserve	River Jhelum basin, Baramulla district	<p>It is recognized as an Important Bird Area (IBA).</p> <p>Consequent to the high rate of siltation, Hygam Wetland has lost its wetland characteristics to a large extent and in many places changed its profile into a landmass.</p>
Shallbugh Wetland Conservation Reserve	District Srinagar, UT of J&K	<p>The area has extensive reed beds of <i>Phragmites communis</i> and <i>Typha angustata</i>, and rich growth of <i>Nymphaea candida</i> and <i>N. stellata</i> on open water.</p> <p>The wetland serves as an important breeding ground for many species of water birds</p>

About Ramsar Sites

- A Ramsar Site is a wetland site designated to be of international importance, which are protected under strict guidelines of the Ramsar Convention on Wetlands.

- The Ramsar Convention is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.
- The Convention was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975.

Significance of Ramsar Sites

- Wetland management is a challenging task globally that has the participation of 172 countries. As contracting parties, they understand the value of a dedicated international treaty for a single ecosystem.
- The declining rate of wetlands is a cause of concern for protecting the ecosystem. And it is here, that Ramsar sites recognise wetlands that play a vital role in human survival.
- They support biological diversity of numerous species of plants and animals that depend on the wetlands for their survival and creates for them the most productive environment.
- Wetlands provide benefits for humanity, ranging from freshwater supply, food and building materials, and biodiversity, to flood control, groundwater recharge, and climate change mitigation.

4.5 UN guidelines to protect children displaced by climate change

- The United Nations-backed agencies have recently issued guidelines to provide the first-ever global policy framework to protect children displaced due to climate change.

About the News:

- The new guidelines launched aim to protect and empower children forced to flee their homes due to climate-related emergencies,
- The guidelines were launched by the International Organisation for Migration (IOM), the UN Children's Fund (UNICEF) and others.

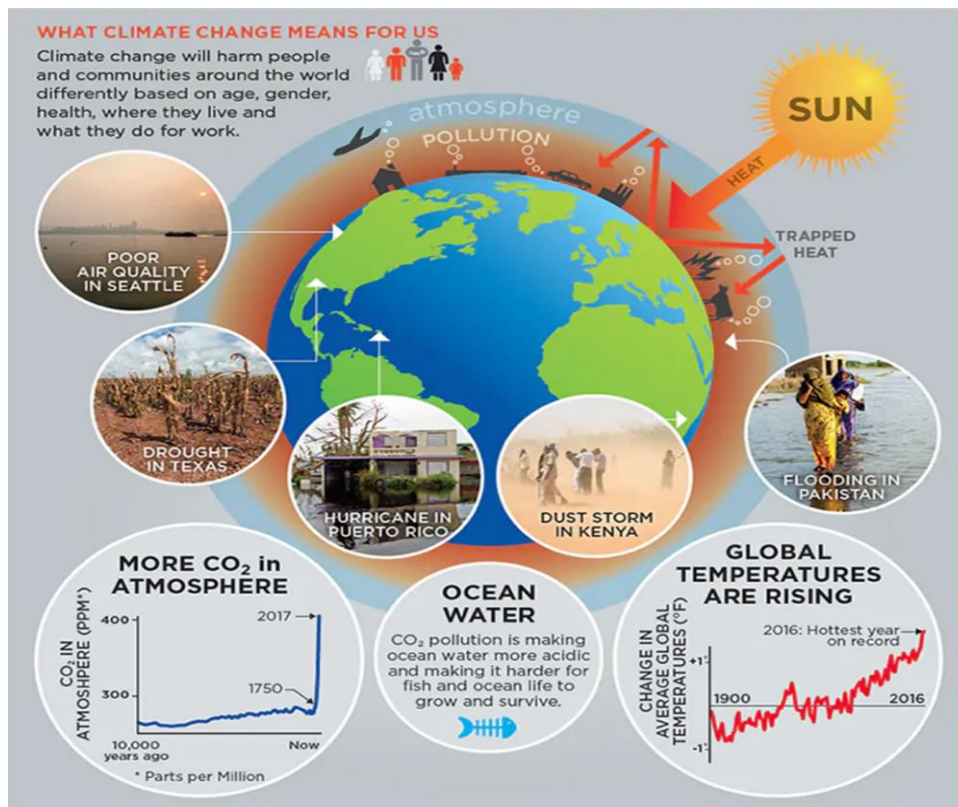
The Guidelines:

- 'The Guiding Principles for Children on the Move in the Context of Climate Change' contain a set of nine principles that address the unique vulnerabilities of children who have been uprooted due to climate change.
- The guidelines cover both internal as well as cross-border migrations.
- They provide national and local governments, international organisations, and civil society groups with a foundation to build policies that protect children's rights.



Climate Change and Children:

- One billion children live in 33 countries classified as being at extremely high risk to the impacts of climate change.
- Nearly 10 million children were displaced due to weather-related events in 2020
- Such children may be exposed to a variety of risks, such as abuse, trafficking, exploitation and other forms of maltreatment.
- 36% of all deaths among children (aged (0-14) are, in part, caused by environmental factors.
- 14% of the total migrant population were children in 2019.



4.6 Wild Life (Protection) Amendment Bill, 2021

- The Wild Life (Protection) Amendment Bill, 2021 has been recently passed by Lok Sabha to amend the Wild Life (Protection) Act, 1972.

Key features of Amendment Bill

CITES:

- The Bill seeks to implement certain provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), relating to species classification, and regulating the trade of all listed specimens through permits.

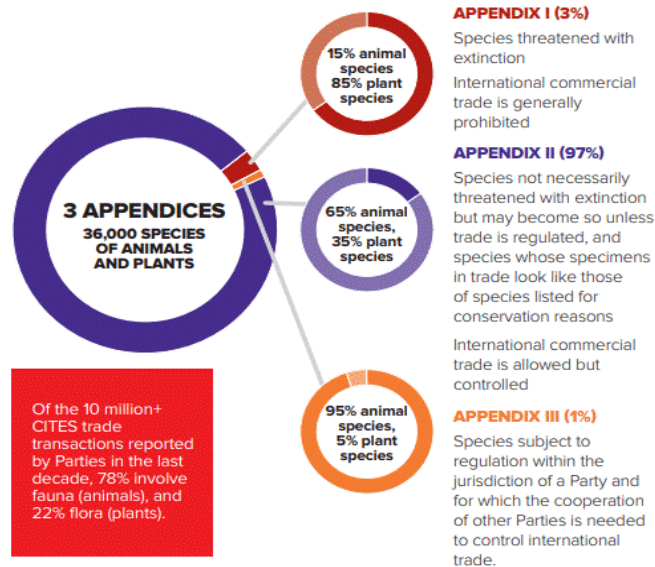
Rationalising Schedules:

- The Bill reduces the total number of schedules to four (from the present six) by: Reducing the number of schedules for specially protected animals to two (one for greater protection level) Removing the

schedule for vermin species, and Inserting a new schedule for specimens listed in the Appendices under CITES (scheduled specimens).

DIFFERENT DEGREES OF PROTECTION

CITES accords varying degrees of protection to more than 36,000 species of animals and plants by applying different provisions to species included in three Appendices:



- **Obligations under CITES:** The Bill provides for the central government to designate a:
 - Management Authority, which grants export or import permits for the trade of specimens, and
 - Scientific Authority, which gives advice on aspects related to impact on the survival of the specimens being traded.

Invasive alien species: The Bill empowers the central government to regulate or prohibit the import, trade, possession or proliferation of invasive alien species.

Control of sanctuaries: The present act entrusts the Chief Wild Life Warden to control, manage and maintain all sanctuaries in a state. The Bill specifies that the actions of the Chief Warden must be in accordance with the management plans for the sanctuary.

Conservation reserves: Currently, state governments may declare areas adjacent to national parks and sanctuaries as conservation reserves. Now, the Bill empowers the central government to also notify a conservation reserve.

Surrender of captive animals: The Bill provides for any person to voluntarily surrender any captive animals or animal products to the Chief Wild Life Warden. No compensation will be paid to the person for surrendering such items. The surrendered items become the property of the state government.

Penalties: The Act prescribes imprisonment terms and fines for violating the provisions of the Act.

State Board for Wild Life: The 2021 Bill empowers the State Board for Wild Life to constitute a Standing Committee, for exercising certain delegated powers and duties.

Concerns associated with Amendment

- The Standing Committee observed that amending the Biological Diversity Act, 2002 would be the most appropriate way of implementing CITES, as it observed that the approach under the Bill will make the principal Act complicated and might introduce contradictions.
- The Committee noted that the Standing Committee will be packed with official members, and may end up being a rubber stamp for faster clearances of projects.
- The Bill exempts the transfer of certain live elephants from the permission requirement. To discourage private ownership and trade in elephants, the Committee recommended that this exemption should be removed.

4.7 Clean, Healthy Environment as a Universal Human Right

- With 161 votes in favour, and eight abstentions, the UN General Assembly has recently adopted a historic resolution declaring access to a clean, healthy and sustainable environment, a universal human right.

About the Resolution:**As per the resolution,**

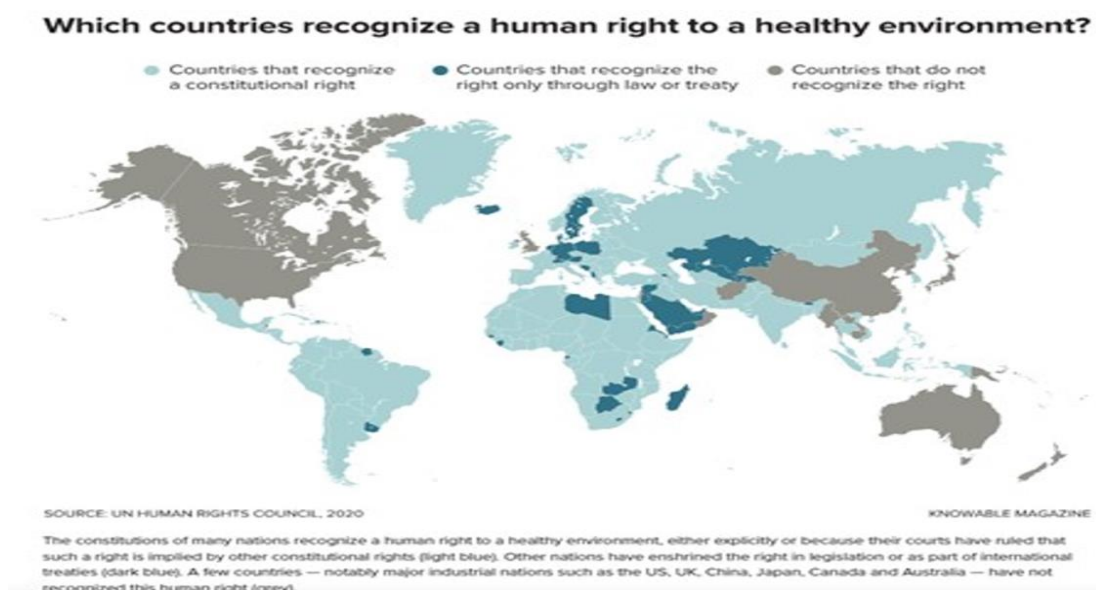
- Every person on the planet has the right to live in a clean, healthy environment.
- Climate Change and environmental degradation are the most critical threats awaiting humanity in the future.
- It demonstrates that the member states can unite in the collective fight against the triple planetary crisis of climate change, biodiversity loss and pollution.
- The declaration adopted by over 161 UN member nations, including India, is not legally binding. However, it will encourage countries to incorporate the right to a healthy environment in national constitutions and regional treaties.
- India has voted for the resolution and Russia, and Iran are countries that have abstained from voting.

