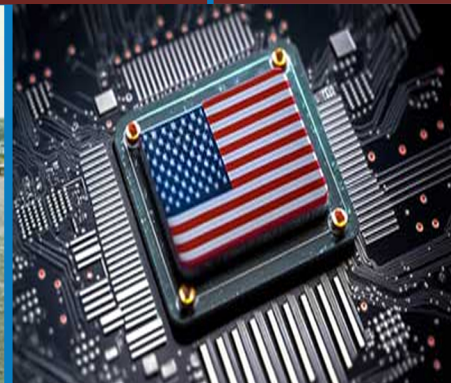EK **BHARAT** SHRESTHA **BHARAT**

Slow Steps to India-China Border Tranquillity

Ek Bharat Shrestha Bharat

World's first 200-meter-long Bamboo Crash Barrier

Is Free Trade moribund in the US?

MEA Invokes Vienna Convention After Pro-Khalistan Protestors Vandalise Indian High Commission In London

world wetlands day celebrated at all 75 ramsar sites in india

Spotlight on exquisite GI-tagged products at the ongoing Tribes India Aadi Mahotsav at DilliHaat

Recalibrate BIMSTEC

Director's Message

Dear Aspirants,

The world has been witnessing unprecedented technological change over the past few decades, impacting every aspect of human life. One area where this technological advance is expected to have far-fetching implications is military strategy and weapons manufacture. One such ground breaking technology is Artificial Intelligence (AI) which is transforming how nations wage war, and its impact is estimated to be profound. The military could make huge advances with their strategic decision-making, including quick and exact scenario analyses and during urgent circumstances, AI can neutralize human biases. AI can enhance the effectiveness of military operations by improving the accuracy of targeting and reducing the risk to military personnel.

AI-enabled systems can revamp the ways how wars are fought. Large, expensive, crewed weapon platform would be replaced by small, cheap, and increasingly capable uncrewed systems. This phenomenon is already being implemented by many nations in the world. For instance, Ukraine has developed sophisticated armed drones that strike with precision, while Russia is using AI "smart" mines that respond to nearby footsteps. Australia boasts of a range of autonomous weapons and vessels that can be used in conflict, including uncrewed Ghost Bat aircraft and Bluebottle surveillance vessels.

The Centre for Artificial Intelligence and Robotics (CAIR), a DRDO laboratory, initiated a project to develop AI-based solutions for signal intelligence which will help to enhance data collection, collation and analysis capabilities for the armed forces. The AI-based tools used in the development of the project will help the defence forces constructively in areas such as decision support, sensor data analysis, predictive maintenance, situational awareness, accurate data extraction, and security. The Indian military has been using AI to analyse large amounts of data from various sources, such as satellite imagery, social media, and communication intercepts. This analysis can help identify potential threats and assist in making more informed decisions. The Indian military has been using AI to develop training programs for its personnel. AI-powered simulations can create realistic scenarios that soldiers can practice in a safe environment, improving their skills and decision-making abilities thereby negating the risk of losing soldiers in a real life scenario.

Indian Army has installed 140 AI-based surveillance systems to access the live feed on the Pakistan and China border. The Line of Control with Pakistan and Line of Actual Control with China are now being continuously monitored by world-class surveillance systems. Indian Army has been closely collaborating with academia and Indian industry, as also DRDO for the realisation of complex AI-based projects. The Army has also started an AI centre at the Military College of Telecommunication Engineering.

However, there are concerns about the impact of AI on military techniques and tactics. One issue is the risk of unintended consequences, such as the potential for autonomous weapons systems to malfunction or be hacked. There is also concern about the ethical implications of using AI in warfare, particularly regarding the ability of machines to make life and death decisions without human intervention. Another ethical concern is the potential for AI systems to discriminate based on race, gender, or other factors. This could lead to unfair targeting of certain groups or individuals and lead to violations of human rights. Also AI-powered surveillance systems could be used to monitor civilian populations or political opponents, leading to violations of privacy and freedom of speech. There is always the risk of non-transparency of data as AI systems are opaque and it needs strong technical know-how to understand how the AI systems are analysing the data.

Finally, the development of AI for military purposes could contribute to an arms race, with countries competing to develop increasingly sophisticated and powerful weapons systems. This could lead to instability and increase the risk of tension among the military super powers of the world.

Though the pros of employing AI in military tactics far outweigh the cons, the ethical implications should be carefully considered while utilising such complex systems.

Best wishes,

Yours sincerely,

K Rajendra Kumar IPS (Retd)

TABLE OF CONTENT

1. NATIONAL

1.1 World Wetlands Day celebrated at all 75 Ramsar sites in India

➢ India has largest network of Ramsar Sites in Asia

➢ Ramsar sites provide a critical ecological network for conservation of global biological diversity and supporting human well-being

- The State Governments and Union Territory administrations celebrated World Wetlands Day (WWD) at all 75 Ramsar sites this year with over 200 events. The National Flag was hoisted at the Ramsar Sites. The wetland pledge was administered during these events. Over 50 activities were held with student engagement in which drawing competition, quiz competition, exposure activities, and bird watching were organized.

- The World Wetlands Day is observed on 2nd February every year all over the world to commemorate the signing of Ramsar Convention on Wetlands of International Importance in 1971. India is a party to the Convention since 1982 and has so far declared 75 wetlands as Ramsar sites covering 23 states and Union Territories.

- The 2023 theme for World Wetlands Day is 'Wetland Restoration' which highlights the urgent need to prioritize wetland restoration. It is a call on an entire generation to take proactive action for wetlands, by investing financial, human and political capital to save the wetlands from disappearing and to revive and restore those that have been degraded.

- India has the largest network of Ramsar Sites in Asia, making these sites a critical ecological network for conservation of global biological diversity and supporting human well-being. The Ministry of Environment, Forest and Climate Change (MoEFCC) launched Mission Sahbhagita in 2022 with a mission of 'a healthy and effectively managed network of 75 wetlands of national and international significance which support water and food security; buffer from floods, droughts, cyclones and other extreme events; employment generation; conservation of species of local, national and international significance; climate change mitigation and adaptation actions; and recognition, conservation and celebration of cultural heritage.'

1.2 Indian Railways to introduce Bharat Gaurav Deluxe AC Tourist Train under 'Ek Bharat Shrestha Bharat' Scheme

- The scheme was launched by the Railway Ministry in November 2021, which allowed private entities to operate theme-based train services across different circuits.

- In Indian Railways there were two segments until now i.e. passenger segments and goods segments but through this scheme one more segment that is third segment for tourism is also added.

- The trains under Bharat Gaurav scheme are not regular trains that will run as per the timetable rather they will be more on the lines of the Ramayana Express being run by the IRCTC.

- The scheme was announced under the theme-based tourist circuit trains. That means the trains under the scheme will cover the places related to a particular theme, such as Guru Kripa trains for covering important places of Sikh culture, Ramayana trains for places connected with Lord Shri Ram, etc.

- These trains will be run by both private players and IRCTC.

- The Southern Railway became the first zone in Indian Railways to get the first registered service provider under the 'Bharat Gaurav' scheme.

- The Shri Ramayana Yatra train will also be run under the Bharat Gaurav scheme from Delhi. It was launched by IRCTC on 21 June and the journey will cover prominent places associated with Lord Rama.

- It allows any operator or service provider, or virtually anyone, to lease trains from Indian Railways to run on a theme-based circuit as a special tourism package.

- Private players and tour operators can procure trains from railways on lease and operate them on any circuit of their choice.

- The core strength of the professionals of the tourism sector would be leveraged to develop or identify tourist circuits and run theme- based trains.

- The tenure of this public-private arrangement is a minimum of two years and maximum of the service life of the coach.

- Under the Bharat Gaurav scheme, the operator holds the freedom to decide the route, the halts, the services provided and the tariff. However, the railways will ensure that there is no abnormality in the prices.

1.3 Ek Bharat, Shreshtha Bharat

- The scheme was launched to celebrate the cultural vibrancy of India while establishing a strong mechanism to inculcate nationalism and cultural awareness among the citizens of our nation

- Its primary objective is to strengthen cultural relations of various regions in the country and to encourage mutual connection between people residing in different states

- The scheme aims at celebrating unity in the diverse culture of the nation and to bolstering sentimental bonds among the people of different states

- Under it rich culture, heritage, customs and traditions of either State will be showcased for enabling people to understand and appreciate the diversity that is prevalent in India, thus fostering a sense of common identity among the citizens

- It aims at conducting various activities throughout the year under this campaign to strengthen sentiments for National Unity between the citizens of states and states governed by the union government

1.4 Prime Minister dedicates to the nation HAL Helicopter Factory - India's largest - at Tumakuru, Karnataka

About HAL Helicopter Factory

- The Greenfield Helicopter Factory, spread across 615 acres of land, is planned with a vision to become a one-stop solution for all helicopter requirements of the country. After initially producing LUHs, the factory will be augmented to produce other helicopters such as Light Combat Helicopters (LCHs) and Indian Multirole Helicopters (IMRHs). It will also be used for Maintenance, Repair and Overhaul of LCH, LUH, Civil Advanced Light Helicopter (ALH) and IMRH in the future. Potential exports of civil LUH will also be catered to from this factory.

- The HAL plans to produce more than 1,000 helicopters in the range of 3-15 tonnes, with a total business of over Rs four lakh crores over a period of 20 years. Besides generating direct and indirect employment, the Tumakuru facility will boost the development of surrounding areas through its CSR activities with large-scale community centric programmes on which the company will spend substantial amounts. All this will result in improvement in the people's lives in the region.

- The proximity of the factory, with the existing HAL facilities in Bengaluru, will boost the aerospace manufacturing ecosystem in the region and support skill & infrastructure development such as schools, colleges and residential areas. Medical and health care would also reach the community residing in the various nearby Panchayats.

- With the establishment of facilities like Heli-Runway, Flight Hangar, Final Assembly Hangar, Structure Assembly Hangar, Air Traffic Control and various supporting service facilities, the factory is fully operational. This factory is being equipped with state-of-the-art Industry 4.0 standard tools and techniques for its operations. This factory will enable India to meet its entire requirement of helicopters without import and giving much needed fillip to the Prime Minister's vision of 'Aatmanirbhar Bharat' in helicopter design, development, and manufacture.

1.5 YUVA SANGAM Portal Launches

- The Yuva Sangam will focus on conducting exposure tours of the youth comprising of students & off-campus youngsters from North Eastern States to other states & vice versa.

- It will provide an immersive, multidimensional experience of various facets-under four broad areas of Paryatan (Tourism), Parampara (Traditions), Pragati (Development) and Paraspar Sampark (People-to-people connect).

- Yuva Sangam will celebrate India`s diversity, rejuvenate the spirit of oneness and highlight the strength of India`s democracy.

- Youth between the ages of 18 and 30 will take part in this programme.

- The main aim of this portal is to build close ties between the youth of the North East Region and the rest of India under the spirit of Ek Bharat Shreshtha Bharat.

- Over 20000 youth will travel across India and gain a unique opportunity for cross-cultural learning.

- This Cultural Exchange Program will also allow youth to celebrate the ancient culture and natural diversity of India.

1.6 Green Steel

- Ministry of Steel is committed to Net-Zero target by 2070. Towards this, in short term (FY 2030), reduction of carbon emissions in steel industry through promotion of energy and resource efficiency, use of renewable energy etc. is the focus. For the medium term (2030-2047), Green Hydrogen and Carbon Capture, Utilisation and Storage (CCUS) technologies are the focus areas to reduce carbon emission. For long term (2047-2070), disruptive alternative technological innovations can help achieve the transition to net-zero. For this purpose, Ministry of Steel is continuously engaging with various stakeholders and members of steel industry for deliberations to assess technology adoption, usage of efficient raw material such as scrap, carbon capture technologies and green hydrogen.