Significance of the Resolution:

- It will help to reduce environmental injustices and protection gaps.
- The resolution can empower people, especially those in vulnerable situations, including environmental human rights defenders, children, youth, women and indigenous people.
- Help States to accelerate the implementation of their environmental and human rights obligations and commitments.
- This is a historic resolution that will change the very nature of international rights law as the right-access to a Clean, Healthy Environment was not included in the Universal Declaration of Human Rights, 1948.

Earlier Resolutions:

- Earlier in 2021, the UN Human Rights Council in Geneva had passed a resolution recognising access to a healthy and sustainable environment as a universal right.
- 50 years ago, the United Nations Conference on Environment in Stockholm concluded in 1972 with a resolution placing environmental issues at the global forefront.
- Constitutional provisions relating to Environment and Human Rights
- **Article 21:** Guarantees fundamental right to life. Right to an environment, free of danger of disease and infection is inherent in it.
- **Article 48 A:** State shall endeavour to protect and improve the environment and to safeguard forests and wildlife of the country.
- **Article 51-A (g):** Duty of every Indian citizen to protect and improve the natural environment.

**4.8 Deep-sea Mining**

- **Experts** have expressed the need to assess marine biodiversity before permitting deep-sea mining.

About the News:

- The 27th session of the Assembly of the International Seabed Authority (ISA) has recently seen nations deliberating over the fate of deep-sea mining.
- Deep-sea mining involves extracting of critical ores needed to build batteries which are needed for electric vehicles and renewable energy capacity, smartphones and laptops.
- Several nations, including India, have their eyes set on deep-sea mining which have raised an alarm over the potentially harmful impacts on ocean biodiversity.
- ISA has awarded India with a 15-year contract to explore an area of 75,000 square kilometres for mining polymetallic nodules from the Central Indian Ocean Basin at depths of 5,000-6,000 metres.
- While India is perfecting its technology to mine the deep sea it also backs International Seabed Authority mandates on deep-sea mining.

What is deep-sea mining?

- **About:** Deep-sea mining is the process of exploring for and retrieving minerals from the deep seabed.
- **Types:** Three types of deposits hold most of these minerals:
 - Polymetallic nodules, also called manganese nodules, which are lying on the seabed
 - Sulphide deposits around hydrothermal vents
 - Ferromanganese crusts, which are rich in cobalt and manganese and line the sides of ridges and seamounts.

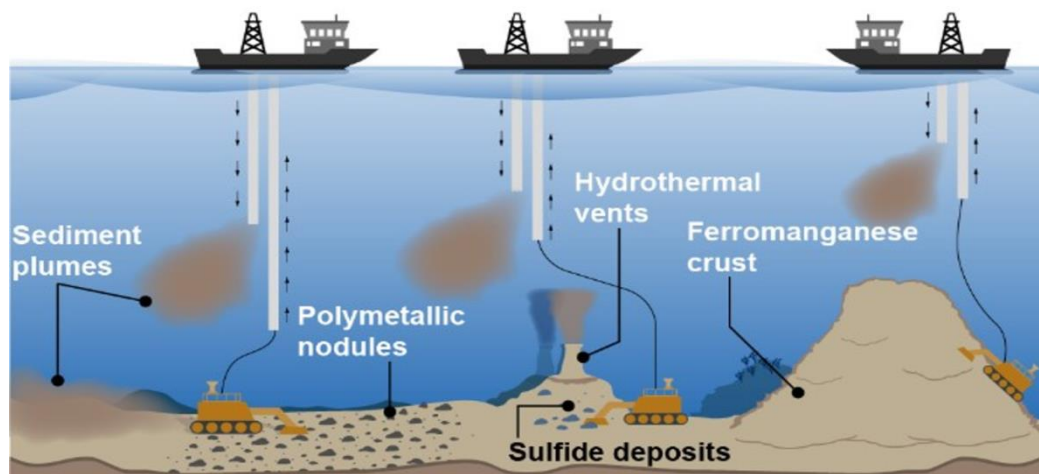
Importance:

These sources hold a wide variety of critical minerals, including cobalt, manganese, titanium, and rare earth elements, as well as gold, copper, and nickel.

What are the pros and cons of deep-sea mining?

Opportunities:

- **Technology applications:** Minerals found in the seabed are important components of smartphones, steel, and green technologies including solar cells, electric vehicles, and wind turbines.
- **Access to critical minerals:** India needs to mitigate the risk of being heavily dependent on critical mineral sources which are presently under foreign government control including China, Russia, and the Democratic Republic of the Congo.



- **Less reliance on land-based mining:** Land-based mining can adversely affect the terrestrial environment. Deep-sea mining may decrease those effects by reducing the demand for land-based mining.

Challenges:

- **Disturbance of the seafloor:** The digging and gauging of the ocean floor by machines can alter or destroy deep-sea habitats.
- **Sediment plumes:** Deep-sea mining will stir up fine sediments on the seafloor, creating plumes of suspended particles.

- **Pollution:** Species such as whales, tuna and sharks could be affected by noise, vibrations and light pollution caused by mining equipment and surface vessels, as well as potential leaks and spills of fuel and toxic products.
- **Limitation of ISA:** It lacks a scientific committee, for instance, to guide decisions and monitoring and compliance body.

International Sea-bed Authority (ISA)

It is an autonomous international organization established under the 1982 United Nations Convention on the Law of the Sea (UNCLOS).

It is the organization through which States Parties to UNCLOS organize and control all mineral-resources-related activities in the Area for the benefit of mankind as a whole.

It has its headquarters in Kingston, Jamaica.

All States Parties to UNCLOS are ipso facto members of ISA which has 168 members, including 167 member States and the European Union.

Deep ocean covers around 54 per cent of the total area of the world's oceans areas and resources which are the common heritage of mankind.

4.9 CAG Report on Conserving Coastal Ecosystems

- The Comptroller and Auditor General (CAG) of India has recently tabled a report in the Parliament on whether steps taken by the Union Environment Ministry to conserve India's coastal ecosystems have been successful.

About the News:

Why did CAG undertake this Audit?

The CAG has a constitutional mandate to investigate and report on publicly funded programmes.

The CAG conducted pre-audit studies and found that there were large-scale CRZ violations in the coastal stretches.

Coastal land up to 500 metres from the High Tide Line (HTL) and a stage of 100m along banks of creeks, lagoons, estuaries, backwater and rivers subject to tidal fluctuations is called Coastal Regulation Zone (CRZ).

Incidences of illegal construction activities (reducing coastal space) and effluent discharges from local bodies, industries and aquaculture farms had been reported by the media and this prompted it to undertake a detailed investigation.

The CAG frequently undertakes ‘performance audits’ of government programmes and ministries.

The latest report contains the observations from an audit of Conservation of Coastal Ecosystems from 2015-20.

Centre’s obligations on conserving the Coastline

- The government has issued notifications under the Environment Protection Act, 1986, to regulate activities along India’s coasts particularly regarding construction.
- The Coastal Regulation Zone Notification (CRZ) 2019, implemented by the Ministry, classifies the coastal area into different zones to manage infrastructure activities and regulate them.

The three institutions responsible for the implementation of the CRZ are:

- The National Coastal Zone Management Authority (NCZMA) at the Centre
- The State/Union Territory Coastal Zone Management Authorities (SCZMAs/UTCZMAs) in every coastal State and Union Territory and
- The District Level Committees (DLCs) in every district that has a coastal stretch and where the CRZ notification is applicable.

Role of the Institutions

- These bodies examine if CRZ clearances granted by the government are as per procedure, if project developers once given the go-ahead are complying with conditions, and if the project development objectives under the Integrated Coastal Zone Management Programme (ICZMP) are successful.
- They also evaluate the measures taken up by the government towards achieving the targets under Sustainable Development Goals, a set of United Nations-prescribed targets for countries towards eradicating poverty and becoming sustainable societies.

Findings of the audit:

- The Environment Ministry hadn’t notified NCZMA as a permanent body and it was being reconstituted every few years.
- In the absence of defined membership, it was functioning as an ad-hoc body.
- There were instances of the Expert Appraisal Committees-a committee of scientific experts and senior bureaucrats who evaluate the feasibility of an infrastructure project and its environmental consequences not being present during project deliberations.
- There were also instances of the members of the EAC being fewer than half of the total strength during the deliberations.
- The SCZMA had not been reconstituted in Karnataka and there was delayed reconstitution in the States of Goa, Odisha and West Bengal.

- The DLCs of Tamil Nadu lacked participation from local traditional communities.
- There were instances of projects being approved despite inadequacies in the Environment Impact Assessment (EIA) reports.
- These included non-accredited consultants preparing the EIA, using outdated data, not evaluating environmental impacts of the project, not appraising the disasters which the project area was prone to and so forth.

Indian Initiatives for Coastal Management

Integrated Coastal Zone Management Plan:

It is a process for the management of the coast using an integrated approach, regarding all aspects of the coastal zone, including geographical and political boundaries, in an attempt to achieve sustainability.

National Centre for Sustainable Coastal Management:

It aims to promote integrated and sustainable management of the coastal and marine areas in India for the benefit and wellbeing of the traditional coastal and island communities.

Coastal Regulation Zone:

The Coastal Regulation Zone (CRZ) notification was issued in 1991 under the Environmental Protection Act, 1986, by the Ministry of Environment, Forest and Climate Change to regulate activities in coastal areas of India.

4.10 World's most polluted cities

State of Global Air has recently published a report titled 'Air Quality and Health in Cities'.

PM2.5 is made up of airborne, inhalable particles less than 2.5 micrometres (μm) wide and released into the atmosphere by burning fossil fuels, and from factories, industries, car engines, fires, construction sites dust, etc.

NO₂ is formed when there is combustion of fossil fuels including coal, gas and oil especially fuel used in cars.

About the News:

- The report has analysed pollution and its effect on global health in more than 7,000 cities around the world between 2010 and 2019 and ranked the cities on the basis of two major pollutants, namely: Fine Particulate Matter (PM 2.5) and Nitrogen Dioxide (NO₂).
- Delhi, Kolkata, and Mumbai have featured among the world's top 20 most polluted cities.

Key Findings of the Report

- PM 2.5 Levels
- Delhi and Kolkata are ranked first and second in the list of the top 10 most polluted cities.
- PM 2.5 deaths
- In 2019, 1.7 million deaths linked to PM2.5 exposure occurred in 7,239 cities with cities in Asia, Africa, and Eastern and Central Europe seeing the greatest health impacts.
- Beijing had the largest disease burden associated with a PM 2.5-related illness, with 124 attributable fatalities per 100,000 persons.
- Delhi came in 6th, with 106 deaths per 100,000 and Kolkata at 8th.
- NO2 Levels
- No Indian city appeared in the list of top 10 or even top 20 polluted cities
- Average NO2 levels for Delhi, Kolkata and Mumbai, according to the report, ranged from 20-30 $\mu\text{g}/\text{m}^3$.
- Shanghai has topped the list with an average annual exposure of 41 $\mu\text{g}/\text{m}^3$
- While exposures to PM 2.5 pollution tend to be higher in cities located in low- and middle-income countries, exposure to NO2 is high across cities in high-income as well as low- and middle-income countries.

Other findings

- Only 117 nations currently have ground-level monitoring systems to track PM 2.5, and only 74 nations are monitoring NO2
- In 2019, exposure to pollutants in 86% of the more than 7,000 cities exceeded WHO's standard, therefore, impacting around 2.6 billion people.

State of Global Air

It is a collaboration of the US-based Health Effects Institute (HEI) and the Institute for Health Metrics and Evaluation's Global Burden of Diseases Project.

It is a research and outreach initiative for providing reliable, meaningful information about air quality around the world.

The report is meant to give citizens, journalists, policymakers, and scientists access to reliable, meaningful information about air pollution exposure and its health effects.

Recommendations

- Strategic investments in ground-level air quality monitoring systems and the use of satellites and other upcoming technologies in specific regions can prove to be crucial first steps towards cleaner air.

- There is a need to collect city-level health data on a consistent and systematic basis and the data should be made accessible to researchers, which will help them conduct more accurate and local analyses that inform communities and policymakers.

4.11 Goa becomes the first Har Ghar Jal Certified state

- Goa and Dadra & Nagar Haveli and Daman & Diu (D&NH and D&D) have become the first ‘Har Ghar Jal’ certified State and UT in the country respectively.
- People from all the villages have declared their village as ‘Har Ghar Jal’ through a resolution passed by Gram Sabha, certifying that all households in the villages have access to safe drinking water through taps, ensuring that ‘No One is Left Out’.

Key Points

- Village Water and Sanitation Committee (VWSC) or paani Samiti has been constituted in all the 378 villages of Goa and 96 villages of D&NH and D&D.
- It is responsible for the operation, maintenance, and repair of water supply infrastructure developed under the ‘Har Ghar Jal’ programme.
- All 2.63 lakh rural households of Goa & 85,156 of Dadra & Nagar Haveli and Daman & Diu have access to potable water through tap connection.
- All schools, Anganwadi centres, public institutions including Gram Panchayat buildings, healthcare centres, community centres, ashram shalas, and other government offices have now access to potable water through tap connection.

Process of Certification

- At first, the field engineer submits a completion certificate regarding the water supply scheme to the Panchayat during the Gram Sabha meeting.
- The villages confirm through a resolution of the Gram Sabha, that every household is getting a regular supply of water of prescribed quality and not a single household is left out.
- They also confirm that all schools, Anganwadi centres and other public institutions are also getting tap water.

Jal Jeevan Mission

Launched on August 15, 2019.

Implemented by the Ministry of Jal Shakti.

To provide safe and adequate drinking water through household tap connections by 2024 to all rural households and public institutions; Gram Panchayat building, Primary School, Anganwadi centre, Health and wellness centres, etc.

Features

The Mission ensures community participation and also includes an Awareness, Education and Communication Campaign.

Development of water supply infrastructure to provide tap water connection to every rural household.

Development of drinking water sources to ensure the long-term sustainability of the water supply system.

Other features; Providing training, establishing water quality laboratories, Strict water quality testing and surveillance, Promoting Research work, starting a knowledge centre, a programme for capacity building of communities, etc.

Har Ghar Nal Se Jal programme

Announced by Finance Minister in Budget 2019-20.

Forms a crucial part of the Jal Jeevan Mission.

Aims to implement source sustainability measures as mandatory elements, such as recharge and reuse through grey water management, water conservation, and rainwater harvesting.

4.12 Rajya Sabha passes Indian Antarctic Bill 2022

- The Rajya Sabha has recently passed the Indian Antarctic Bill 2022.

About the News:

- The Indian Antarctic Bill 2022 was introduced and passed with a voice note in the Rajya Sabha following the approval by the Lok Sabha.

A brief on the Antarctic Bill 2022:

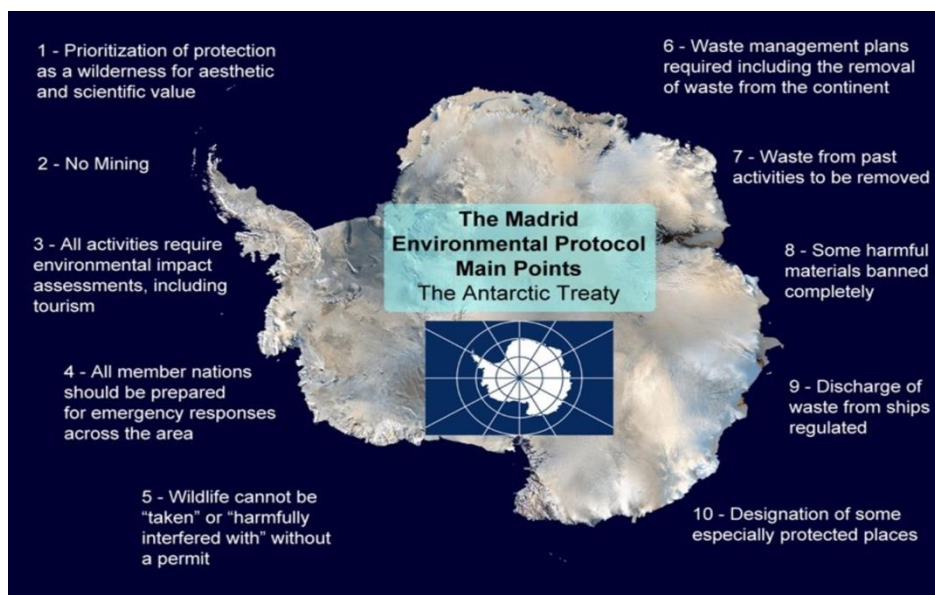
- The bill seeks to protect the environment of the Antarctic along with dependent and associated ecosystems.
- India has two active research stations in the Antarctic namely Maitri and Bharti.
- Dakshin Gangotri was the first Indian base established in
- The Bill seeks to give effect to the Antarctic Treaty, the Convention on the Conservation of Antarctic Marine Living Resources, and the Protocol on Environmental Protection to the Antarctic Treaty.
- The Antarctic Treaty was signed in 1959 and implemented in 1961.
- The total number of parties to the treaty is 54.
- India is a member to the Antarctic

Following the Antarctic treaty, member countries signed the Convention on the Conservation of Antarctic Marine Living Resources at Canberra in 1980 which India ratified in 1985.

The countries also signed the ‘Protocol on Environmental Protection to the Antarctic Treaty (the Madrid Protocol) in 1991, which designates the continent as a natural reserve, devoted to peace and science.

Key Features of the bill

- The bill proposes to prohibit Indian expeditions to Antarctica without a permit or written authorisation of another party to the Antarctic Treaty.
- It also provides for inspection by an officer appointed by the government and for a penalty for contravention of certain provisions of the legislation.
- The Bill also provides a regulatory framework for India’s Antarctic activities through legal mechanisms which will help in the efficient operation of the Indian Antarctic Programme.
- It provides for the constitution of the fund to be called the Antarctic fund which shall be applied towards the welfare of Antarctic research work and the protection of the Antarctic environment.
- The Bill plans to set up Indian Antarctic Authority (IAA) as an apex decision-making authority under the Earth Sciences Ministry, to provide an accountable process for supervision of Antarctic research and expeditions.
- It extends the jurisdiction of Indian courts to Antarctica and lays out penal provisions for crimes on the continent by Indian citizens, and foreign citizens who are part of Indian expeditions.



- It provides for the establishment of the Committee on Antarctic Governance and Environmental Protection to monitor, implement and ensure compliance with international laws, and emissions standards.
- The Bill prohibits mining, dredging and activities that threaten the pristine conditions of Antarctica like nuclear explosion and radioactive waste disposal, the introduction of non-sterile soil, and the discharge of plastic, garbage and other substance into the sea.

Significance:

- It plans to facilitate India's involvement in the management of tourism in the Antarctic and the sustainable development of fisheries.
- It also aims to increase India's international visibility and credibility in Polar governance for cooperation in scientific studies and logistics.

4.13 Monarch Butterfly

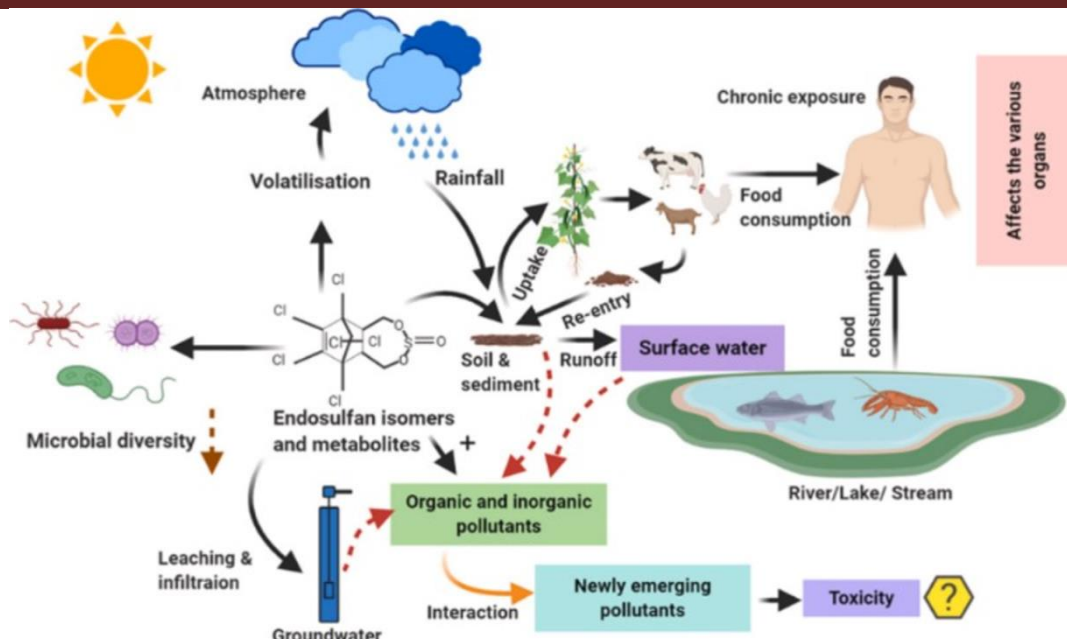
- **Context:** The migratory monarch butterflies have been recently declared "endangered" in the International Union for Conservation of Nature (IUCN) Red List of threatened species.
- The monarch Butterfly is a sub-species of the *Danaus plexippus* butterfly that travels around 4,000 kilometres across America.



- It is the most recognizable butterfly species that are essential pollinators and further provides various ecosystem services such as maintaining the global food web.
- A smaller population of the species is also found in countries like Australia, Hawaii, and India.
- Their population in the continent has been noted to decline by 23-72% over the last decade.
- Legal and illegal logging and deforestation for the purpose of agriculture and urban development, have caused its habitat destruction.
- This is also complemented by frequent storms and droughts that disrupt flowering cycles ultimately leading to the killing of millions of butterflies.

4.14 Endosulfan and Rotterdam Convention

- **Context:** The Supreme Court has recently directed the Kerala State Government to provide for relief to Endosulfan victims, in pursuance of Right to life under Article 21.
- Endosulfan is a restricted-use pesticide that is particularly effective against aphids, fruit worms, beetles, leafhoppers, moth larvae, and white flies on a wide variety of crops.



- In India, Endosulfan pesticide was used widely on crops like cashew, cotton, tea, paddy, fruits and others, until 2011, when the Supreme Court banned its production and distribution.
- This was because of the health effects of the chemical that included, neurotoxicity, late sexual maturity, physical deformities and poisoning.
- The Rotterdam Convention is an international treaty designed to facilitate informed decision-making by countries with regard to trade in hazardous chemicals.
- In this perspective, Endosulfan, has been listed by the Rotterdam Convention subject to the Prior Informed Consent (PIC) procedure since 2011.

4.15 Gaia hypothesis

- **Context:** James Lovelock, the creator of the Gaia hypothesis, recently died on his 103rd birthday.
- The Gaia hypothesis also known as the Gaia theory or the Gaia principle proposes that organisms interact with their inorganic surroundings on Earth to form a synergistic self-regulating, complex system that helps to maintain and perpetuate the conditions for life on the planet.
- It was first proposed in 1970.
- It postulates that this single system as a whole maintains Earth's surface in a habitable state by self-regulating feedback mechanisms.
- Therefore it holistically covers aspects of how the biosphere and the evolution of life forms affect the stability of global temperature, ocean salinity, oxygen in the atmosphere, the maintenance of a hydrosphere of liquid water and other environmental variables that affect the habitability of Earth.