- Commercial production of steel using green hydrogen has not started in the country. However, following 2 pilot projects on CCUS have been undertaken: -

- Tata Steel commissioned a 5 tonnes per day (TPD) carbon capture plant at its Jamshedpur Works.

Other steps taken in the country for promoting decarbonization in steel industry include:

1) Steel Scrap Recycling Policy, 2019 enhances the availability of domestically generated scrap to reduce the consumption of coal in steel making.

2) Ministry of New and Renewable Energy (MNRE) has announced National Green Hydrogen Mission for green hydrogen production and usage. The steel sector has also been made a stakeholder in the Mission.

3) Motor Vehicles (Registration and Functions of Vehicles Scrapping Facility) Rules September 2021, shall increase availability of scrap in the steel sector.

4) National Solar Mission launched by MNRE in January 2010 promotes the use of solar energy and also helps reduce the emission of steel industry.

5) Perform, Achieve and Trade (PAT) scheme, under National Mission for Enhanced Energy Efficiency, incentivizes steel industry to reduce energy consumption.

6) The steel sector has adopted the Best Available Technologies (BAT) available globally, in the modernization & expansions projects.

7) Japan's New Energy and Industrial Technology Development Organization (NEDO) Model Projects for Energy Efficiency Improvement have been implemented in steel plants.

1.7 Department of Animal Husbandry implements various schemes to promote and develop animal husbandry and dairying sector across the country

- Milk Production increases to 221.1 Million Tonnes from 146.31 Million Tonnes in 2014-15 Egg production in the country grows at the rate of 8% per annum.

- The Department of Animal Husbandry and Dairying, Government of India is implementing various schemes to supplement the efforts of States/UTs for promotion and development of animal husbandry and dairying sector across the country:

1) Rashtriya Gokul Mission (RGM),

2) National Programme for Dairy Development (NPDD),

3) Dairy Processing and Infrastructure Development Fund (DIDF),

4) Supporting Dairy Cooperatives and Farmer Producer Organizations engaged in dairy activities (SDCFPO)

5) National Livestock Mission (NLM),

6) Animal Husbandry Infrastructure Development Fund (AHIDF)

7) Livestock Health and Disease Control Programme (LH&DCP) (wherein erstwhile Livestock Health and Disease Control Scheme and National Animal Disease Control Programme were merged with effect from 2021-22)

8) Livestock Census and Integrated Sample Survey (LC & ISS)

- Due to implementation of the aforesaid schemes of the Department of Animal Husbandry and Dairying, Milk Production in the country has increased from 146.31 Million Tonnes in 2014-15 to 221.1

- Million Tonnes in 2021-22 i.e. by 6.38% per annum during the last 8 years. Value of output of milk is more than Rs.9.32 lakh crore during 2021-22 which is higher than the agriculture produce and even more than the combined value of Paddy and Wheat. Egg production in the country has increased from 78.48 billion in 2014-15 to 129.53 billion in 2021-22. Egg production in the country is growing at the rate of 8% per annum.

- According to production data of Food and Agriculture Organization Corporate Statistical Database(FAOSTAT), India is the highest milk producer i.e., rank first position in the world contributing twenty-four percent of global milk production in the year 2021-22.

- The milk production of India has registered fifty-one percent increase during the last eight years i.e., during the year 2014-15 and 2021-22 and increased to twenty-two crore tonne in the year 2021-22.

1.8 Central Government has taken various measures to supplement the efforts of States/UTs including capacity building of Law Enforcement Agencies (LEAs) to deal with cybercrimes

- Police' and 'Public Order' are State subjects as per the Seventh Schedule of the Constitution of India. States/UTs are primarily responsible for the prevention, detection, investigation and prosecution of crimes including cyber crime through their Law Enforcement Agencies (LEAs).

- The Central Government has taken various measures to supplement the efforts of States/UTs including capacity building of LEAs to deal with cybercrimes which, inter-alia include the following:

1) The Ministry of Home Affairs has set up the 'Indian Cyber Crime Coordination Centre (I4C)' to provide ecosystem for tackling all types of cyber crime in the country, in a coordinated and comprehensive manner.

2) The Ministry of Home Affairs has provided financial assistance under the 'Cyber Crime Prevention against Women and Children (CCPWC)' Scheme, to the States/UTs for their capacity building such as setting up of cyber forensic-cum-training laboratories, hiring of junior cyber consultants and training of LEAs' personnel, public prosecutors and judicial officers. So far, cyber forensic-cum-training laboratories have been commissioned in 33 States/UTs.

3) Training curriculum has been prepared for Law Enforcement Agencies personnel, prosecutors and judicial officers for better handling of investigation and prosecution. States/UTs have been mandated to organize training programmes. So far, more than 20,300 LEA personnel, judicial officers and prosecutors have been provided training on cyber crime awareness, investigation, forensics, etc.

4) Ministry of Home Affairs operationalized the National Cyber Crime Reporting Portal www.cybercrime.gov.in to provide a centralized mechanism to the citizens for online reporting of all types of cyber crime incidents, with a special focus on cyber crimes against women and children. Incidents reported on this portal are automatically routed to the State/UT law enforcement agency concerned for taking further steps as per the provisions of the law. A toll-free helpline number '1930' has been operationalized to get assistance in lodging online cyber complaints.

5) The Massive Open Online Courses (MOOC) platform under the I4C called 'CyTrain' portal has been developed. CyTrain portal helps in the capacity building of Police Officers/Judicial Officers through online course on critical aspects of cyber crime investigation, forensics, prosecution etc. along with certification. So far, more than 28,700 Police Officers from States/UTs are registered and more than 7,800 Certificates issued through the portal.

1.9 Steps Taken By Union Government To Increase Water Availability and Promote Conservation Of Water

- The Government of India has initiated number of steps and launched various schemes/ programmes for making availability of water, its conservation and distribution. The details of some of the major schemes/ programmes are as under:

- National Water Mission has been launched with the objective of conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management.

- Under this mission, a campaign namely "Sahi Fasal" has also been initiated to nudge farmers to favour agricultural crops which consume less water and to use water more efficiently in agriculture, as a part of demand side management.

- Also, to promote dialogue and information sharing among participants on variety of water related topics, a monthly seminar series - "Water Talk" has been initiated with intended to create awareness, build capacities of stakeholders and to encourage people to become active participants in the conservation and saving of water.

1) Atal Bhujal Yojana, a Central Sector Scheme, with focus on community participation, demand side interventions and convergence of ongoing schemes for sustainable ground water management is being implemented from 1 April 2020 in seven States Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.

2) Har Khet Ko Pani (HKKP), a component of Pradhan Mantri Krishi Sinchai Yojana (PMKSY), Repair, Renovation and Restoration (RRR) of Water Bodies Scheme was launched which aims to revive irrigation potential by improvement and restoration of water bodies by enhancing the tank storage capacity, along with other multiple objectives such as ground water recharge, increased availability of drinking water, improvement of catchment of tank commands etc.

3) The Atal Mission for Rejuvenation and Urban Transformation (AMRUT) was launched by the Government of India on June 25, 2015 in selected 500 cities and towns across the country for a period of 5 years i.e. from FY 2015-2016 to FY 2019-2020, which has been extended for completing the grounded projects. The Mission focuses on the development of basic urban infrastructure in the Mission cities in the sectors of water supply, sewerage & septage management, storm water drainage, green spaces & parks and non-motorized urban transport.

4) Jal Jeevan Mission-Har Ghar Jal is being implemented by Government of India, in partnership with States since August, 2019, which aims at providing potable water in adequate quantity (55 litres per capita per day) of prescribed quality (BIS:10500) on regular and long-term basis to every rural household through tap water connection, by 2024.

- At the time of announcement of Jal Jeevan Mission in August 2019, 3.23 Crore (17%) rural households were reported to have tap water connections. So far, as reported by States/UTs as on 06.02.2023, around 7.87 Crore rural households have been provided with tap water connections in last three and half years under JJM. Thus, as on 06.02.2023, out of 19.36 Crore rural households in the country, around 11.10 Crore (57%) households are reported to have tap water supply in their homes.

- Jal Shakti Abhiyan-I (JSA-I) was launched in 2019 in 256 water stressed districts to promote water conservation and water resource management by focusing on accelerated implementation of five target interventions, viz., water conservation and rainwater harvesting, renovation of traditional and other water bodies/ tanks, reuse and recharge of bore wells, watershed development and intensive afforestation.

- In 2021, "Jal Shakti Abhiyan: Catch the Rain" (JSA:CTR) was initiated with the theme "Catch the Rain - Where it Falls When it Falls" to cover all the blocks of all districts (rural as well as urban areas) across the country. The focused interventions for JSA includes water conservation and rainwater harvesting, renovation of traditional and other water bodies/ tanks, reuse and recharge of borewells, watershed development and intensive afforestation.

1.10 PM SHRI Schools to showcase the implementation of NEP 2020 and emerge as exemplar schools

- The Cabinet has approved a new Centrally Sponsored Scheme named Pradhan Mantri Schools for Rising India (PM SHRI) on 7th September, 2022. These schools will showcase the implementation of the National Education Policy 2020 and emerge as exemplar schools over a period of time, and also offer leadership to other schools in the neighbourhood. The duration of scheme is from 2022-23 to 2026-27.

- Online portal of PM SHRI schools has already been launched on 03.11.2022. Furthermore, the selection of PM SHRI has been followed by a transparent challenge method, wherein Schools have self-applied on the online portal. Selection is done through a three-stage process with definite time lines, which is as follows: -

Stage-1: States/UTs to sign MoU with Centre laying down the commitments for supporting these schools for achieving specified quality assurance as PM SHRI schools.

Stage-2: In this stage, a pool of schools that are eligible to be selected as PM SHRI Schools has been identified based on prescribed minimum benchmark through UDISE+ data.

Stage-3: This stage is based on the challenge method for fulfilling certain criteria. Only the schools from the above eligible pool of schools compete to fulfil the challenge conditions. Fulfilment of conditions is to certified by states/KVS/JNV through physical inspection. As the schools are selected through challenge method, there would not be any predefined state/UT-wise break-up of schools. States/UTs are to recommend the list of schools to Ministry of education for selection as PM SHRI schools.

For modern, transformation and holistic method of imparting education, the major interventions in the PM SHRI Scheme are:

1. Quality and Innovation (Learning Enhancement Programme, Holistic Progress Card, Innovative Pedagogies, Bagless days, Internships with Local artisans, Capacity building etc.)

2. Beneficiary oriented Entitlements under RTE Act

3. Annual School Grants (Composite School grants, Library grant, Sports grant)

4. Early Childhood Care and Education including Balvatika and Foundational Literacy and Numeracy

5. Equity and Inclusion including provision of safe and appropriate infrastructure for girls and Children with Special Needs (CWSN).

6. Encouraging flexibility in choice of subjects offered to students.

7. Encouraging mother tongue as medium of instruction using technological interventions to help bridge language barriers between teachers and students.

8. ICT, smart classrooms and digital libraries for using digital pedagogy.

9. Strengthening of existing infrastructure

10. Vocational interventions & Enhancing internship/entrepreneurship opportunities especially with local industry. Mapping of skills with developmental projects/nearby industry and develop courses/curriculum accordingly.

1.11 World's first 200-meter-long Bamboo Crash Barrier

"Bahu Balli" installed on the Vani-Warora Highway, Vidarbh, Maharashtra

- An extraordinary accomplishment towards achieving AatmanirbharBharat has been made with the development of the world's first 200-meter-long Bamboo Crash Barrier which has been installed on the Vani-Warora Highway,Vidarbh, Maharashtra.