4.16 Vilayati kikar

- **Context:** The Delhi Forest and wildlife department will be carrying out pruning of the invasive species- vilayati kikar from a 20-hectare area of the Central Ridge, by simultaneously growing native Aravalli species next to them as part of an eco-restoration project.
- The long-term plan of the project is to remove the invasive species from around 7,500 hectares of forest land across Delhi.
- Vilayati kikar (*Prosopis juliflora*) is an invasive tree species introduced under the British Empire in the 1930s (native to Mexico, South America and the Caribbean) as part of development of Delhi.

NEW LEASE OF LIFE
Central ridge is spread **over 864 hectares**
423 hectares to be restored over 5 years
COST ₹12.6 crore

THE PROJECT
➤ The 'invasive' vilayati kikar and lantana to be replaced by native species
First phase of restoration: Between SP Marg and Vande Mataram Marg

HOW IT WILL BE DONE

- Native tree species to be planted around vilayati kikar
- Canopy openings to be created to allow sunlight to reach the forest floor
- Creepers to be used on vilayati kikar to naturally 'strangulate' it
- The dead tree will then be removed, once native species around it grow to a certain height

- The tree does not let other trees flourish in the area, because of its deep roots and it monopolises water and sunlight in the area.
- These trees can dry up underground aquifers through its deep-root system, going as far as 20 metres or more in search of water, significantly higher than around 5 metres that native shrubs and trees go.
- It has a thick canopy and does not allow sunlight to reach the floor of the area where they are planted.
- An invasive species is an organism that causes ecological or economic harm in a new environment where it is not native. Invasive species can cause extinctions of native plants and animals, reducing biodiversity, competing with native organisms for limited resources, and altering habitats.

4.17 Elephant Conservation

- The Union environment ministry has recently notified 1,197.48 sq. km of forest in Kanyakumari and Tirunelveli as Agasthyamalai Elephant Reserve. This will be the fifth elephant reserve in Tamil Nadu.

About World Elephant Day

- Every year on August 12, World Elephant Day is observed with an aim to acknowledge Elephants' significance in our ecosystem.

- The day was first observed by Canadian filmmakers Michael Clark and Patricia Sims with the Thailand-based Elephant Reintroduction Foundation, in 2012 to bring awareness to the disturbing situations of African and Asian elephants.

Significance

- The day underlines the awareness of the threats that elephants face in their daily lives.
- These animals face the threats of poaching, illegal wildlife trade, habitat destruction and more.
- Hence, the measures to work towards creating a sustainable and safe environment for these creatures where they can thrive.

About importance of Elephants

- Asian elephants are listed as “Endangered” on the IUCN Red List of threatened species.
- Elephants are important ecosystem engineers.
- They make pathways in dense forested habitat that allow passage for other animals.
- An elephant footprint can also enable a micro-ecosystem that, when filled with water, can provide a home for tadpoles and other organisms.
- As keystone species, they help maintain biodiversity of the ecosystems they inhabit.
- Further, during the dry season, elephants use their tusks to dig for water, which provides water for other animals that share harsh habitats.
- They are also one of the major ways in which trees disperse their seeds; some species rely entirely upon elephants for seed dispersal.

About the notification of Elephant Reserve

- Now, the state forest department will get additional funding under the centrally-sponsored Project Elephant.
- Although the area is already protected as a reserve forest or wildlife sanctuary, elephant reserve status will focus on the protection and conservation of elephants as indicator species representing a healthy ecosystem.
- The elephant corridors will be identified and better management practices can be adopted.
- With the new inclusion, there are 32 notified Elephant Reserves (ERs) in the country spread over 15 states.

4.18 Familial Forestry

Land for life Award 2021 has been recently conferred to the Familial Forestry of Rajasthan by UNCCD.

About the News:

- Land for Life is an award programme of the United Nations Convention to Combat Desertification (UNCCD), which is conferred every two years.

- The Award aims to provide global recognition to individuals and organizations whose work and initiatives have made a significant contribution to sustainable development through sustainable land management (SLM).
- The theme of the 2021 award was “Healthy Land, Healthy Lives”.

Understanding Familial Forestry:

- Familial Forestry means caring for the tree as a family member.
- It means transferring the care of the tree and environment in the family so that a tree becomes a part of the family’s consciousness.
- Familial Forestry of Rajasthan is a unique concept that relates a tree with a family, making it a green "family member".
- This movement involved more than a million families from more than 15,000 villages in desert-prone northwest Rajasthan.
- About 5 million saplings have been planted in the past 15 years, with the active participation of students and desert dwellers.

Significance:

- This green or eco socialization aims to bring environmental sensitivity and empowerment.
- It shapes the stakeholder as an environment-connected individual.
- Alongside, the produce from the plants/trees not only provide nutrition to the household and the community but also becomes a source of income also.
- Family trees provide nesting places to birds, and insects thus increasing biodiversity.
- Familial Forestry also associates rituals and festivals with trees to make green footprinting an integral part of social structure.

Management of Forests:

- According to IUCN, deforestation and forest degradation contribute to around 12% of global greenhouse gas emissions.
- The total area occupied by primary forests in India has decreased by 3.6%.
- Afforestation through forest landscape restoration
- The governments have relied on afforestation and reforestation as a means of establishing trees on non-treed land. These strategies have now evolved.
- **Focus on forest landscape restoration:** The focus is now on forest landscape restoration- the process of regaining ecological functionality and improving human welfare across deforested or degraded forest landscapes.
- **Community participation:** Forest landscape restoration seeks to involve communities in the process of designing and executing mutually advantageous interventions for the upgradation of landscapes.

- **Ensuring diversity of species:** A crucial aspect of this process is to ensure the diversity of the species while planting trees. Natural forests with diverse native tree species are more efficient in sequestering carbon than monoculture tree plantations. This ensures healthier local communities and their livelihoods and will also enhance the quality of the forests.

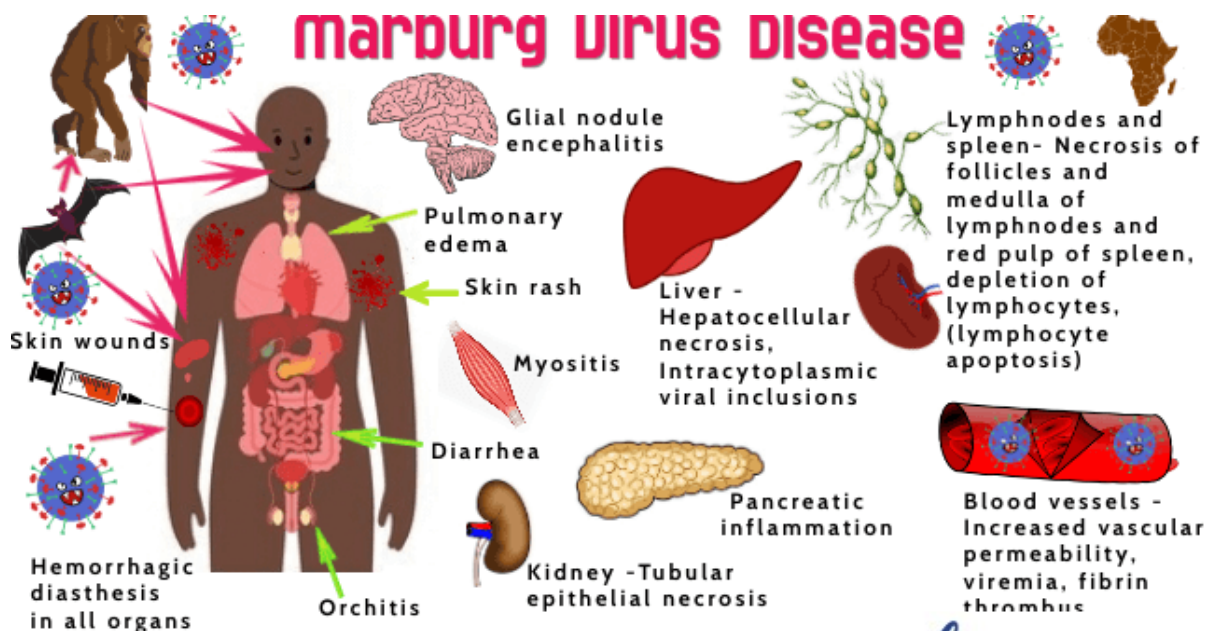
Programs and initiatives for forest restoration

- The span 2021-2030 is the UN Decade on Ecosystem Restoration, emphasising efforts to restore degraded terrestrial ecosystems including forests.
- Bonn Challenge: In 2011, the Bonn Challenge was launched with a global goal to restore 150 million hectares of degraded and deforested landscapes by 2020 and 350 million hectares by 2030.
- India joined the Bonn Challenge in 2015, pledging to restore 26 million hectares of degraded and deforested land by 2030.
- There are a number of government programmes such as Compensatory Afforestation, the National Afforestation Programme, the National Mission for a Green India (Green India Mission), the Nagar Van scheme and the Forest Fire Prevention and Management Scheme, Green Skill Development Programme (for the youth who aspire to attain employment in the environment and forest sectors) etc.

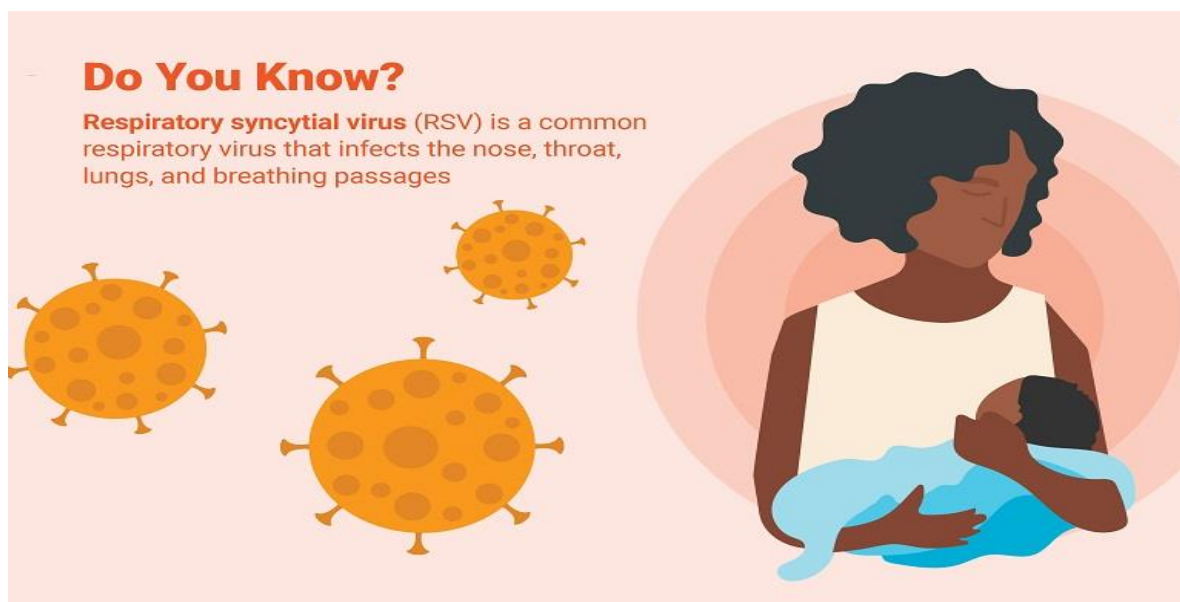
5. SCIENCE & TECHNOLOGY

5.1 Marburg Virus

- Marburg virus disease is a highly virulent disease that causes haemorrhagic fever, it is carried by bats with a fatality ratio of up to 88%.
- It is in the same family as the virus that causes Ebola virus disease.
- Two large outbreaks that occurred simultaneously in Marburg and Frankfurt in Germany, and in Belgrade, Serbia, in 1967, led to the initial recognition of the disease.
- The outbreak was associated with laboratory work using African green monkeys (*Cercopithecus aethiops*) imported from Uganda.
- Subsequently, outbreaks and sporadic cases have been reported in Angola, Democratic Republic of the Congo, Kenya, South Africa and Uganda.
- There have been 12 major Marburg outbreaks since 1967, mostly in southern and eastern Africa.



5.2 Respiratory Syncytial Virus (RSV)



- Lower respiratory infection attributable to respiratory syncytial virus (RSV) was responsible for more than 1,00,000 deaths in children under five worldwide in 2019, according to a new estimate published in The Lancet.
- The study is the first to examine RSV disease burden in narrow age brackets
- According to the report the incidence rate in India is 53 per 1,000 children per year (5.3%) and there were an approximate 61,86, 500 episodes of RSV-associated acute lower respiratory infection in children below 5 years
- Respiratory syncytial virus (RSV) is also called human respiratory syncytial virus (hRSV) and human orthopneumo virus.
- It is a common, contagious virus that causes infections of the respiratory tract.
- It is a negative-sense, single-stranded RNA virus, and its name is derived from the large cells known as syncytia that form when infected cells fuse.
- RSV is the most common cause of acute lower respiratory infection in young children.

5.3 African Swine Fever



It is a highly contagious and fatal animal disease that infects and leads to an acute form of hemorrhagic fever in domestic and wild pigs.

Other manifestations of the disease include:

- High fever
- Depression
- Anorexia
- Loss of appetite
- Hemorrhages in the skin
- Vomiting and diarrhoea among others.
- It was first detected in Africa in the 1920s.

- Historically, outbreaks have been reported in Africa and parts of Europe, South America, and the Caribbean.
- However, since 2007, the disease has been reported in multiple countries across Africa, Asia and Europe, in both domestic and wild pigs.
- The mortality is close to 95% - 100% and since the fever has no cure, the only way to stop its spread is by culling the animals.
- ASF is not a threat to human beings since it only spreads from animals to other animals.
- ASF is a disease listed in the World Organisation for Animal Health (OIE)'s Terrestrial Animal Health Code.

5.4 India: Target to eliminate Kala-azar by 2023



- Government of India has set the target to eliminate Kala-azar from country by 2023. According to Dr Bharati Pravin Pawar (Minister of State for Health and Family Welfare), out of 633 Kala-azar endemic blocks, 625 blocks have successfully eliminated the kala-azar in 2021. India's target is way ahead than World Health Organisation (WHO)'s target of eliminating the disease by 2030.
- About Kala Azar: Kala Azar is also called as Leishmaniasis. It is a neglected tropical disease, by which over 100 countries are affected, including India. Neglected tropical diseases are a group of multiple communicable diseases that are prevalent in tropical and subtropical conditions of 149 countries. The disease is caused due to parasite called Leishmania. This parasite is transmitted via bite of sand flies.

Three Types of Kala Azar:

- **Visceral leishmaniasis:** It affects multiple organs and is considered as the most serious form of the disease. It is commonly called as Kala Azar in India.



- **Cutaneous leishmaniasis:** It is the most common type, affecting skin. It results into skin sores.



- **Mucocutaneous leishmaniasis:** It causes skin and mucosal lesions.



- **Treatment of Kala Azar:** Only drug that is used to treat kala azar is miltefosine. However, this drug is losing its effectiveness rapidly, because of parasite's resistance to this drug. A protein called 'P4ATPase-

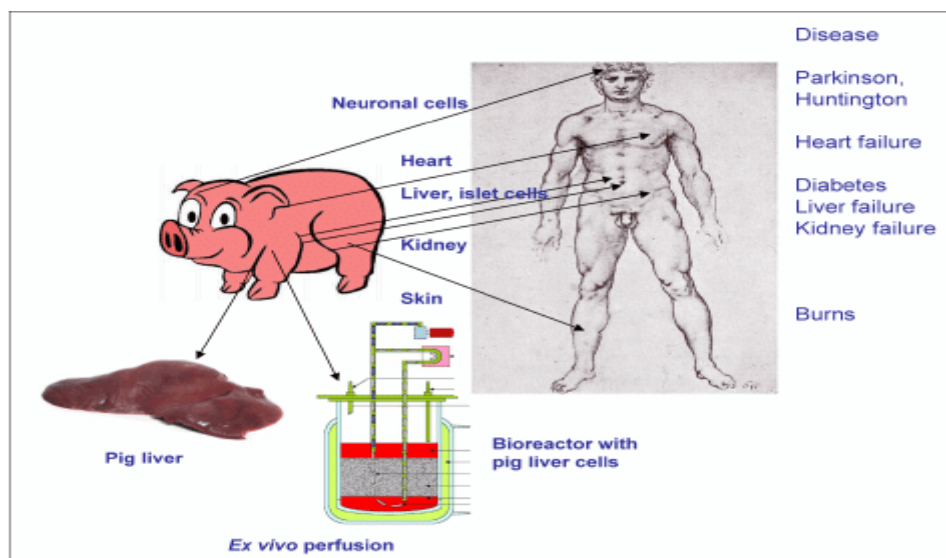
CDC50', helps in intaking the drug by parasite. But other called 'P-glycoprotein', throws this drug out from parasite's body.

5.5 Legionellosis Disease



- Legionellosis is a “pneumonia-like illness that varies in severity from mild febrile illness to a serious and sometimes fatal form of pneumonia,” according to the WHO.
- The disease typically spreads via inhalation of contaminated aerosols from contaminated water, which could come from — air conditioning cooling towers, evaporative condensers associated with air conditioning and industrial cooling, hot and cold water systems, humidifiers and whirlpool spas.
- Direct human-to-human transmission of this disease has not yet been reported, according to the WHO.
- There is concern that it could contribute to the spread of these highly disease-causing strains by linking modern man-made water systems through human transmission.”

5.6 Xenotransplantation



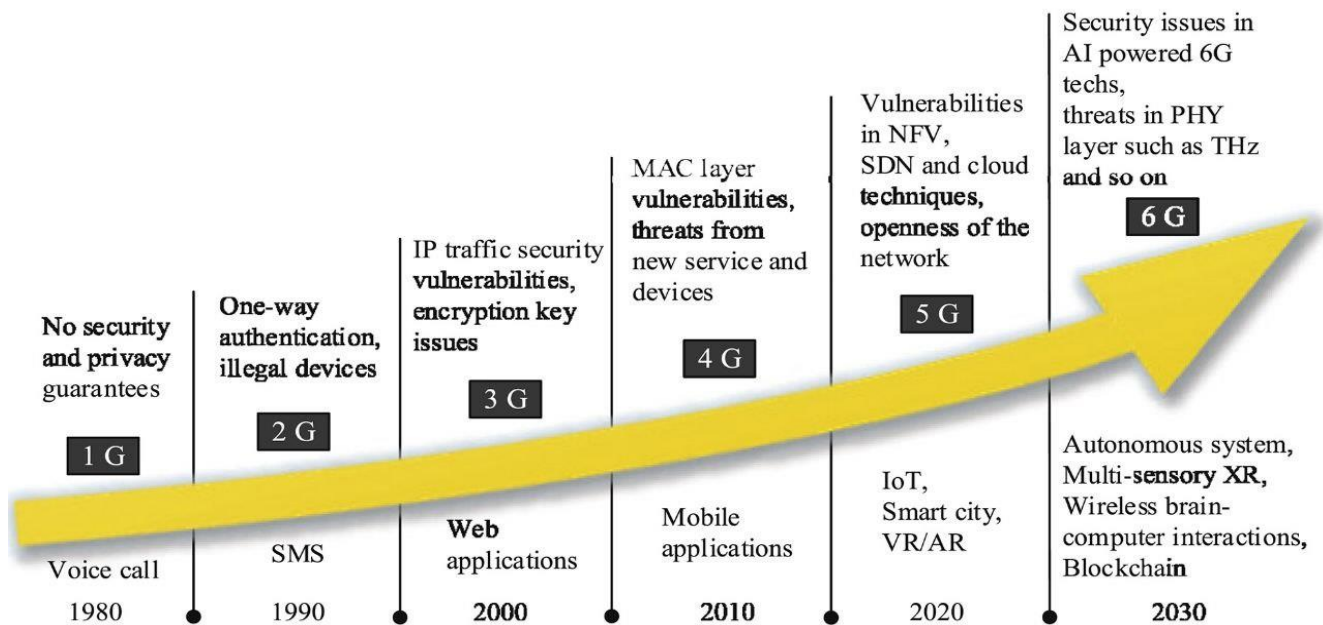
Context

- Recently the doctors in the USA transplanted a genetically altered pig heart into a patient which is referred to as xenotransplantation (from animals to humans).

About xenotransplantation

- Xenotransplantation is any procedure that involves the transplantation of either live cells, tissues, or organs from a nonhuman animal source, or human body fluids, cells, tissues or organs into a human recipient.
- Such cells, tissues or organs are called xenografts or xenotransplants.
- It offers a potential treatment for end-stage organ failure, a significant health problem in parts of the industrialized world.
- It also raises many novel medical, legal and ethical issues.

5.7 6G Technology



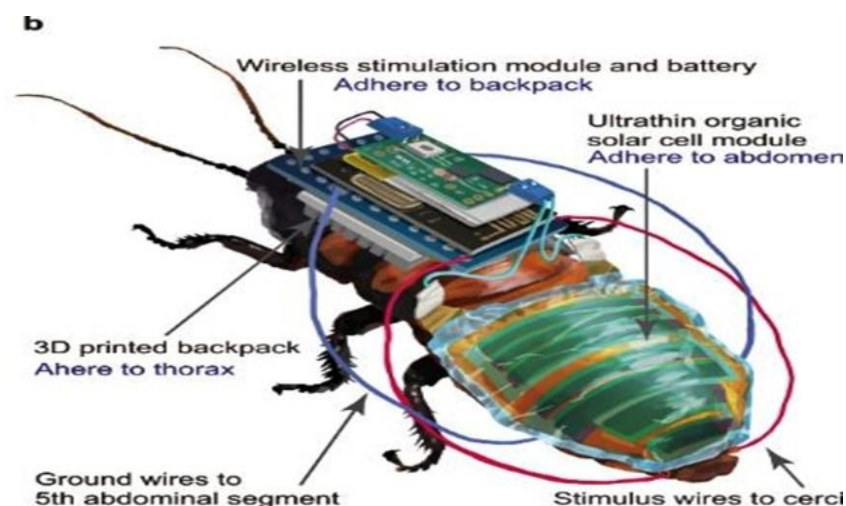
- 6G (sixth-generation wireless) is the successor to 5G cellular technology.
- It will be able to use higher frequencies than 5G networks and provide substantially higher capacity and much lower latency (delay).
- One of the goals of 6G internet will be to support one microsecond-latency communication (delay of one-microsecond in communication).
- This is 1,000 times faster - or 1/1000th the latency - than one millisecond throughput.
- It seeks to utilize the terahertz band of frequency which is currently unutilized.

5.8 Facial Recognition Technology



- Facial recognition is an algorithm-based technology which creates a digital map of the face by identifying and mapping an individual's facial features, which it then matched against the database to which it has access.
- In the Automated Facial Recognition System (AFRS), the large database (containing photos and videos of peoples' faces) is used to match and identify the person.
- Image of an unidentified person, taken from CCTV footage, is compared to the existing database using Artificial Intelligence technology, for pattern-finding and matching.