- This Bamboo Crash Barrier, which has been christened Bahu Balli, underwent rigorous testing at various government-run institutions such as the National Automotive Test Tracks (NATRAX) in Pithampur, Indore and was rated as Class 1 during the Fire Rating Test conducted at the Central Building Research Institute

(CBRI) in Roorkee. Additionally, it has also been accredited by the Indian Road Congress. The recycling value of the bamboo barrier is 50-70% whereas that of steel barriers is 30-50%.

- The bamboo species used in the making of this barrier is Bambusa Balcoa, which has been treated with creosote oil and coated with recycled High-Density Poly Ethylene (HDPE). This achievement is remarkable for the bamboo sector and India as a whole, as this crash barrier offers a perfect alternative to steel and addresses environmental concerns and their aftermath. Furthermore, it is a rural and agriculture-friendly industry in itself making it an even more significant milestone.

1.12 India to have a modern and smart power transmission system; Government accepts the Task Force report

- The country will soon have a modern and smart power transmission system with features such as real-time monitoring and automated operation of grid, better situational assessment, capability to have increased share of renewable capacity in the power-mix, enhanced utilization of transmission capacity, greater resilience against cyber-attacks as well as natural disasters, centralized and data driven decision-making, reduction in forced outages through self-correcting systems etc. These and other

recommendations are part of a report of a task force set up by the Power Ministry in Sep, 2021 under the chairmanship of CMD, POWERGRID to suggest ways for modernization of Transmission Sector and making it smart & future ready. The other members of the Task Force included representatives from State Transmission Utilities, Central Electricity Authority, Central Transmission Utilities, MeiTY, IIT Kanpur, NSGPMU and EPTA

- The Task force in its report has recommended a bouquet of technological and digital solutions which can be adopted to make the state transmission grids future ready. These recommendations have been clubbed under categories of modernization of existing transmission system; use of advanced technology in construction & supervision, operations & management; smart & future-ready transmission system; and up-skilling of workforce. The Task Force has recommended Centralized Remote Monitoring, Operation of Substations including SCADA, Flexible AC Transmission devices (FACTs), Dynamic Line Loading system (DLL), Wide Area Measurement System (WAMS) using PMUs and data analytics, Hybrid AC / HVDC system, Predictive maintenance technique using AI/ML algorithms, HTLS Conductors, Process Bus based Protection Automation and Control GIS/Hybrid Substation, Cyber Security, Energy Storage System and Drones & Robots in construction/inspection of transmission assets. The use of robots is expected to not only minimize human intervention and minimize life risks/hazards but also save time with while ensuring accuracy during construction and maintenance. The Task force also recommended benchmarks for transmission network availability and voltage control based on performance of global transmission utilities.

1.13 Steps by Government to promote renewable energy in the country

The Government has taken several measures to promote renewable energy in the country, including, inter-alia, the following:-

- Permitting Foreign Direct Investment (FDI) up to 100 percent under the automatic route,

- Waiver of Inter State Transmission System (ISTS) charges for inter-state sale of solar and wind power for projects to be commissioned by 30th June 2025,

- Declaration of trajectory for Renewable Purchase Obligation (RPO) up to the year 2029-30,

- Setting up of Ultra Mega Renewable Energy Parks to provide land and transmission to RE developers for installation of RE projects at large scale,

- Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM- KUSUM), Solar Rooftop Phase II, 12000 MW CPSU Scheme Phase II, etc,

- Laying of new transmission lines and creating new sub-station capacity under the Green Energy Corridor Scheme for evacuation of renewable power,

- Notification of standards for deployment of solar photovoltaic system/devices,

- Setting up of Project Development Cell for attracting and facilitating investments,

- Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar PV and Wind Projects.

- Government has issued orders that power shall be dispatched against Letter of Credit (LC) or advance payment to ensure timely payment by distribution licensees to RE generators.

- Notification of Promoting Renewable Energy through Green Energy Open Access Rules 2022.

- Notification of "The Electricity (Late Payment Surcharge and related matters) Rules (LPS rules).

- Launch of Green Term Ahead Market (GTAM) to facilitate sale of Renewable Energy Power through exchanges.

- National Green Hydrogen Mission approved with an aim to make India a global hub for production, utilization and export of Green Hydrogen and its derivatives.

- So far, a total of 174.53 GW capacity from non-fossil fuel based energy resources has been installed in the country as on 31.12.2022, which includes 167.75 GW Renewable Energy and 6.78 GW Nuclear Power capacity.

2. INTERNATIONAL RELATIONS

2.1 Giving International Court of Justice a say could make climate-related processes more justice-oriented

Frame of reference

- The recent resolution sponsored by Vanuatu and adopted unanimously by the United Nations General Assembly (UNGA) asking the International Court of Justice to weigh in on the issue has once again brought the issue of climate change to the forefront of global discussions.

Key Highlights:

- The move reflects the frustration of the international community, especially small island countries, which are facing an existential threat, with the procedures of the global climate agencies, particularly the UNFCCC, which often end up in compromises that delay climate action.

- The advisory jurisdiction permits the ICJ to offer legal guidance to the United Nations General Assembly (UNGA), the Security Council (SC), and other specialized bodies regarding legal questions.

- Although the ICJ's advisory opinions lack binding force, they carry normative weight and provide guidance on relevant issues of international law.

- Moreover, the ICJ's advisory opinion on climate change could prove beneficial in domestic climate litigation.

The Global Consensus on Climate Change:

- The Vanuatu-sponsored proposal, which was adopted unanimously by the UNGA, highlights the growing global consensus on the need for urgent action on climate change.

- The resolution also reflects the frustration of the international community with the procedures of the global climate agencies, particularly the UNFCCC.

- The UNFCCC has been the primary international forum for negotiating global responses to climate change since the 1990s, but its deliberations have often been slow and cumbersome.

- This has led to delays in implementing the necessary measures to mitigate the impact of climate change.

- The Vanuatu-sponsored proposal seeks to address this issue by calling on the International Court of Justice to provide clarity on the legal obligations of countries to protect their citizens from climate impacts.

- This move could set the stage for countries to incorporate climate justice into their legal frameworks, similar to the way the UN Declaration of Human Rights has found resonance in statute books across the world.

The Importance of Climate Justice:

- The Vanuatu-sponsored resolution focuses on the issue of climate justice, which is increasingly becoming a major concern in global discussions on climate change.

- Climate justice refers to the fair distribution of the costs and benefits of climate change mitigation and adaptation efforts, taking into account the fact that the impact of climate change is not evenly distributed.

- Developing countries, which have contributed the least to greenhouse gas emissions, are often the most vulnerable to the impacts of climate change, while developed countries, which have contributed the most to greenhouse gas emissions, are better equipped to deal with the impacts of climate change.

- The use of the vocabulary of rights and justice has given the Vanuatu-sponsored proposal more traction.

- Climate justice is rooted in the idea that countries that have contributed the most to greenhouse gas emissions bear the greatest responsibility for mitigating climate change and helping vulnerable countries adapt to its impacts.

- This idea has gained momentum in recent years, with countries asserting their right to reparations after climate emergencies, such as Pakistan after last year's floods.

Holding Countries and Governments Accountable:

- Holding individual countries or governments accountable for their climate inaction poses significant challenges.

- The issue has been a major stumbling block at several climate meets, and the Paris Agreement, signed in 2015, has a clause specifying that the pact "does not involve or provide a basis for any liability or compensation

- American support for the UNGA resolution was reportedly reluctant, highlighting the challenges of holding countries and governments accountable for their climate inaction.

- The advisory opinion of the International Court of Justice will not be binding, but its pronouncements carry moral weight.

- It could provide clarity on the legal obligations of countries to protect their citizens from climate impacts, which could pave the way for countries to incorporate climate justice into their legal frameworks.

- However, it will be up to individual countries to take concerted action on climate change and ensure that the countries that have contributed the most to greenhouse gas.

Conclusion:

- The issue of whether countries can be sued under international law for failing to avert climate emergencies is a complex one, and the success of the Vanuatu-sponsored resolution highlights the growing global consensus on the need for urgent action on climate change and the importance of addressing the issue of climate justice.

2.2 Is Free Trade moribund in the US?

Frame of reference

- The International Court of Justice's advisory opinion could provide clarity on the legal obligations of countries to protect their citizens from climate impacts, but it will be up to individual countries to incorporate climate justice into their legal frameworks and take concerted action on climate change.

- For decades, the US has been the leader of free trade. However, recent policies suggest a shift towards protectionism and an era of active state intervention in industrial and trade policies.

The Rise of Protectionism in the US

- The US has always been an advocate of free trade, but the most apparent rift in US-professed policies towards free trade is discernible from the Trump administration.

- Trump promised to reduce the US trade deficit with China and moved towards protectionism, reflecting the spirit of mercantilism.

- Similar policies continued under the Biden administration, and some new policy measures have been introduced, which possibly suggest the ushering of an era of even more active state intervention in industrial and trade policies in the US.
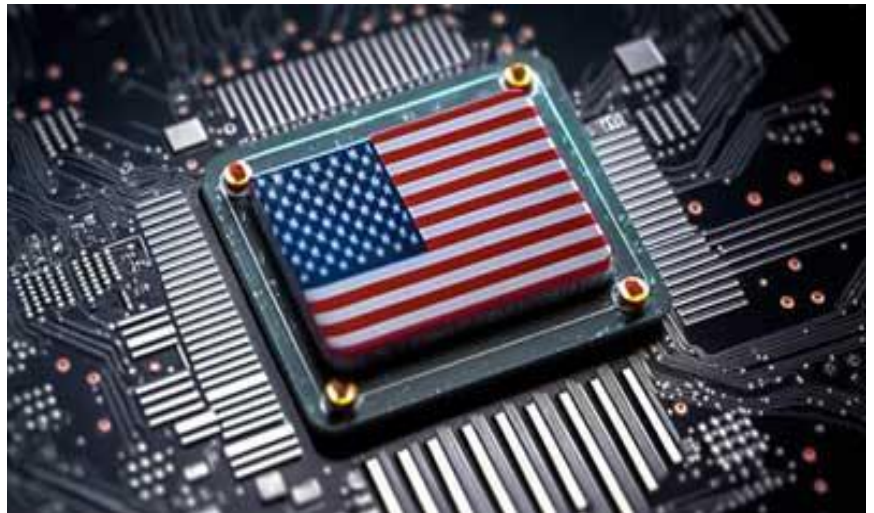
Chips for America Funding Opportunity

- In February 2023, the Biden government launched the first 'Chips for America funding opportunity' to incentivize US firms to manufacture semiconductors or chips domestically.

- The funding opportunity aims to provide fiscal incentives to construct, expand, or modernize commercial facilities for the production of semiconductors.

Shift from Decades-Old Manufacturing Dependency

- The 'Chips and Science Act' of August 2022, which operationalized the 'Chips for America funding opportunity', says that this is an "industrial strategy to revitalize domestic manufacturing, create good-paying American jobs, strengthen American supply chains, and accelerate the industries of the future."

- For decades, US semiconductor firms have depended on countries like Taiwan, South Korea, and China to produce semiconductors.

- However, this policy aims to encourage domestic manufacturing of semiconductors, marking a radical change in how the industry has operated since the 1970s.

Why the change in stance?

Job Losses:

- US job losses due to shifting of manufacturing to China, fuelled by low labour costs and massive production capacity, estimated to be over 3 million after China's entry into the World Trade Organization in 2001.

Intellectual Property and Trade Secrets:

- US companies are concerned about protecting their intellectual property and trade secrets in China due to alleged theft of technology and patent violations by Chinese firms.

- China's government has been accused of forcing foreign companies to reveal their trade secrets to conduct business in the country.

Dependence on Chinese Semiconductors:

- The US has become increasingly dependent on China for the production of semiconductors, which are critical components in many high-tech products.

- This dependence has raised concerns about national security, as well as the potential for China to use its control over the semiconductor supply chain as a tool of economic leverage.

- In recent years, the US has been trying to increase its domestic production of semiconductors in order to reduce its reliance on China.

Countering the state-led industrial policy of China:

- The new 'Chips and Science Act' marks a possible ideological shift in the approach of the US policymakers towards industrial policy, and interestingly, this new shift in policy has driven to a large extent, to counter the state-led industrial policy of China.

Supply Chain Disruptions during Covid-19:

- The Covid-19 pandemic has highlighted the vulnerabilities of global supply chains, especially those that rely heavily on production in China.

- These disruptions have led many countries to reassess their dependence on China for critical goods and materials.

Supply-side economics:

- Instead, ideologically they propagated supply-side economics where the role of the government is to act as a facilitator to improve the overall business environment, which should induce more private investment without directly supporting any particular industry.

- Though it can be argued that the US government has always played an important role in the US economy through its huge research and development expenditures, government purchases, and subsidy programs, it so far did not announce any explicit industrial policy helping specific industries.

WTO and free trade:

- The WTO regime was designed to take the world towards "freer trade," and state intervention in industrial and trade policies was discouraged.

- WTO rules reduced the policy space available for late-industrializing developing countries to a large extent.

- While many developing countries, including India, have voiced their concern over this issue in WTO, the ideological support for free trade mainly came from the developed countries, particularly the US.

The future of the WTO:

- The stance of the US has changed since the Trump administration, and the return of industrial policy in the US may spell a very uncertain future for the WTO in the coming years.

- This is already foreshadowed by the US refusal to elect appellate body members in the WTO, which has crippled the dispute settlement mechanism of the WTO system.

Conclusion:

- The US's shift towards active state intervention in industrial and trade policies, as seen in the "Chips for America funding opportunity," marks a significant departure from its previous stance as a proponent of free trade.

- This ideological shift may have implications for the future of the WTO and could potentially reshape the global trade landscape.

2.3 Slow Steps to India-China Border Tranquillity

Frame of Reference

- India and China appear to be moving towards a new modus vivendi to maintain peace and tranquility along their disputed 4,000 kilometre border.

Key Highlights:

- **In 2020, the older arrangements,** shaped by the agreements of 1993, 1996, 2005, and 2013, fell apart in Ladakh.

- It happened when the **Chinese massed forces in Tibet** and erected blockades at six locations along the Line of Actual Control (LAC) to prevent Indian troops from patrolling the border.

- **A clash in Galwan in June 2020** resulted in the deaths of twenty Indian and four Chinese soldiers, the first such fatalities on the LAC since 1975.

- **The Sino-Indian conflict in December 2022** at Yangtse, north-east of Tawang, suggests that additional measures may be required over the entire LAC, not only in Ladakh.

Attempts to Ease the Border Situation:

- **Officials from both nations** held important discussions during the 26th Meeting of the Working Mechanism for Consultation and Coordination (WMCC) on China-India Border Affairs in Beijing.

- **This was the first in-person meeting** of the WMCC after holding the previous 11 rounds by video conference since the 2020 events.

- **The Indian press release** stated that proposals for disengagement in "remaining areas" were discussed in an "open and constructive manner," which could lead to the restoration of normal bilateral relations.

- **The Chinese release mentioned** the "achievements made in the disengagement of border troops of the two countries at four locations, including Galwan Valley," and that the two sides would work along "established lines" to resolve the western boundary issues.

- While patient diplomacy over the past three years has resulted in the disengagement of forces at four of the six places, the Depsang Bulge and the Charding Ninglung Junction in the Demchok region, **the two critical areas, remain unsettled.**

Measures Restoring Normality:

- While several proposals have been discussed, one proposal being discussed is to establish similar no-patrol zones in other parts of the LAC, which could lead to a package settlement in the remaining areas of Depsang and Charding Nala.

- The discussions have also reportedly focused on upgrading border management by replacing the WMCC with a mechanism that includes both military and civilian officers.

- Confidence-building measures since 1993 were based on the assumption that both sides accepted the LAC's general layout, despite differences regarding around 18-20 points.

- The 1993 and 1996 agreements emphasized the importance of identifying and resolving these differences.

- However, the Chinese abandoned the task of defining a clear LAC without giving any clear reasons, which ultimately resulted in the Galwan Valley incident.

On No-Patrol Zones:

- There is a possibility that no-patrol zones will only apply to areas where both sides have competing territorial claims.

- Prior to 2020, patrols from each side would operate up to the extent of their respective claims, and in case of encountering each other; they would halt and display banners to signal the other side to retreat to their own area.

- Subsequently, disputes were resolved through meetings held at one of the five predetermined border meeting points.

- A Chinese journalist-scholar proposed that the concept of the "zone of actual control" could replace the "line of actual control" in some areas lacking obvious geomorphological features or population.

- In addition, other areas could be defined as a "border belt" if they did not require population adjustments.

- However, the success of the idea depends on the intentions of both sides. If the Chinese aim to use the imprecision of the LAC to keep India off balance, the proposal will not bring much change.

- The idea echoes Chinese Premier Zhou Enlai's original proposal to Indian Prime Minister Jawaharlal Nehru in November 1959, following the Kongka La incident in which ten Indian police personnel were killed and a dozen were captured.

- Zhou suggested that both sides withdraw 20 kilometers from the "so-called" McMahon Line, as well as the "line up to which each side exercises control in the west" to quell the uproar.

Conclusion

- The lack of clarity on the extent of Chinese control in the west has remained a key issue, as no detailed maps have been made available to clarify the matter.

- This has allowed the Chinese to shift their position on the Ladakh border as they see fit, contributing to tensions between India and China.

- However, despite these tensions, officials and ministers from both countries have been engaging in regular meetings.

- The events of 2020 have shattered the trust built over the previous 27 years, from 1993 to 2020. As a result, the threshold for normalizing China-India relations has now risen significantly.

2.4 <u>**Vandalism by Pro-Khalistan Protestors at Indian High Commission in London: What is the Vienna Convention, invoked by MEA**</u>

Frame of Reference

* Recently, a group of pro-Khalistan protesters vandalized the Indian High Commission in London, taking down the Indian flag and replacing it with a Khalistani flag.

Key Highlights:

* The incident was condemned by the Indian government, which summoned the "senior-most" UK diplomat, Deputy High Commissioner, and lodged a strong protest.

* The Indian Consulate in San Francisco was also attacked and damaged by a group of pro-Khalistan protesters on the same day.

* The Ministry of External Affairs (MEA) invoked the Vienna Convention on Diplomatic Relations (1961) and reminded the UK Government of its obligations under the Convention.

Background of Pro-Khalistan Movement:

* The Khalistan movement is a separatist movement that seeks to create an independent state for the Sikh community in the Indian state of Punjab.

* The term Khalistan is derived from the words **"Khalsa,"** which means the pure, and "Stan," which means land, to signify a sovereign Sikh homeland.

* The roots of the Khalistan movement can be traced back to the partition of India in 1947, which created the separate countries of India and Pakistan.

* During this time, the Punjab region was divided between the two countries, with the majority of Sikhs living in India.

* In the following years, many Sikhs felt that their community was marginalized and discriminated against by the Indian government, which they believed favoured the Hindu majority.

* The Khalistan movement gained momentum in the 1970s and 1980s, led by Jarnail Singh Bhindranwale.

* Bhindranwale and his followers occupied the Golden Temple in Amritsar, the holiest shrine of the Sikh religion, in 1984.

* The Indian government responded with a military operation to flush out Bhindranwale and his followers, resulting in a violent confrontation and the deaths of hundreds of people.

- The aftermath of the Operation Blue Star led to a rise in militant activity in Punjab and across India, with many Sikhs taking up arms against the Indian government.

- The movement was dealt a severe blow in 1995 when the Indian government launched a crackdown and arrested many of the militant leaders.

- Since then, the Khalistan movement has been relatively dormant, although there are still some Sikh separatist groups operating in India and abroad.

- The Khalistan movement remains a contentious issue, with many Sikhs calling for greater autonomy and recognition of their distinct identity within India.

- However, the Indian government maintains that the country is a secular democracy and that any attempt to create a separate state based on religious lines is unacceptable.

What is the Vienna Convention and what does it say about the obligations of a "receiving State"?

- The Vienna Convention on Diplomatic Relations (1961) is a treaty that provides a framework for the establishment, maintenance, and termination of diplomatic relations between independent sovereign states.

- It codifies the concept of diplomatic immunity, which grants privileges to diplomats that enable them to perform their functions without fear of coercion or harassment by the host country.

- The Convention affirms the concept of "inviolability" of a diplomatic mission, which is one of the cornerstones of international diplomacy.

- The UK is the host nation where the Indian High Commission is located.

- As per the Vienna Convention, the receiving State has some basic obligations towards the diplomatic missions it hosts on its sovereign territory.

- Article 22 of the Convention deals with obligations with regards to the premises of the mission.

- Part 2 of this article states that "The receiving State is under a special duty to take all appropriate steps to protect the premises of the mission against any intrusion or damage and to prevent any disturbance of the peace of the mission or impairment of its dignity".

- Therefore, the security of any High Commission or Embassy is the responsibility of the host nation.

- While diplomatic missions can also employ their own security, ultimately, the host nation is accountable for security.

- The fact that protestors were able to climb the walls of the High Commission premises indicates a breach of the UK's obligations under the Vienna Convention.

Way Forward:

- It is important for the Indian government and the UK government to engage in constructive dialogue to address the concerns of the Sikh community and prevent any further incidents of violence or vandalism.

- Both countries should reaffirm their commitment to the principles of the Vienna Convention and ensure the security and inviolability of diplomatic missions.

Conclusion:

- The Vienna Convention on Diplomatic Relations (1961) is a crucial treaty that codifies the principles of international diplomacy, including diplomatic immunity and the inviolability of diplomatic missions.

- The recent incidents of vandalism at the Indian High Commission in London and the Indian Consulate in San Francisco highlight the need for host countries to fulfill their obligations towards diplomatic missions, including ensuring their security.

- Breaching these obligations can have severe implications for bilateral relations between countries, which underscores the importance of the Vienna Convention in maintaining peaceful and stable diplomatic relations among nations.

2.5 International Criminal Court issues arrest warrant against Vladimir Putin over Ukraine 'War crimes'

Frame of Reference:

- Recently, The International Criminal Court issued an arrest warrant for Russian President Vladimir Putin on the war crime accusation of unlawfully deporting Ukrainian children.

Key Highlights:

- Moscow dismissed the orders as "void" and War-battered Ukraine welcomed the ICC announcement.

- Neither Russia nor Ukraine is member of the ICC, but Kyiv has accepted the court's jurisdiction.

- Since Russia is not a party to the ICC so it was unclear if or how Mr. Putin could ever end up in the dock.

- Russia denies allegations of war crimes by its troops.

- Since its launch in 2002, the court has issued arrest warrants for three sitting world leaders: Sudan's Omar al-Bashir, Libya's Moammar Gadhafi and now Putin.

- None have stood trial. (Gadhafi was killed and al-Bashir remains at large.)

What can the ICC do?

- The ICC has jurisdiction over four types of crimes: genocide, war crimes, crimes against humanity and crimes of aggression.

- However, with no armed body to enforce its warrants, the ICC has minimal power to arrest people and instead must rely on the security forces of member states.

What is the court's prosecution record?

- With more than 900 staff members and an annual budget of nearly $250 million, 31 cases have gone before the International Criminal Court.

- Its judges have issued 38 arrest warrants, according to the ICC's website.

- Twenty-one of those have led to a suspect being arrested by a member state and held in the court's detention centre.

- The court has issued 10 convictions and four acquittals.