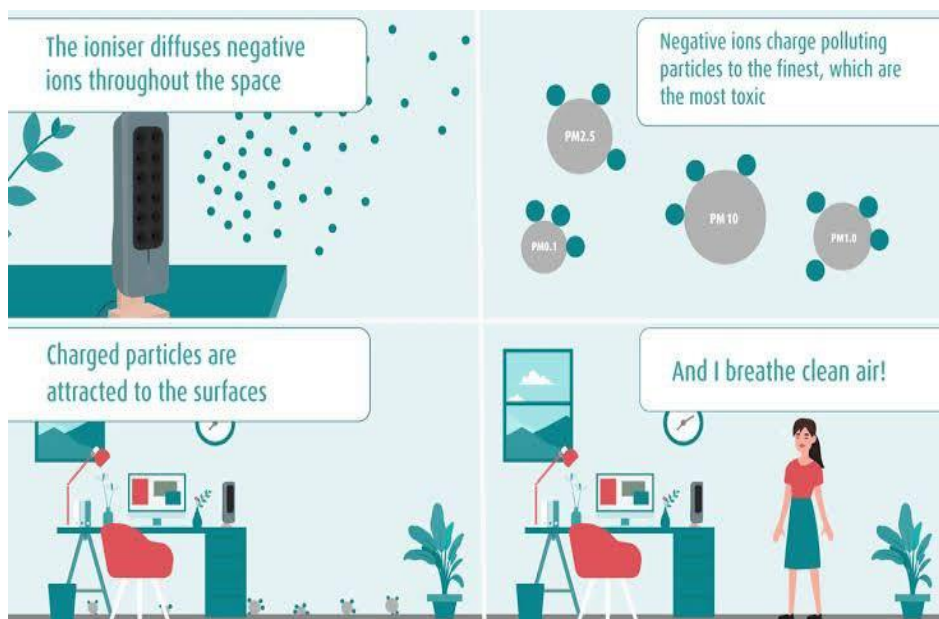
5.9 Cyborg Cockroaches



- An international team of researchers led by Japan's scientific institution, RIKEN's Cluster for Pioneering Research (CPR), have devised a system that can create cyborg cockroaches, that are part insect and part machine.

- They claim that these insects, whose movements are controlled by tiny integrated circuits, will be able to conduct surveillance in procedures like urban search and rescue, environmental monitoring and inspection of areas dangerous to humans.
- The researchers claim that by equipping the cockroaches with small wireless control modules, handlers will be able to control the insect's legs remotely for long periods of time.
- The team used Madagascar cockroaches, which are not only the largest species of cockroaches, reaching an estimated 6 cm, but are also known for making hissing sounds when disturbed, which they make by expelling air from the openings on their back.

5.10 Negative Ion Technology



- Negative ion technology embeds negative ions in personal products and is currently being advertised as a means to maintain health, balance energy, and improve well-being.
- This technology is used in certain silicone wristbands, quantum or scalar-energy pendants, and kinesiobiology tape.
- Negative ions are also made when sunlight, radiation, air, or water break down oxygen.
- The minerals that produce these negative ions often include naturally occurring radioactive substances such as uranium and thorium.

5.11 Space Economy



- The global space industry includes the industry's core activities in-space manufacturing and satellite operations.
- The main segments of the space economy include manufacturing, services from satellite operators and consumer services.
- India's share in Space Industry

Global position:

- According to Space Tech Analytics, India is the sixth largest player in the industry internationally, with 3.6% of the world's space-tech companies.
- The US is the housing leader of 56.4% of all companies in the space-tech ecosystem. Other major players include the UK (6.5%), Canada (5.3%), China (4.7%) and Germany (4.1%).
- Most of the companies in this sector, globally, are involved in manufacturing spacecraft equipment and satellite communications.

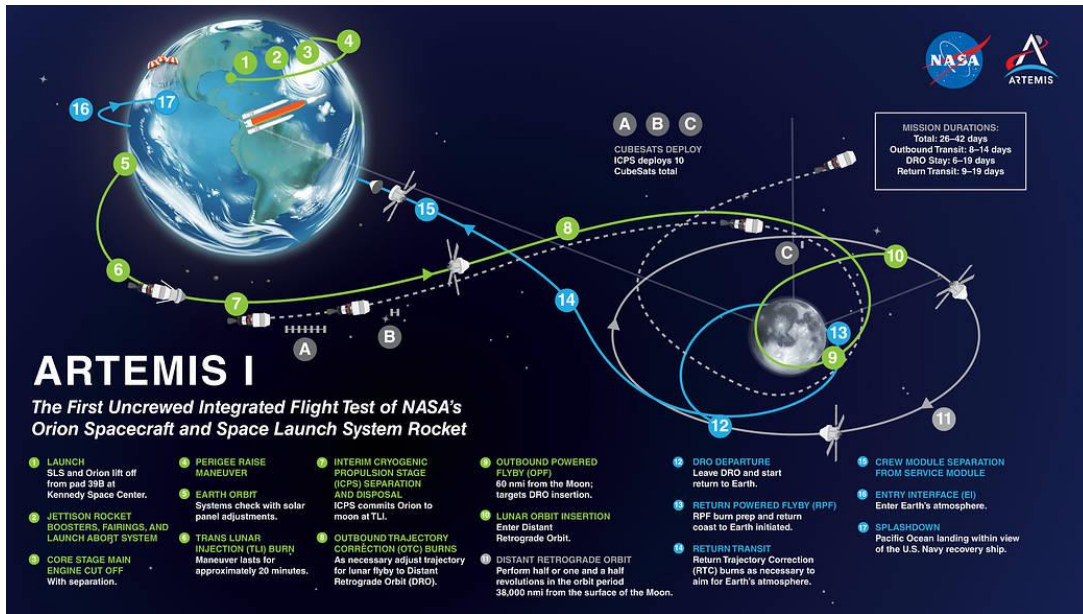
Cost-effectiveness:

- The country's standout feature is its cost-effectiveness.
- India holds the distinction of being the first country to have reached the Mars' orbit in its first attempt and at \$75 million way cheaper than Western standards.

Start-ups in Space sector:

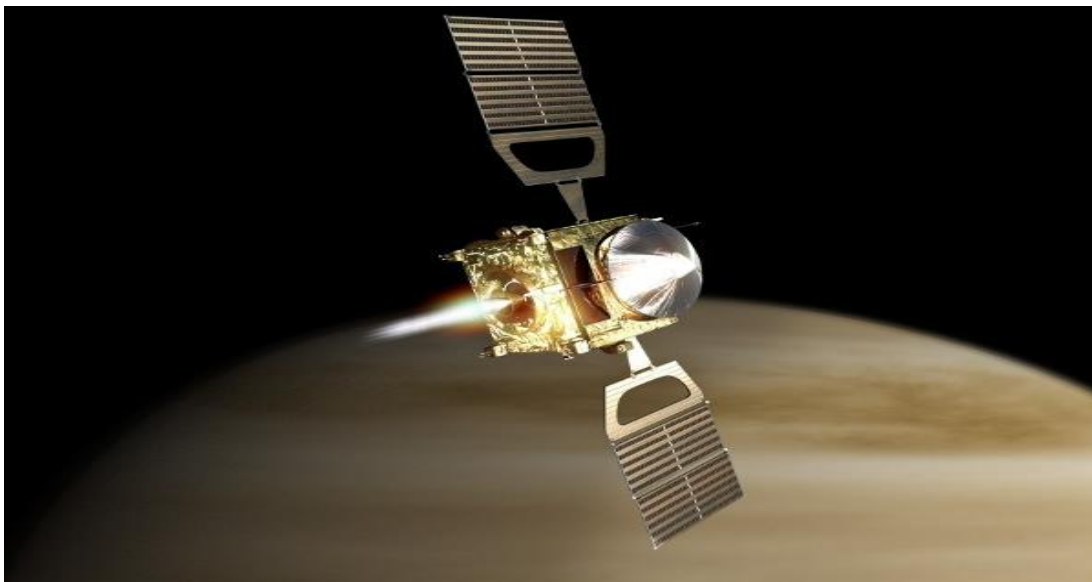
- The 60-odd start-ups that had registered with the Indian Space Research Organisation (ISRO), a majority of them were dealing in projects related to space debris management.
- As space becomes more congested with satellites, the technology would thus help in managing 'space junk' (debris of old spacecraft and satellites).

5.12 Artemis I Mission



- Artemis I is an uncrewed mission of NASA.
- It will test the agency’s Space Launch System (SLS) rocket and Orion crew capsule.
- Artemis I will be the first in a series of increasingly complex missions to build a long-term human presence at the Moon for decades to come.
- The primary goals for Artemis I are to demonstrate Orion’s systems in a spaceflight environment and ensure a safe re-entry, descent, splashdown, and recovery prior to the first flight with crew on Artemis II.

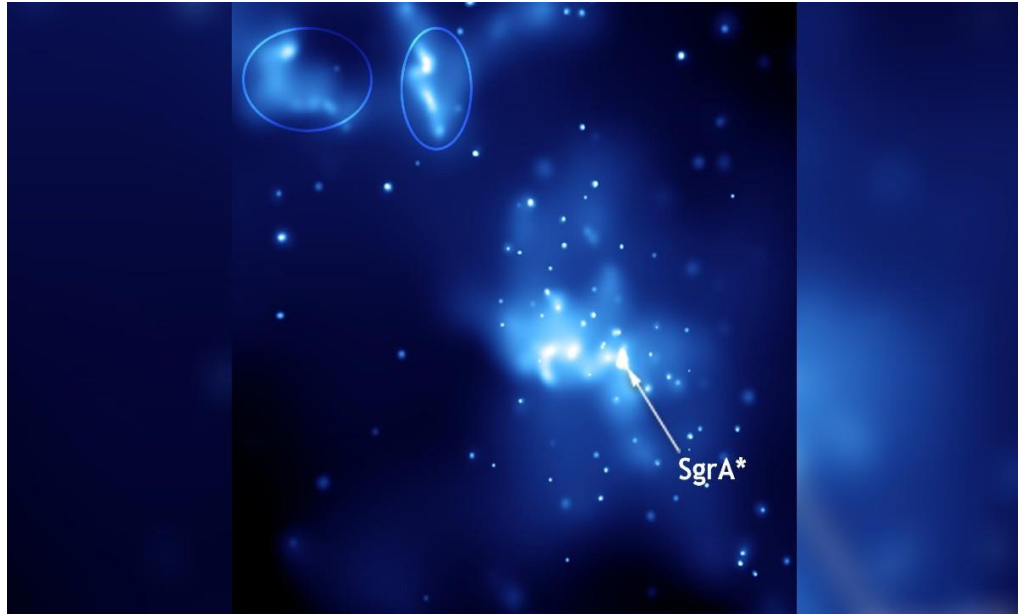
5.13 Shukrayaan-1



- The mission to Venus is likely to cost between ₹500 crore and ₹1,000 crore depending on the level of instrumentation, said S. Somanath, chairman, Indian Space Research Organisation (ISRO).
- Shukrayaan-1 is a planned orbiter to Venus by the Indian Space Research Organisation to study the surface and atmosphere of Venus.