International Court of Justice	International Criminal Court
The International Court of Justice is the **primary judicial branch** of the United Nations. Seated in the Peace Palace in The Hague, Netherlands, the court settles legal disputes submitted to it by states and provides advisory opinions on legal questions submitted to it by duly authorized international branches, agencies, and the UN General Assembly.	The International Criminal Court (ICC or ICCt) is an **intergovernmental organization and international tribunal** that sits in The Hague in the Netherlands. The ICC has the jurisdiction to prosecute individuals for the international crimes of genocide, crimes against humanity, and war crimes.
Subject Matter: settles legal disputes i.e. sovereignty, boundary disputes, maritime disputes, trade, natural resources etc.	**Subject Matter:** Trial criminal offenses i.e. genocide, crimes against humanity, war crimes, crimes of aggression.
Parties: Only states are either members of the United Nation or ICJ or both.	**Parties:** Individuals either ratified members of ICC or accept the jurisdiction of ICC.
Jurisdiction: Contentious Jurisdiction and Advisory opinion	**Jurisdiction:** Criminal prosecution of individuals
Funding: UN Funding **United Nation Judiciary organ**	**Funding :** Member States and voluntary funding from UN and others **Independent organization**

What can be the implications of the Warrants?

- Human rights groups hailed the warrant as an **important step toward ending impunity** for Russian war crimes in Ukraine.

- While an arrest might be unlikely, the warrant will make diplomatic and business endeavors more difficult for Putin and his allies.

- The likelihood of a trial while Putin remains in power appears slim since the court cannot try defendants in absentia, and Russia has said it will not surrender its own officials.

- Putin's isolation in the West deepens, and his movements overseas could be limited.

- If he travels to a state that is a party to the ICC, that country must arrest him according to its obligations under international law.

- It is essential for the international community to dig in for the long term and to send a clear message that they will not sweep these crimes under the carpet and that the perpetrators will be pursued and will one day be brought to justice.

Conclusion:

- During the first 20 years of operations, the **ICC has tried and resolved cases of significance for international justice,** shedding light on the crimes committed by the use of child soldiers, the destruction of cultural heritage, sexual violence, or attacks on innocent civilians.

2.6 China, India and the Promise of the Power of Two

Frame of Reference:

- As two neighboring and ancient civilisations, with a combined population of 2.8 billion, China and India are representatives of developing countries and emerging economies.

- China and India have far more common interests than differences.

Key Highlights:

- The year 2023 marks an important step in India's diplomacy, with its president ship of the Shanghai Cooperation Organisation (SCO) and the G-20.

- The focus is also on China which held "two sessions" recently: the annual sessions of the National People's Congress of the People's Republic of China and the National Committee of the Chinese People's Political Consultative Conference.

Development of China at a Glance:

Steady Economic Growth:

- China's economic strength is steadily reaching new heights.

- In 2022, China's economy grew by 3% with a total of 12.06 million urban jobs added.

- China's GDP increased to 121 trillion yuan (approximately $18 trillion), registering an annual growth rate of 5.2% over the past five years and an annual growth of 6.2% over the past decade with GDP increasing by nearly 70 trillion yuan.

People's well-being:

- As a result of continued efforts of the past eight years, China has historically resolved absolute poverty, with the alleviation of close to 100 million rural residents from poverty.

- Over 70% of the government's expenditure went toward ensuring people's well-being.

- Living standards continue to witness new improvements in China.

Opening up to the World:

- In 2022, China's total volume of trade in goods exceeded 40 trillion yuan, registering an annual growth rate of 8.6%.

- China's actual use of foreign capital was up by 8% and the country remained one of the top destinations for foreign investors.

- The overall tariff level continues to fall, from 9.8% to 7.4%.

- China's doors to the outside world are opening even wider.

Win-win Cooperation:

- In the period 2013-2021, China's contribution to global economic growth averaged 38.6%, higher than that of G7 countries combined (25.7%).

- Ever since China proposed the Global Development Initiative (GDI) in 2021, more than 100 countries have expressed their support and over 60 countries have joined the Group of Friends of the GDI.

China-India Trade Relations:

- China and India are important trading partners, with bilateral trade volume reaching $135.984 billion in 2022.

- Though there is a trade deficit, India's import of equipment and materials from China does reduce the overall cost of "Made-in-India" products.

- It benefits Indian downstream industries and consumers, enhances the competitiveness of Indian exports, and in turn facilitates India's integration into global industrial and supply chains.

- Investments by Chinese enterprises have created a large number of jobs for the Indian people and contributed to India's economic development.

Shanghai Cooperation Organization

About:

- The Shanghai Cooperation Organization (SCO) is a Eurasian political, economic, and security organization that includes China, Russia, Tajikistan, Kazakhstan, Uzbekistan, Kyrgyzstan, India, Pakistan, and Iran.

- It was founded on 15 June 2001 and is headquartered in Beijing, China.

- India and Pakistan joined SCO in 2017 and Iran was admitted as the 9th member of SCO in the 21st annual summit in 2021.

- It is the world's largest regional organization in terms of geographic scope and population, covering approximately 60% of the area of Eurasia, 40% of the world population, and more than 30% of the global GDP.

- India takes over SCO rotating presidency, to host SCO summit of 2023.

Samarkand Declaration:

- The Samarkand declaration was adopted by the council of heads of government of the SCO.

- It pointed out the series of challenges and headwinds to be faced by humanity in the 21st century.

- It mentioned Climate change, Terrorism, Technological disruptions, Global reduction in investment flows, Instability in the supply chain, Increased protectionist measures, and Other barriers to international trade.

Way Forward:

China is advancing modernisation on all fronts:

- The path to modernisation is based on China's practices with a focus on high-quality development.

- It means the modernisation of a huge population, where there is common prosperity for all, material and cultural-ethical advancement, harmony between humanity and nature, and peaceful development.

- This will spell new opportunities to all countries in the world, especially neighboring countries.

- India and China are both in the process of national rejuvenation and a crucial period of modernisation where challenges need to be overcome and problems need to be solved.

Conclusion:

- The development and revitalisation of China and India embody a boost to the force of developing countries.

- It is one that will change the destiny of a third of the world's population and having bearing on the future of Asia and beyond.

2.7 Recalibrate BIMSTEC

Frame of Reference:

- There have long been Indian voices calling for strengthened agricultural cooperation among the countries of South and Southeast Asia in the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), which was founded in 1997.

- However, trade and market integration is an area where the performance of BIMSTEC countries has been subpar.

Key Highlights:

- Trade and investment are major instruments to attain food security across the BIMSTEC member-states, particularly in a climate-affected, post-pandemic world.

- The share of all BIMSTEC countries that include two ASEAN member-states, namely, Thailand and Myanmar in world trade is less than 4 per cent.

- The BIMSTEC intra-regional trade was at $70 billion in 2021, significantly lower than ASEAN's $600 billion, where exports were over $111 billion.

- Home to 1.8 billion people (22 percent of the global population, with a combined GDP of $3.6 trillion), the level of agri-food trade among BIMSTEC countries has been strikingly below potential.

About BIMSTEC

- It is a regional organization comprising seven member-states located in the Bay of Bengal region of South and Southeast Asia.

- The member-states are Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand.

- BIMSTEC was established in 1997 with the aim of promoting regional cooperation in various sectors, including trade, investment, energy, technology, tourism, agriculture, and fisheries.

- The organization's primary objective is to promote economic growth and development in the region through increased cooperation and integration.

- BIMSTEC's activities are focused on enhancing regional connectivity, trade and investment facilitation, energy cooperation, tourism promotion, technology transfer, and people-to-people contacts.

- The organization's activities are guided by its five priority areas, which are trade and investment, connectivity, energy, tourism, and people-to-people contact.

- It has a Secretariat based in Dhaka, Bangladesh, and its member-states meet annually at the BIMSTEC Summit to discuss regional cooperation and development issues.

What are the challenges associated?

Fragmented markets:

- The agri-food sector in BIMSTEC member-states is characterized by fragmented markets.

- This makes it difficult for small farmers to participate in the value chain and access markets.

Limited Infrastructure:

- Limited infrastructure such as roads, storage facilities, and refrigeration units are major impediments to the agri-food sector's development.

- This leads to significant post-harvest losses, which adversely affects farmers' incomes.

Lack of Investment:

- The agri-food sector in BIMSTEC member-states suffers from a lack of investment, both in terms of financial and human capital.

- This has resulted in a lack of innovation, which is essential for value chain integration.

Poor supply chain management:

- Inefficient supply chain management has resulted in high transaction costs, which makes it difficult for small farmers to access markets.

Internal Integration:

- BIMSTEC's progress is hindered by a lack of internal integration; countries adjacent to the Bay of Bengal are less integrated today than they were 50 years ago.

Competition with proliferating regional trading arrangements:

- BIMSTEC agri-food trade is getting more challenging due to competition with proliferating regional trading arrangements, such as the Regional Comprehensive Economic Partnership (RCEP), and bilateral arrangements like the India-Australia free trade agreement (India is a party to no less than 28 bilateral or regional arrangements while Thailand is part of 23 arrangements).

Lack of product standardization and testing:

- BIMSTEC countries still do not have a shared system for product standardisation and testing.

- Lack of such arrangements significantly increases the time and costs of trade that disproportionally affect the agri-food sector.

Measures that can be taken:

Improve infrastructure:

- Investments in rural infrastructure such as roads, storage facilities, and refrigeration units can reduce post-harvest losses and increase farmers' incomes.

Encourage value chain integration:

- Public-private partnerships can be promoted to encourage value chain integration.

- This will help to improve supply chain management and reduce transaction costs.

Provide access to finance:

- Small farmers need access to finance to invest in their farms and participate in the value chain.

- Microfinance institutions can be established to provide this support.

Promote Innovation:

- Research and development can be promoted to encourage innovation in the agri-food sector.

- This will lead to the development of new products, processes, and services that can increase productivity and profitability.

Provide training and education:

- Education and training programs can be established to improve farmers' skills and knowledge of best practices in farming, marketing, and value chain integration.

Institutional changes:

- BIMSTEC needs institutional changes in order to **enhance food safety and health attributes,** which should be driven by mutual recognition and risk-based decision systems and standards that are recognized and credible across member states.

Conclusion:

- By implementing these measures, the agri-food sector in BIMSTEC member-states can be transformed into a dynamic and thriving sector that contributes significantly to the region's economic growth and development.

- A complete overhaul of thinking about agri-food trade within the global value chain framework — that includes an openness on both sides (importing and exporting) and scaling up on attributes like quality, safety, and health as product differentiators is an essential precondition for BIMSTEC to become an effective platform for successful cooperation among the Bay of Bengal countries.

2.8 Saudi-Iranian Normalization: New Challenges Emerge in West Asia

Frame of reference:

- Recently, Saudi Arabia and Iran, represented by their national security advisers, signed an agreement in Beijing, to re-establish diplomatic ties, respect each other's sovereignty and maintain non-interference in the other's domestic affairs.

- This agreement ends seven years of diplomatic estrangement between the two Gulf neighbours.

Background of Relations:

- The rivalry between the two dates back to pre-revolution Iran when they competed with each other for regional dominance.

- After the 1979 revolution brought down the Iranian monarchy and turned the country into a Shia theocratic republic, sectarian and ideological flavors were added to the mix.

- In recent times, it had turned into a cold war with both sides supporting their proxies across West Asia.

- Formal ties between them collapsed in 2016 after the Saudi embassy in Tehran was overrun by protesters following Riyadh's execution of a revered Shia cleric.

- Now, under China's mediation, they have agreed to start a new beginning.

Provisions of Agreement:

- According to reports, Iran has agreed to prevent further attacks against Saudi Arabia, especially those from the Houthi-controlled parts of Yemen (Iran backs Houthis, a Shia militia in Yemen while the Saudis back the government forces).

- Saudi Arabia agreed to rein in Iran International, a Farsi news channel that is critical of the Iranian regime (which the Iranian intelligence has termed a terrorist organization).

- The Foreign Ministers of both countries would meet soon to thrash out the terms of the reconciliation before reopening embassies in each other's capitals in two months.

Why did Saudi Arabia reach out to Iran?

- West Asia has been undergoing strategic realignments in recent years.

- In 2020, the UAE became the first Arab country to normalize relations with Israel in a quarter century.

- In the following years, Israel and Arab countries deepened their partnerships.

- One of the key drivers of these realignments is the U.S.'s deprioritisation of West Asia.

- The U.S. has bigger foreign policy challenges in its hand now such as the Russian war in Ukraine and China's rise in the Indo-Pacific.

- Additionally, relations between Saudi Arabia and the U.S. have been rocky in recent years.

- The bedrock of the partnership was America's security guarantees in return for Saudi oil.

- The U.S. is now one of the top oil producers in the world and is not as dependent on the Gulf Arabs as it used to be during the Cold War.

- This allowed American Presidents to expedite the U.S.'s deprioritisation of the region.

- When Saudi oil facilities were attacked in 2019 (for which Iran was widely blamed), the U.S. looked away.

- This seems to have prompted the Saudis to look for alternative solutions for the Iran problem.

- The solution they came up with was to reach out to the Iranians.

What led Iran to accept the deal?

- Iran is going through one of the toughest phases of economic isolation and domestic pressure.

- Tehran knows that getting a reprieve from Western sanctions is not a near-term possibility and at home, despite its crackdown, protests refuse to die down.

- Its economy is deteriorating and its currency is struggling.

- Iran wanted Chinese investments and support for its currency.

- Therefore, a deal with Saudi Arabia, under China's mediation, could open economic lifelines for Iran.

- And strategically, Iran knows that such a deal could complicate American efforts to rally Arab countries and Israel against it.

- So economically and strategically, reconciliation is beneficial for Tehran.

What does China gain from the deal?

- China has economic, regional and strategic interests in playing the role of a peace broker in West Asia.

- China is the world's largest oil buyer and stability in the energy market is essential for its continued rise.

- Regionally, the agreement marks China's arrival as a major power in West Asia.

- If one looks at all the major peace initiatives in the region in the post-War world, the U.S. was a constant presence.

- But in the Saudi-Iran reconciliation, the U.S. is absent.

- This points to larger changes under way in the global order.

- Besides, China is also trying to send a clear message to countries in the Global South.

How does the U.S. look at the deal?

- U.S. officials have welcomed the reconciliation.

- The public narrative is that peace between two of the major rival powers in West Asia would help stabilize the region and benefit the global energy market.

- But from a strategic point of view, the U.S. would be facing unpleasant questions about the agreement.

What are the diplomatic challenges?

- Regional security needs the revival of the nuclear agreement, the Joint Comprehensive Plan of Action (JCPOA), and the management of Israel's aggressiveness.

- Although doubts remain on whether the U.S.'s sharply polarized domestic scene will allow such an agreement which would dilute sanctions on Iran.

- Israel's domestic politics, also deeply polarized and dominated by the extreme right wing, is also expected to obstruct the renewal of the JCPOA and maintain a hostile posture towards Iran.

- Saudi-Iran differences will be difficult to resolve: they result from Saudi Arabia's deep sense of strategic vulnerability vis-à-vis its northern neighbor and concerns that might destabilize regional states through the use of Shia proxies.

- Iran will need to play a more proactive role to assure its neighbour of its benign intentions, an effort that would gain credibility with China's active engagement with the two regional powers.

Way Forward:

- The agreement addresses the most serious regional confrontation it reduces regional tensions and puts in place the bases for further dialogue on improving relations and engaging on contentious issues.

- China has affirmed that its role in West Asian affairs is likely to get more active and substantial.

- This poses challenges for Indian diplomacy.

- However, recognising that the management of its ties with China remains its diplomatic priority, India will need to engage with China in West Asia where they have a broad gamut of shared interests in energy security, free and open sea lanes, logistical connectivity, and, above all, regional stability.

- Here, they can work together to further mutual and regional interests.

Conclusion:

- China's increase of influence in the Middle East is not a theory anymore, but is happening today in practice.

2.9 India's New Naval Base in the Andaman Islands Will Compel Beijing to Reevaluate its Strategic Approach

Frame of Reference:

- The Indian government has embarked on a bold, imaginative, and strategic initiative by quietly constructing a comprehensive naval base on Great Nicobar Island.

Key Highlights:

- Positioned squarely at the entrance to the Malacca Straits and just 90 miles from the tip of Indonesia, this move is akin to exposing the queen in a game of chess to directly threaten the opposing king.

- It poses an immediate challenge to China's expansion into the Indian Ocean, stretching all the way to Djibouti and Gwadar.

- Establishing a naval base on Great Nicobar would serve as a crucial element in a larger maritime strategy to counter Chinese aggression in the Himalayas.

- Despite importing over 65% of its oil, China remains deeply vulnerable due to its dependence on imported oil for its Indian Ocean lines of communication.

- Given this vulnerability, one might expect Beijing to approach the Himalayan LAC with caution.

- However, China appears to firmly believe that India is entrenched in a shortsighted land-centric strategy and ignores the strategic advantages offered by its maritime geography.

Tactical Scenario:

- The Malacca Straits and South China Sea's tactical scenario is currently influenced by the intelligence sharing and communications agreements established by the Quad.

- These agreements would be activated in times of crisis, giving India access to the entire tactical picture in the Indian Ocean and South China Sea.

- In response to an aggressive move by China on the northern LAC, India could threaten to block China-bound tankers in the Malacca Straits.

- With its new base in Great Nicobar, India could utilize fighter aircraft directed by its own air early warning system to achieve information dominance over the Malacca Straits.

- If the PLA attempts to send a task force to investigate the tanker stoppage, they would fall into the trap of a strategically constructed "killing ground" dominated by Indian aircraft and missile-armed ships and submarines.

Tactical Calculations:

- Whether or not India is willing to commit to a new oceanic strategy to replace its tired land-centric approach will determine the success of the plan.

- The establishment of a new base in Great Nicobar could either serve as a minor reconnaissance base or as a full-fledged Pearl Harbour, depending on India's political intentions.

- The latter would provide a strong enough presence to deter Chinese aggression and risk of escalation with India.

- This strategy aligns with the current revolution in military affairs, where information dominance and denial of information to the enemy are crucial for victory.

- With a base in Great Nicobar, India would have access to the Malacca Straits, just a hundred miles away, while the nearest Chinese base in Sanya would be 1,500 miles away.

- It is rumoured that the Chinese have awarded a major dredging contract off Gwadar and that their intention is to operate an aircraft carrier in support of Djibouti and base it in Gwadar.

- With access to the Malacca Straits in Indian hands, these deep laid plans would blow away in the wind.

Strategic Rules Governing War:

- India's bold action illustrates once again that the strategic rules governing war have not changed over the years.

- Throughout history, great military commanders like Alexander the Great and Napoleon have always fought on grounds of their own choosing.

- Similarly, at sea, choosing the battleground means creating a dominant battlespace where information dominance is achieved, and the enemy is blinded.

- Under these conditions, the Chinese numerical advantage becomes irrelevant, as demonstrated by the recent conflict in Ukraine.

- In Ukraine, the local satellite information is made available right down to the platoon commander's level, on the cell phone via US satellite internet.

Conclusion:

- In the current state of affairs between India and China, there is a fear that China could potentially overwhelm India if it chooses to do so.

- This fear is not unfounded and is based on tactical calculations.

- However, this dynamic could change with India's strategic move. The downstream effect will be seen in the coming years when China begins to treat India as an equal, because again, tactical calculation will make the truth obvious in Beijing.

3. ECONOMY

3.1 Centre formulates 'Action Plan for Champion Sectors in Services' to give focused attention to 12 identified Champion Services Sectors

- Centre has formulated 'Action Plan for Champion Sectors in Services' to give focused attention to 12 identified Champion Services Sectors, namely, Information Technology & Information Technology enabled Services, Tourism & Hospitality Services, Medical Value Travel, Transport & Logistics Services, Accounting and Finance Services, Audio Visual Services, Legal Services, Communication Services, Construction and Related Engineering Services, Environmental Services, Financial Services and Education Services and Rs. 5000 Crores have been earmarked to support sectoral initiatives of the Nodal Ministries/Departments identified for these sectors.

Government of India follows a multipronged strategy in order to promote trade in services comprising the following:

1) Negotiating meaningful market access through multilateral, regional and bilateral trade agreements.

2) Trade promotion through participation in and organization of international fairs/exhibitions like the Global Exhibition on Services, Higher Education Summit etc. Focused strategies are undertaken for specific markets and sectors.

3) Addressing domestic sectoral challenges and difficulties which are identified through periodic consultations with the stakeholders. Moreover, efforts are made to engage with the concerned Ministries/Departments to pursue a domestic reform agenda to make the services sector competitive globally.

4) Bureau of Indian Standards (BIS) has set up a dedicated Services Sector Division Council (SSDC) to formulate Indian Standards in various Services Sectors, especially Champion Services Sectors. Wherever possible, the Indian Standards are harmonized with international standards for ensuring that quality of services match global expectations. BIS has already published 143 standards on services till Jan.' 2023

5) Districts as Export Hubs Initiative highlights the need to channelize the potential and diverse identity in each District of the country to make them export hubs. Under this initiative, the Department of Commerce through Directorate General of Foreign Trade (DGFT) works with the States/UTs and the districts directly to create institutional mechanisms to facilitate exports of identified products/services from the districts. Products and services with export potential have been identified in all districts of the country in consultation with all the stakeholders including the States/UTs.

3.2 Centre takes proactive steps to promote the GI tagged products in the global market

- The Directorate General of foreign Trade (DGFT) is the agency of the Ministry of Commerce and Industry of the Government of India, responsible for execution of the import and export Policies of India with the main objective of promoting India's exports. DGFT plays a very important role in the development of trading relations with various other nations.

- Further, the Government has established various Export Promotion Councils (EPCs) to cater to the specific requirements of different export products and thus, to help and assist Indian exporters by providing access to international markets, promoting Indian products through various activities and increasing the overall exports from India. The councils are formed as non-profit organizations under the Companies Act / Societies Registration Act. In addition to these councils, some export industries have Commodity Boards and Export Development Authorities which were set up through special Acts passed in the Parliament.

- FIEO (Federation of Indian Export Organisations) is the apex trade promotion organisation in the country, which was set up by the Ministry of Commerce and Industry, and the private trade and industry segment. The organisation is responsible for representing and assisting Indian entrepreneurs and exporters in foreign markets. It acts as the crucial interface between Indian exporters, Central Government, State Governments, financial institutions, ports, railways, surface transport and other concerned stakeholders.

- Among the products promoted through these export promotion organisations, there are some categories for which GI tag has been granted.

Some of the initiatives taken by Government to promote the GI tag products in the global market are as under:

i.   APEDA (Agricultural and Processed Food Products Export Development Authority) has taken initiative to promote products having registered geographical indications (GI) in India by organizing Virtual Buyer Seller Meets on Agricultural and Food products GI with UAE, USA and Qatar in association with the Indian Missions.

ii.   APEDA organized GI Mango Promotion Programme and Tasting Event in Belgium in association with Embassy of India, Brussels on 17th June, 2022. APEDA also facilitated GI Mango promotion Programme at Copenhagen Denmark in association with Embassy of India at Copenhagen.

iii. APEDA facilitated export of GI Products to different destinations. Notable shipments of GI products in 2021 included export of Naga Mircha (King Chilli) from Nagaland to UK, Black Rice from Manipur to the United Kingdom, Assam Lemon to the United Kingdom and Italy, three GI varieties of Mango (Fazli, Khirsapati, and Laxmanbhog) from West Bengal and one GI variety of Mango (Zardalu) from Bihar to Bahrain and Qatar.

iv.   APEDA organized in-store promotional programmes in importing countries in association with foreign retailers to enhance exports.

v.   DPIIT (Department for Promotion of Industry and Internal Trade) organized the "India Geographical Indications (GI) Fair 2022" from 26th - 28th August, 2022 through Export Promotion Council for Handicrafts (EPCH) at India Expo Centre & Mart, Greater Noida, to promote GI products in India and abroad.

vi.   DPIIT recently set up a pavillion for GI products in India International Trade Fair (IITF), Delhi from November 14th to 27th, 2022.

vii. DPIIT organized various GI Promotion Programmes/Exhibitions/ Conferences/ Buyer Seller Meets/ Workshops with focus on GI Products to boost its sale in India as well abroad.