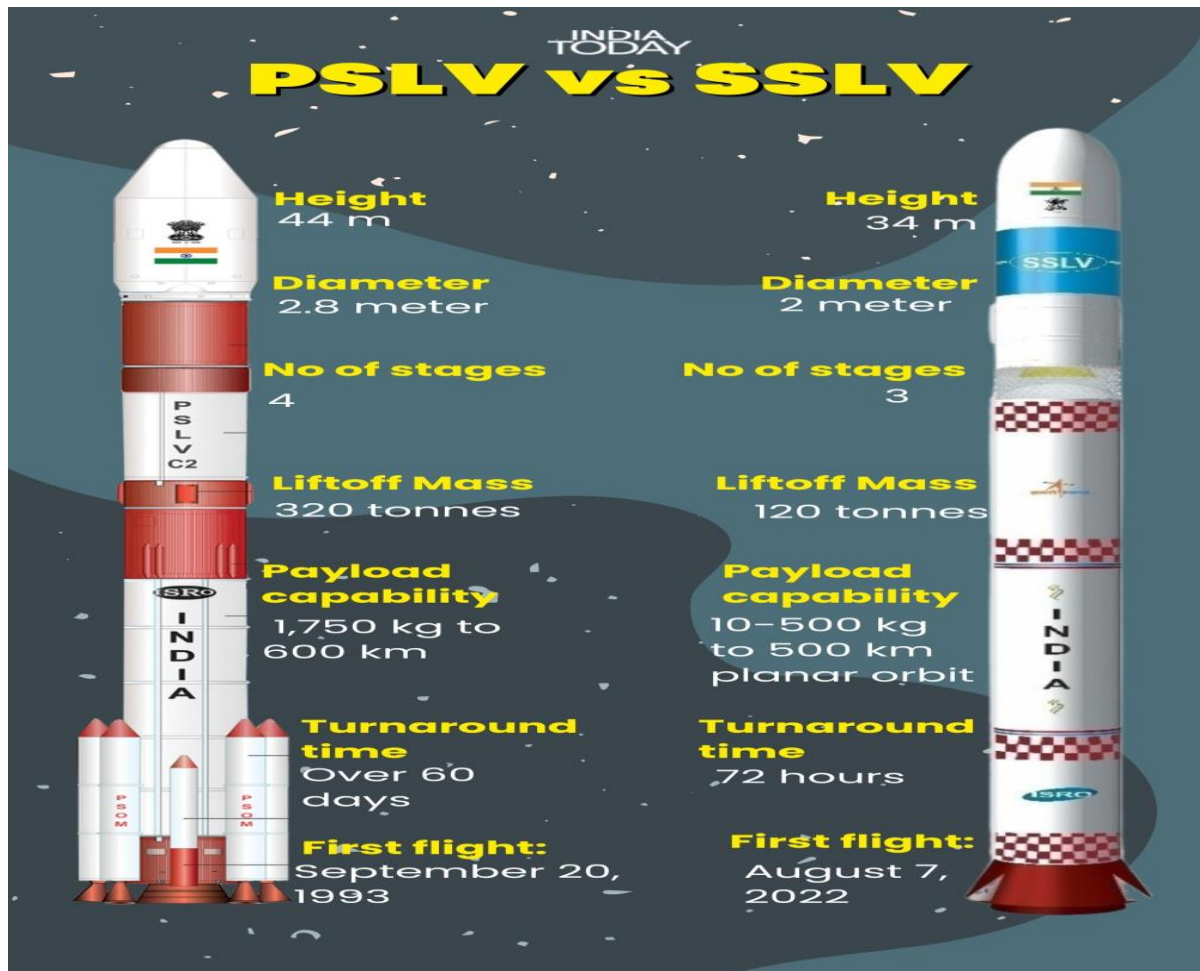
- Although 2024 has been doing the rounds as the likely year for the ISRO's Venus mission, the space agency can announce a schedule only after the Indian government gives the go-ahead for the mission, said Mr. Somanath.
- Venus offers different challenges compared to Mars, given the thick atmosphere and surface activity, which make it a complex planet.

5.14 Sagittarius A



- Scientists from the Event Horizon Telescope (EHT) facility revealed the first image of the black hole at the centre of the Milky Way.
- The image of Sagittarius A* (SgrA*) gave further support to the idea that the compact object at the centre of our galaxy is indeed a black hole, strengthening Einstein's general theory of relativity.
- In 2019, the Event Horizon Telescope facility, a collaboration of over 300 researchers, made history by releasing the first-ever image of a black hole, M87* — the black hole at the centre of a galaxy Messier 87, which is a supergiant elliptic galaxy.
- The whole exercise was possible because of the enormous power of the Event Horizon Telescope, an ensemble of several telescopes around the world, which together were like a giant eye on the earth with a sight that is 3 million times sharper than the human eye.
- Sagittarius A* is 27,000 light years from us.

5.15 SSLV- small satellite launch vehicle



- Recently, Indian Space Research Organisation (ISRO) launched the first flight of the Small Satellite Launch Vehicle (SSLV), carrying an Earth observation satellite EOS-02 and co-passenger students' satellite AzaadiSAT.
- However, the mission failed to place the satellites in their required orbits, and the satellites, as they were already detached from the launch vehicle, were lost.
- Small Satellite Launch Vehicle (SSLV) is a three stage Launch Vehicle configured with three Solid Propulsion Stages and a liquid propulsion-based Velocity Trimming Module (VTM) as a terminal stage.
- SSLV is 2m in diameter and 34m in length with a lift-off weight of around 120 tonnes.
- SSLV is capable of launching 500kg satellites in 500km planar orbit from Satish Dhawan Space Centre (SDSC).

Key Features:

- Low cost,
- Low turn-around time,
- Flexibility in accommodating multiple satellites,
- Launch demand feasibility,
- Minimal launch infrastructure requirements, etc.

Significance:**The Era of small satellites:**

- Earlier, the bigger satellite payloads were given importance, but as the sector grew many players emerged like Businesses, government agencies, universities, and laboratories began to send satellites.

Mostly all of them fall in the category of small satellites.

The Rise in Demand:

- The demand for the launch of small satellites has increased at a rapid pace in the last eight to ten years, due to the ever-growing need for space-based data, communication, surveillance, and commerce.

Saves cost:

- Satellite manufacturers and operators do not have the luxury of waiting months for space on a rocket or paying exorbitant trip charges.
- Therefore, Organizations are increasingly developing a constellation of satellites in space.
- Projects like SpaceX's Starlink and One Web are assembling a constellation of hundreds of satellites.

Business opportunity:

- With the rise in demand, the rockets could be launched frequently with less cost, this provides a business opportunity for space agencies like ISRO to tap the potential of the sector as most of the demand comes from companies that are launching satellites for commercial purposes.

5.16 Inflatable Aerodynamic Decelerator (IAD)

- Indian Space Research Organisation (ISRO) has successfully demonstrated a new technology with Inflatable Aerodynamic Decelerator (IAD).
- Designed and developed by ISRO's Vikram Sarabhai Space Centre (VSSC), IAD is a game-changer with multiple applications for future missions including to Mars and Venus.

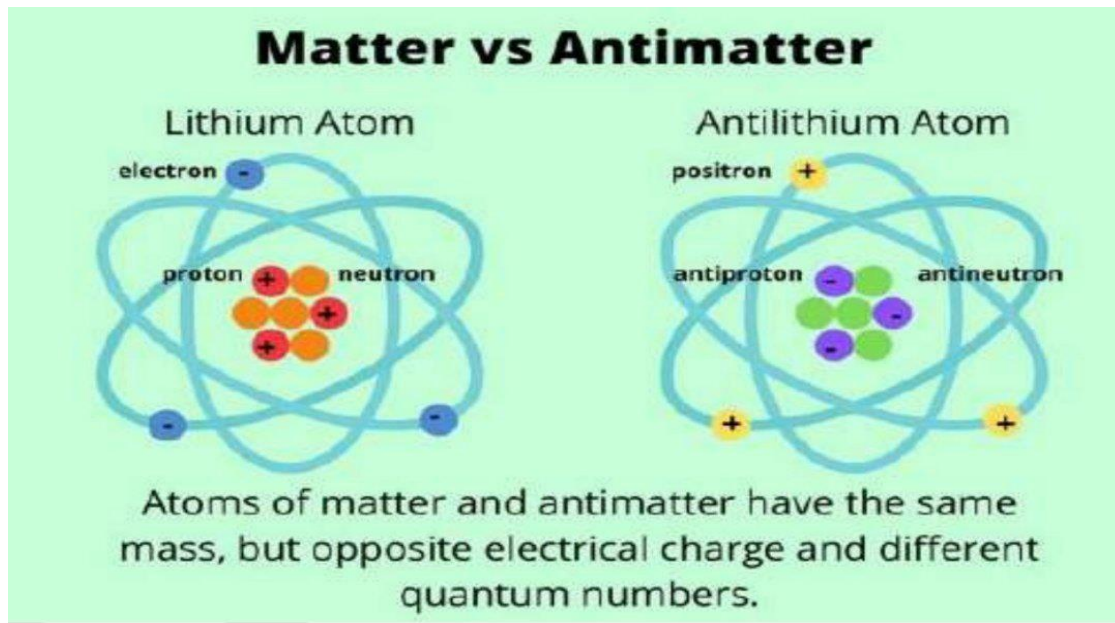
- The IAD was successfully test flown in a 'Rohini' sounding rocket from Thumba Equatorial Rocket Launching Station.
- Rohini sounding rockets are routinely used for flight demonstration of new technologies being developed by ISRO as well as by scientists from India and abroad.
- The IAD was initially folded and kept inside the payload bay of the rocket. At around 84 km altitude, the IAD was inflated and it descended through the atmosphere with the payload part of a sounding rocket.
- The IAD has systematically reduced the velocity of the payload through aerodynamic drag and followed the predicted trajectory

5.17 INS Gomati Decommissioned



- The Indian Navy has decommissioned INS Gomati after 34 years in service on 28th May 2022.
- The warship was inducted on April 16, 1988. The ship is the third of the Godavari class guided-missile frigates and is the oldest warrior of the Western Fleet.
- INS Gomati was named after the River Gomati. It took part in several operations, including Operation Cactus, Parakram, and Indradhanush, and several other bilateral and multinational naval exercises.
- In recognition of its stellar contribution to the national maritime security, INS Gomati was awarded the prestigious Unit Citation twice, once in 2007-08 and again in 2019-20.
- INS Gomati will be kept alive in an open-air museum on the picturesque banks of river Gomati in Lucknow, where many of its combat systems will be displayed as military and war relics.

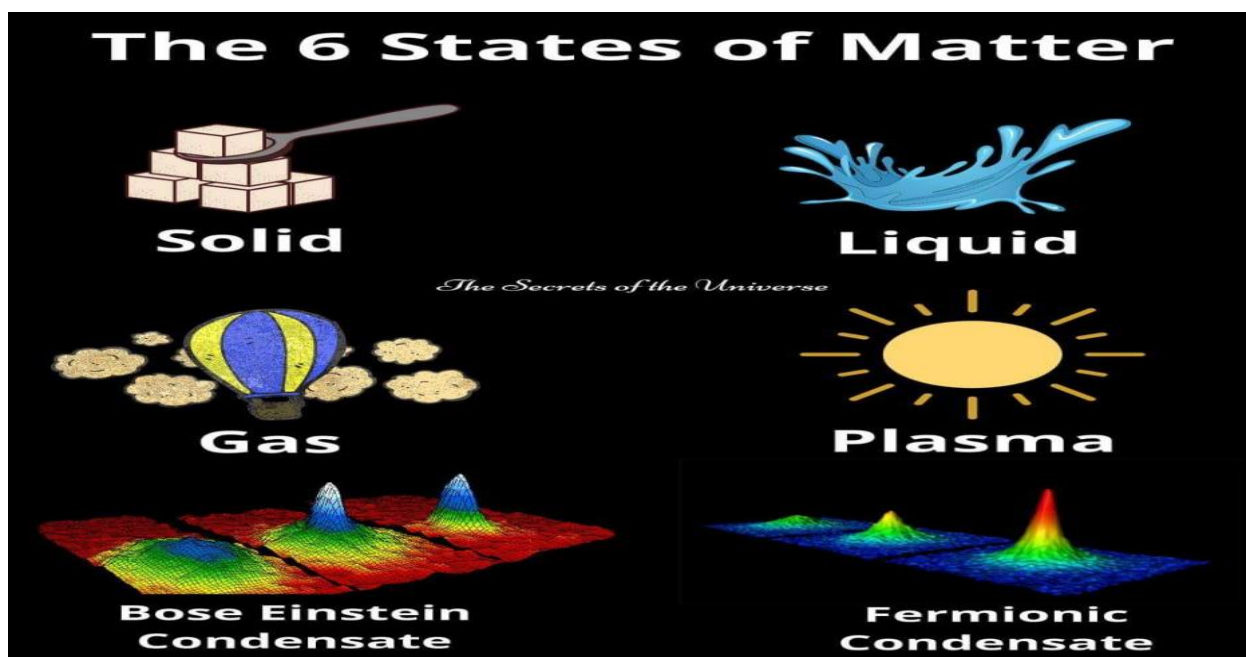
5.18 Positron Excess Phenomenon



- In the News: Researchers from the Raman Research Institute (RRI), Bengaluru, have resolved the mystery of the antimatter counterpart of the electrons called Positron and Positron Excess Phenomenon.

About

- Antimatter is the opposite of normal matter. More specifically, the sub-atomic particles of antimatter have properties opposite those of normal matter.
- For example, the electrical charge of antimatter particles is reversed.
- Antimatter was created along with matter after the Big Bang. But in today's universe, antimatter is rare. For example, Positron.
- Positron or anti-electron
- A Positron is an antimatter counterpart to an electron.
- A positron has the equal or same mass as an electron.
- But the electron has a Negative Electric Charge whereas Positron has a Positive electric Charge.
- Positron Excess Over the years scientists observed an excess of positrons having the energy of more than 10 GeV.

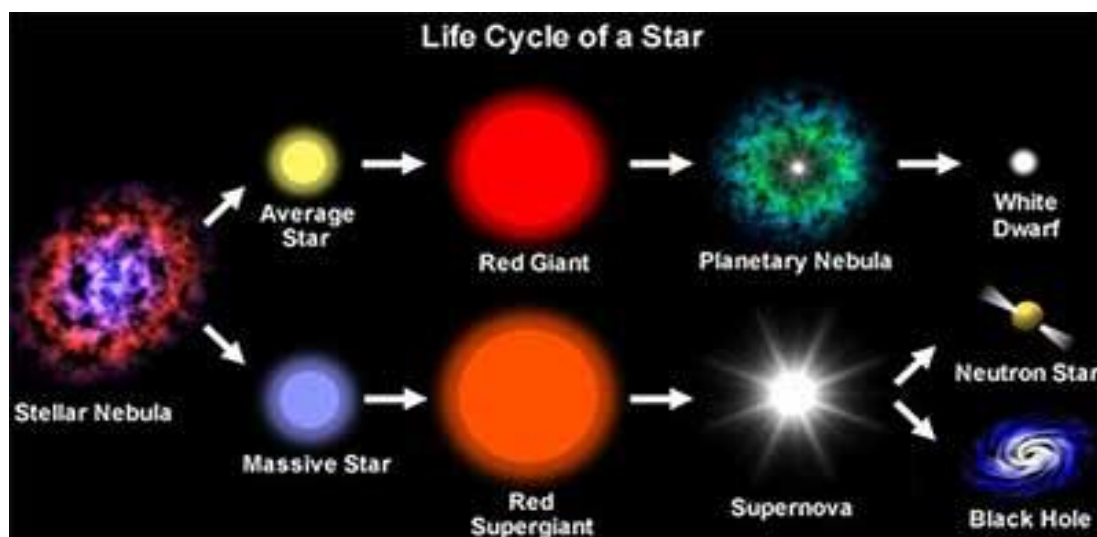
5.19 Bose-Einstein Condensation

- Researchers from IIT Madras have come up with an understanding of the emergence of order in chaotic systems by drawing an analogy with Bose-Einstein condensation (BEC).

ABOUT BOSE-EINSTEIN CONDENSATE (BEC)

- In Bose-Einstein condensate (BEC) particles condense to the lowest energy level when temperature is taken to very low values.
- BEC is a super cooled gas that no longer behaves as individual atoms and particles, but rather an entity in a single quantum state.
- The most intriguing property of BECs is that they can slow down light.
- Tests of general relativity - Light can be variable in speed and frequency.
- Searches for dark energy, dark matter and gravitational waves.
- Spacecraft navigation.
- Prospecting for subsurface minerals on the moon and other planetary bodies.
- Applications of superfluidity and superconductivity
- Precision measurement by the development of sensitive detectors.

5.20 Neutrinos and Star Death



Researching the mechanisms of the so-called Type II supernovae, a team from IIT Guwahati has come up with new insights into the part played by neutrinos in this dramatic death of massive stars.

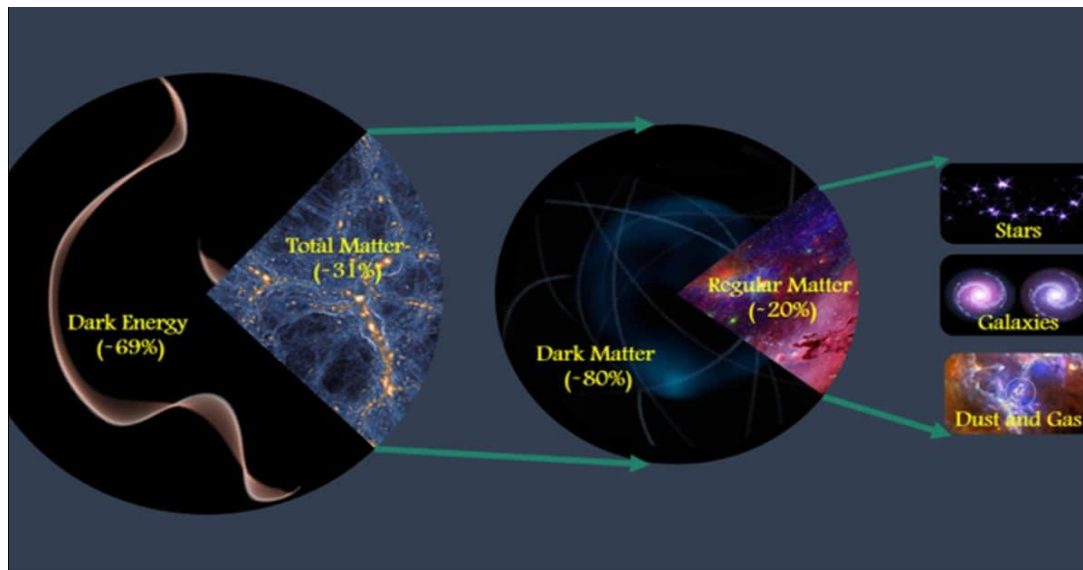
About

- Many stars, towards the end of their lifetimes, form supernovas – massive explosions that send their outer layers shooting into the surrounding space.
- Most of the energy of the supernova is carried away by neutrinos – tiny particles with no charge and which interact weakly with matter.

Neutrinos

- Protons, neutrons, and electrons are tiny particles that make up atoms.
- The neutrino is also a tiny elementary particle, but it is not part of the atom.
- Neutrino has a very tiny mass, no charge and spins half.
- It interacts very weakly with other matter particles.
- Neutrinos come from the sun (solar neutrinos) and other stars, cosmic rays that come from beyond the solar system, and from the Big Bang from which our Universe originated.
- They can also be produced in the lab. Supernova
- All the stars burn nuclear fuel in their cores to produce energy.
- The heat generates internal pressure which pushes outwards and prevents the star from collapsing inward due to the action of gravity on its own mass.
- But when the star ages and runs out of fuel to burn, it starts to cool inside.
- This causes a lowering of its internal pressure and therefore the force of gravity wins; the star starts to collapse inwards.
- This builds up shock waves because it happens very suddenly, and the shock wave sends the outer material of the star flying.
- This is what is perceived as a supernova. This happens in very massive stars.

5.21 Dark Matter

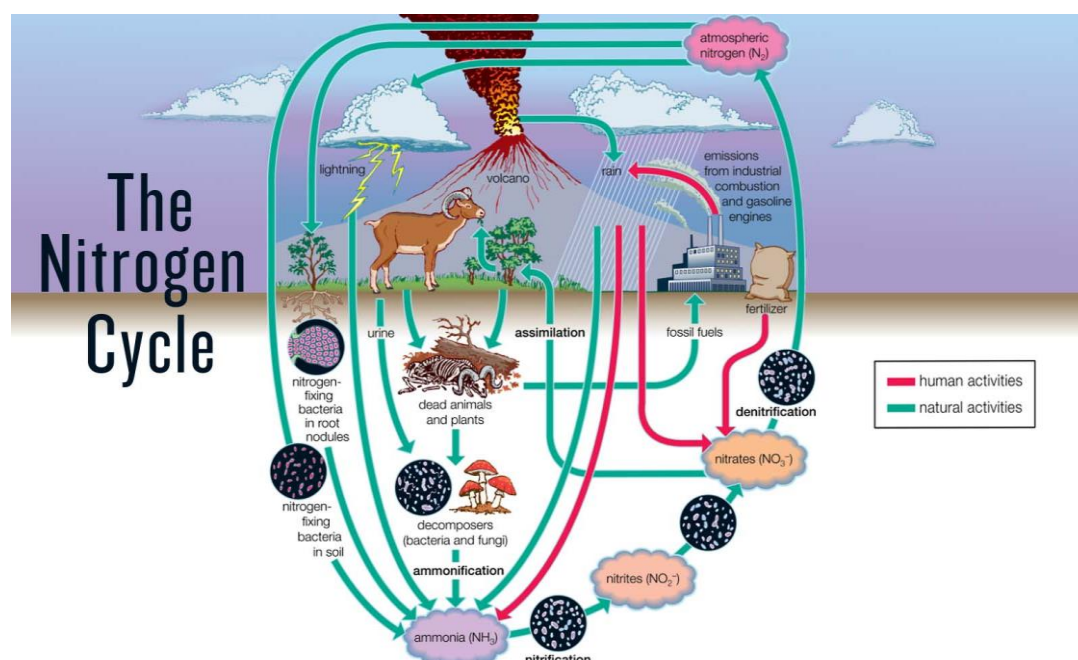


- Scientists are investigating how the shape of dark matter halo affects the motion of stars in stellar bars (found at the centre of some galaxies).
- Dark energy is the name given to the mysterious force that's causing the rate of expansion of our universe to accelerate over time, rather than to slow down.
- Dark matter is a component of the universe whose presence is discerned from its gravitational attraction rather than its luminosity.

Features

- Unlike normal matter, dark matter does not interact with the electromagnetic force.
- This means it does not absorb, reflect or emit light, making it extremely hard to spot.
- In fact, researchers have been able to infer the existence of dark matter only from the gravitational effect it seems to have on visible matter.

5.22 Nitrogen Cycle



- Apart from carbon, hydrogen and oxygen, nitrogen is the most prevalent element in living organisms.
- Nitrogen is a constituent of amino acids, proteins, hormones, chlorophylls and many of the vitamins.
- Plants compete with microbes for the limited nitrogen that is available in soil. Thus, nitrogen is a limiting nutrient for both natural and agricultural eco-systems.
- Nitrogen exists as two nitrogen atoms joined by a very strong triple covalent bond ($N \equiv N$). The process of conversion of nitrogen (N_2) to ammonia is termed as nitrogen-fixation.
- In nature, lightning and ultraviolet radiation provide enough energy to convert nitrogen to nitrogen oxides (NO, NO₂, N₂O).
- Industrial combustions, forest fires, automobile exhausts and power-generating stations are also sources of atmospheric nitrogen oxides.
- Decomposition of organic nitrogen of dead plants and animals into ammonia is called ammonification.
- Some of this ammonia volatilises and re-enters the atmosphere but most of it is converted into nitrate by soil bacteria.
- Ammonia is first oxidised to nitrite by the bacteria Nitrosomonas and/or Nitrococcus.
- The nitrite is further oxidised to nitrate with the help of the bacterium Nitrobacter. These steps are called nitrification. These nitrifying bacteria are chemoautotrophs.
- The nitrate thus formed is absorbed by plants and is transported to the leaves. In leaves, it is reduced to form ammonia that finally forms the amine group of amino acids.
- Nitrate present in the soil is also reduced to nitrogen by the process of denitrification.
- Denitrification is carried by bacteria Pseudomonas and Thiobacillus.



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