List of some of the export promotion organisations in the country which includes products that have got GI tag, is as under:

1. Agricultural and Processed Food Products Export Development Authority
2. Apparel Export Promotion Council
3. Carpet Export Promotion Council
4. Cashew Export Promotion Council of India
5. Coffee Board
6. Coir Board
7. Council for Leather Exports
8. Export Promotion Council for Handicrafts
9. Gem and Jewellery Export Promotion Council
10. Handloom Export Promotion Council
11. Indian Silk Export Promotion Council
12. Jute Products Development & Export Promotion Council
13. Rubber Board
14. Shellac and Forest Products Export Promotion Council
15. Spices Board
16. The Cotton Textiles Export Promotion Council
17. Tea Board
18. Handicrafts Business Promotion

3.3 Employment opportunities created in MSMEs under the PMEGP Programme of KVIC for assisting entrepreneurs in setting up of new units in the non-farm sector

- Ministry of MSME, through Khadi and Village Industries Commission (KVIC), is implementing Prime Minister's Employment Generation Programme (PMEGP) for assisting entrepreneurs in setting up of new units in the non-farm sector. It aims to bring together widely dispersed traditional artisans/ rural and urban unemployed youth and give them self-employment opportunities to the extent possible, at their doorstep.

- Under PMEGP, General Category beneficiaries can avail of Margin Money (MM) subsidy of 25% of the project cost in rural areas and 15% in urban areas. For beneficiaries belonging to special categories such as Scheduled Castes, Scheduled Tribes, OBCs, Minorities**,** Women, Ex-servicemen, Physically Handicapped, beneficiaries belonging to Northeastern Region, Hill and Border areas, etc., the Margin Money subsidy is 35% in rural areas and 25% in urban areas. The maximum cost of project is Rs.50 lakh in the manufacturing sector and Rs.20 lakh in the service sector.

- There is no downfall in employment generated during 2021-22 as compared to 2018-19 under PMEGP. In fact, there has been an increase of ~40% in employment generated under PMEGP from 587,416 in 2018-19 to 825,752 in 2021-22.

Following steps are being taken by KVIC to generate more employment opportunities in the country:

- Awareness camps, workshops and exhibitions at all levels are being organized in order to propagate the KVI schemes for generation of employment opportunities.

- Publicity of KVI schemes through print and electronic media. To supplement the income of farmers, adivasis and unemployed youth of the country, KVIC launched Honey Mission during 2017 - 18. Under Honey Mission, every person is provided 10 bee boxes with live bee hives.

- Under Kumbhar Sashaktikaran Programme, KVIC is uplifting rural pottery artisan's livelihood by providing skill upgradation training and providing new home scale energy efficient equipment like electric pottery wheels, blunger, pug mill, kiln etc. for producing good quality of products.

- The Government has undertaken various digital initiatives for the promotion of digital empowerment and enabling the ease of doing business of MSMEs. These inter-alia include Udyam Registration portal for online registration, Champions Portal for grievance redressal of MSMEs, Government e-Marketplace (GeM) for online procurement, Trade Receivables Discounting System (TReDS) for discounting invoices and msmemart.com for facilitating online marketing support. In addition, MSME SAMBANDH for monitoring of procurement by Central Public Sector Enterprises (CPSEs) from Micro and Small Enterprises (MSEs) and MSME SAMADHAAN portal for filling applications regarding delayed payments by Central Ministries / Departments / CPSEs / State Governments, etc. Further, Ministry of MSME has included 'Digital MSME Scheme' under the MSME Champions Schemes to increase awareness, use of cloud based digital tools, for digital empowerment of MSMEs in the country.

3.4 Cabinet approves strengthening cooperative movement in the country and deepening its reach up to the grassroots

- Establishing viable Primary Agricultural Credit Societies (PACS) in each uncovered Panchayat, viable dairy cooperatives in each uncovered Panchayat/village and viable fishery cooperatives in each coastal Panchayat/village as well as Panchayat/village having large water bodies, and strengthening the existing PACS/dairy/fishery cooperative societies.

- Initial target to establish 2 lakh multipurpose PACS/ Dairy/ Fishery Cooperatives in next five years.

- Plan to be implemented with the support of NABARD, National Dairy Development Board (NDDB) and National Fisheries Development Board (NFDB) through convergence of various schemes of Ministry of Fisheries, Animal Husbandry & Dairying by leveraging the 'whole-of-Government' approach.

- Will enable PACS/dairy/fishery cooperative societies to setup and modernize necessary infrastructure to diversify their business activities.

- Will provide farmer members with requisite forward and backward linkages to market their produce, enhance their income, obtain credit facilities and other services at village level

- The Union Cabinet, chaired by the Hon'ble Prime Minister Shri Narendra Modi, has approved strengthening cooperative movement in the country and deepening its reach up to the grassroots. Ministry of Cooperation has formulated a plan to establish viable PACS in each uncovered Panchayat, viable dairy cooperatives in each uncovered Panchayat/village and viable fishery cooperatives in each coastal Panchayat/village as well as Panchayat/village having large water bodies, and strengthen the existing PACS/dairy/fishery cooperatives through convergence of various schemes of Ministry of Fisheries, Animal Husbandry & Dairying by leveraging the 'whole-of-Government' approach. Initially, 2 lakh PACS/ Dairy/ Fishery cooperatives would be established in next five years. The action plan for implementation of the project shall be prepared by NABARD, National Dairy Development Board (NDDB) and National Fishery Development Board (NFDB).

The following schemes have been identified for convergence under the current plan:
a. Department of Animal Husbandry and Dairying:
   i. National Programme for Dairy Development (NPDD), and
   ii. Dairy Processing & Infrastructure Development Fund (DIDF)

b. Department of Fisheries:
   i. Pradhan Mantri Matsya Sampada Yojana (PMMSY), and
   ii. Fisheries and Aquaculture Infrastructure Development (FIDF)

- This would provide the farmer members all over the country with requisite forward and backward linkages to market their produce, enhance their income, obtain credit facilities and other services at village level itself. Those primary cooperative societies which cannot be revived will be identified for winding up, and new primary cooperative societies would be established in their area of operation.

- Further, establishing new PACS/dairy/fishery cooperative societies would generate employment opportunities in rural areas, which would have multiplier effect for the rural economy. The plan would also enable farmers to realize better prices for their products, expand the size of their markets and weave them seamlessly into the supply chain.

- A high level Inter-Ministerial Committee (IMC) under the chairmanship of Home & Cooperation Minister with Minister of Agriculture and Farmers Welfare; Minister for Fishery, Animal Husbandry and Dairying; Secretaries concerned; Chairman NABARD, NDDB and Chief Executive NFDB, as members has been constituted and empowered to take necessary steps, including suitable modifications in the guidelines of the schemes identified for convergence, for smooth implementation of the plan. Committees at National, State and District levels have also been constituted to ensure focused and effective execution of the action plan.

- In order to increase the viability of PACS and diversify their business activities to make them vibrant economic entities at Panchayat level, model byelaws of PACS have been prepared by the Ministry after consultation with all the stakeholders. These Model byelaws of PACS will enable them to undertake more than 25 business activities which, inter alia, include dairy, fishery, setting up of godowns, procurement of foodgrains, fertilizers, seeds, LPG/CNG/Petrol/Diesel distributorship, short-term & long-term credit, custom hiring centers, common service centers, Fair Price Shops, community irrigation, Business Correspondent activities, Common Service Centre, etc. The model byelaws have been circulated to all the States/ UTs on 5th January, 2023 for their adoption by PACS after making suitable changes as per respective State Cooperative Acts.

- A national cooperative database is also being prepared by Ministry of Cooperation where country-wide mapping of cooperatives at Panchayat and village level is being carried out with the support of Registrar of Cooperative Societies of States/ Union Territories. A comprehensive database of PACS has been developed in January, 2023 and a database of primary dairy/ fishery cooperative societies would be developed by end of February. This exercise would provide a list of Panchayats and villages not served by PACS, dairy and fishery cooperative societies. The national cooperative database and the online central portal would be utilized for real time monitoring of the formation of new cooperative societies.

- PACS / dairy / fishery cooperative societies would be linked with their respective District and State level Federations. By leveraging the 'whole-of-Government' approach, these societies will be able to set up and modernize necessary infrastructure for diversifying their activities, like milk testing laboratories, bulk milk coolers, milk processing units, construction of biofloc ponds, fish kiosks, development of hatcheries, acquiring deep sea fishing vessels, etc.

- Primary Agricultural Credit Societies (PACS), around 98,995 in number and having a member base of 13 crore, constitute the lowest tier of the Short-Term Cooperative Credit (STCC) structure in the country, providing short-term and medium-term credit and other input services, like seed, fertilizer, pesticide distribution, etc. to member farmers. These are refinanced by NABARD through 352 District Central Cooperative Banks (DCCBs) and 34 State Cooperative Banks (StCBs).

3.5 TRIFED's TRIBES India store products tagged with One District One Product (ODOP) and Geographical Indication (GI)

- Move to enable market outreach and procurement of handlooms and handicrafts One District One Product (ODOP) and Geographical Indication (GI) stakeholders can access district specific art and craft

- The One District One Product (ODOP) programme under Department of Commerce (DoC) and Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry is aimed at creating sustainable employment at the district level while promoting holistic socio-economic development. The idea is to select, brand, and promote one product from each district of the country.

- In pursuance of the Prime Minister, Shri Narendra Modi's clarion call on Aatma Nirbhar Bharat and with India's current G20 Presidency, several initiatives are being undertaken by DPIIT, Government of India. In addition, Union Minister of Commerce & Industry, Shri Piyush Goyal, at the launch of the ODOP Catalogue, requested every organisation to work in collaboration with the programme. This will help promote indigenous products from each district of the nation.

- To further this vision, ODOP mapped and tagged the overlapping tribal products at the TRIBES India store at the ongoing Aadi Mahotsav organized by Tribal Co-operative Marketing Federation of India (TRIFED) from 16-27 February, 2023 at Major Dhyan Chand National Stadium, New Delhi. The ODOP and GI x TRIFED product launch was held at the Major Dhyan Chand National Stadium during the ongoing Aadi Mahotsav.

- On the occasion, Smt. Supriya Devasthali, Director, DPIIT delivered a special address at the ODOP and GI x TRIFED launch and appreciated the diverse collection of products on display, from across the country. She highlighted that this collaboration with TRIFED is a landmark step to promote the tribal products that come under the ambit of ODOP, and more than 100 Tribes India's stores in the country will join this movement to be vocal for local and make for the world. She also mentioned that platforms like the Aadi Mahotsav are crucial in realizing the vision of Atmanirbhar Bharat and a collaboration with TRIFED will further add value to the initiatives being taken by ODOP.

- A diverse collection of tribal products representing all parts of the country are available at TRIFED's TRIBES India Retail store. The ODOP and GI tagging was done for a range of products, including Kullu Shawl from Kullu, Himachal Pradesh, Darjeeling Tea from Darjeeling, West Bengal, Blue Pottery from Jaipur, Rajasthan, Bidriware from Bidar, Karnataka, Pattachitra paintings from Puri, Odisha, Bagh Prints from Dhar, Madhya Pradesh, Coffee from Wayanad, Kerala, Bastar Craft from Kondagaon, Chattisgarh & Rice-Jeeraphool from Balrampur, Chhattisgarh. The tagging is intended to create awareness about the sources of products representing different districts of India.

- ODOP plans to further this campaign by engaging other such stores and emporiums that have overlaps with the products under ODOP to boost the morale of artisans and weaver clusters by giving them a larger platform to display their craft and bringing it to the forefront.

3.6 Combined Index of Eight Core Industries (ICI) increases by 7.8 per cent (provisional) in January 2023 as compared to the Index of January 2022

- Production of Fertilizers, Coal, Electricity, Steel, Natural Gas, Cement and Refinery Products increased in January 2023 over the corresponding month of last year.

- The combined Index of Eight Core Industries (ICI) increased by 7.8 per cent (provisional) in January 2023 as compared to the Index of January 2022. The production of Fertilizers, Coal, Electricity, Steel, Natural Gas, Cement and Refinery Products increased in January 2023 over the corresponding month of

last year. ICI measures combined and individual performance of production of eight core industries viz. Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity. The Eight Core Industries comprise 40.27 percent of the weight of items included in the Index of Industrial Production (IIP). Details of annual and monthly indices and growth rates are provided at Annex I & II respectively.

- The cumulative growth rate of ICI during April-January 2022-23 was 7.9 per cent (provisional) as compared to the corresponding period of last year.

The summary of the Index of Eight Core Industries is given below:

- **Coal -** Coal production (weight: 10.33 per cent) increased by 13.4 per cent in January, 2023 over January, 2022. Its cumulative index increased by 16.1 per cent during April to January 2022-23 over corresponding period of the previous year.

- **Crude Oil -** Crude Oil production (weight: 8.98 per cent) declined by 1.1 per cent in January, 2023 over January, 2022. Its cumulative index declined by 1.3 per cent during April to January, 2022-23 over the corresponding period of previous year.

- **Natural Gas -** Natural Gas production (weight: 6.88 per cent) increased by 5.3 per cent in January, 2023 over January, 2022. Its cumulative index increased by 1.4 per cent during April to January, 2022-23 over the corresponding period of previous year.

- **Petroleum Refinery Products -** Petroleum Refinery production (weight: 28.04 per cent) increased by 4.5 per cent in January, 2023 over January, 2022. Its cumulative index increased by 5.4 per cent during April to January, 2022-23 over the corresponding period of previous year.

- **Fertilizers -** Fertilizers production (weight: 2.63 per cent) increased by 17.9 per cent in January, 2023 over January, 2022. Its cumulative index increased by 10.5 per cent during April to January, 2022-23 over the corresponding period of previous year.

- **Steel** - Steel production (weight: 17.92 per cent) increased by 6.2 per cent in January, 2023 over January, 2022. Its cumulative index increased by 7.1 per cent during April to January, 2022-23 over the corresponding period of previous year.

- **Cement** - Cement production (weight: 5.37 per cent) increased by 4.6 per cent in January, 2023 over January, 2022. Its cumulative index increased by 10.0 per cent during April to January, 2022-23 over the corresponding period of previous year.

- **Electricity -** Electricity generation (weight: 19.85 per cent) increased by 12.0 per cent in January, 2023 over January, 2022. Its cumulative index increased by 10.1 per cent during April to January, 2022-23 over the corresponding period of previous year.

3.7 Wheat crop normal in all major states

- Crop prospects assessed by the DA&FW Monitoring Committee at a recent meeting held at ICAR Institute in Karnal.

- A meeting of the Committee constituted by the Department of Agriculture & Farmers' Welfare (DA&FW) to monitor the situation of Wheat crop was held recently at ICAR- Indian Institute of Wheat and Barley Research, Karnal. Experts from IMD, ICAR, State Agricultural Universities (SAUs), major wheat growing states and the senior state government officials attended the meeting along with the officials from DA&FW. The condition of wheat crop was presented and discussed in detail by the states of Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh, which account for more than 85% of wheat acreage.

- The Committee assessed that as on date the wheat crop condition is normal in all major wheat growing states. Due to intensive efforts of ICAR and SAUs, large numbers of terminal heat stress tolerant varieties were developed and are now under cultivation in an estimated area of more than 50% particularly in North Western plain zone. Also, about 75% area is under early and timely sowing conditions in Haryana and Punjab and therefore, the crop area with early sowing, will not be affected by heat conditions in the month of March.

- IMD in collaboration with All India Coordinated Research Project on Agro Meteorology (AICRPAM) located in ICAR-CRIDA, Hyderabad is issuing agro advisories twice a week on Tuesday and Thursday through network of District Agro Meteorological Units (DAMUs) which are part of KVKs across the country. ICAR- Indian Institute of Wheat and Barley Research, Karnal provides necessary crop specific advisories to the farmers who are associated with either KVKs through mobile apps or with the State Agriculture Departments.

- At the Ministry of Agriculture & Farmers' Welfare, Crop Weather Watch Group Meetings are being conducted every week to monitor the crop situation involving related Departments and Ministries of Central and State Governments.

- It was also decided that all extension agencies from Central and State Governments along with ICAR/SAUs should visit the farmers' fields regularly and provide timely advisories to the farmers, wherever heat stress conditions occur.

3.8 Centre releases guidelines for celebrities, influencers, and virtual influencers on social media platform

- Disclosures must be clear, prominent, and extremely hard to miss in the endorsement: Department of Consumer Affairs

- The Department of Consumer Affairs, under the Ministry of Consumer Affairs, Food and Public Distribution, has released a set of guidelines called "Endorsements Know-hows!" for celebrities, influencers, and virtual influencers on social media platforms. The guidelines aims to ensure that

individuals do not mislead their audiences when endorsing products or services and that they are in compliance with the Consumer Protection Act and any associated rules or guidelines.

- The guidelines state that endorsements must be made in simple, clear language, and terms such as "advertisement," "sponsored," "collaboration" or "paid promotion" can be used. Individuals must not endorse any product or service that they have not personally used or experienced or in which due diligence has not been done by them.

- The department has observed that there is confusion regarding which disclosure word to use for what kind of partnership. Therefore, for paid or barter brand endorsement, any of the following disclosures may be used: "advertisement," "ad," "sponsored," "collaboration," or "partnership." However, the term must be indicated as hashtag or headline text.

- The guidelines specify that individuals or groups who have access to an audience and the power to affect their audiences' purchasing decisions or opinions about a product, service, brand, or experience, because of the influencer's/celebrity's authority, knowledge, position, or relationship with their audience, must disclose.

- The guidelines state that the disclosure must be placed in the endorsement message in a manner that is clear, prominent, and extremely hard to miss. Disclosures should not be mixed with a group of hashtags or links. For endorsements in a picture, disclosures should be superimposed over the image enough for viewers to notice. For endorsements in a video or a live stream, disclosures should be made in both audio and video format and displayed continuously and prominently during the entire stream.

- The guidelines advise celebrities and influencers to always review and satisfy themselves that the advertiser is in a position to substantiate the claims made in the advertisement. It is also recommended that the product and service must have been actually used or experienced by the endorser.

- In conclusion, the guidelines aim to ensure that individuals do not mislead their audiences when endorsing products or services, and that they are in compliance with the Consumer Protection Act and any associated rules or guidelines. It is essential for celebrities, influencers, and virtual influencers to adhere to these guidelines to maintain transparency and authenticity with their audience.

4. ENVIRONMENT

## 4.1 A new report highlighted link between space weather and flight delays

About the news: A new study published in the journal Nature Scientific Reports highlighted:

➢ Average arrival delay time during space weather events rose by 81.34 percent compared to quieter periods.

➢ It interferes with communication and navigation, which are crucial in managing modern air traffic and ensuring safety.

About Space Weather:

- It describes the variations in the space environment between the sun and Earth.

- Space weather is a branch of space physics and aeronomy, or heliophysics, concerned with the time-varying conditions within the Solar System, including the solar wind, emphasizing the space surrounding the Earth, including conditions in the magnetosphere, ionosphere, thermosphere, and exosphere.

- Space weather originates from the sun. They include solar flares — bursts of electromagnetic radiation, coronal mass ejections (CME) and solar energetic particles (SEP).

- CMEs interact with the Earth's magnetic field to create a geomagnetic storm, which can disrupt navigation systems such as the Global Navigation Satellite System (GNSS).
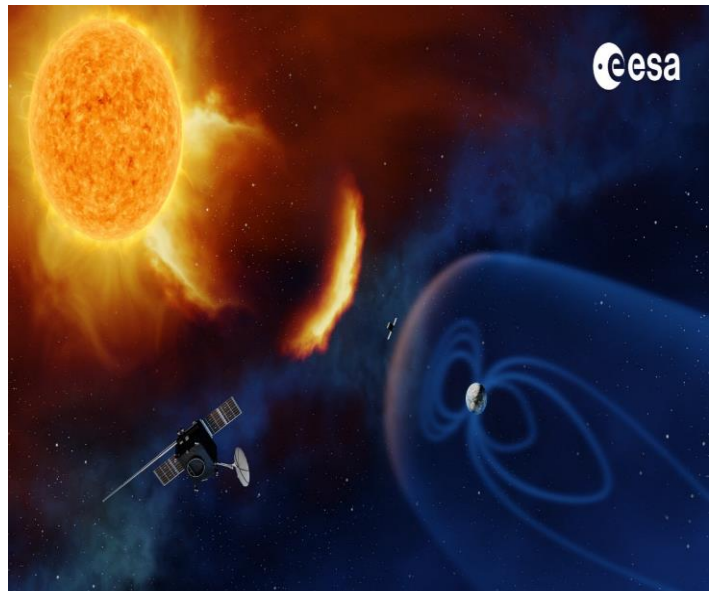
Key terms related to space weather Solar wind:

- They continuously flow outward from the Sun and consist mainly of protons and electrons in a state known as plasma.

- **Coronal Mass Ejections (CMEs):** Large expulsions of plasma and magnetic field from the Sun's corona (outermost layer of the Sun).

- **Geomagnetic storms:** They are fluctuations in the Earth's magnetic field, caused by changes in the solar wind and interplanetary magnetic field.

- **Sunspots:** Areas where the magnetic field is about 2,500 times stronger than Earth's, much higher than anywhere else on the Sun.

- A typical spot consists of a dark region called the umbra, surrounded by a lighter region known as the penumbra.

- Sunspots increase and decrease through an average cycle of 11 years

4.2 Constitution of Greater Panna Landscape Council (GPLC) Supreme Court's observations with respect to anti-defection law

- **About news:** As part of the Ken-Betwa Link Project (KBLP), GPLC has been constituted to ensure systematic and time-bound implementation of the Greater Panna Landscape Management plan

- **KBLP** is an interlinking of rivers project (through the Panna Tiger Reserve), that envisages transferring water from the Ken River to the Betwa river.

The broad objectives of the GPLC are;

➢ Enable betterment of habitat, and management for flagship species viz. tiger, vulture, and gharial in the landscape;

➢ Consolidate the landscape for biodiversity conservation through spatial prioritization;

➢ Provide species-specific and site-specific monitoring strategies.

About Integrated Landscape Management

➢ It refers to long-term collaboration to achieve the objectives required from the landscape, such as agricultural production, the delivery of ecosystem services, cultural

About Panna Tiger Reserve Location:

- It is situated in the Vindhyan Hills nearer to the confluence of the Deccan Peninsula, Upper Gangetic Plain, and Semi-Arid Gujarat .

- Panna National Park is a national park located in Panna and Chhatarpur districts of Madhya Pradesh in India. The forests of Panna National Park along with Ken Gharial Sanctuary

- The National Park is situated at a point where the continuity of the tropical and subtropical dry broadleaf forests belt, which starts from Cape Comorin in South India, is broken and beyond this the Upper Gangetic Plains moist deciduous forests of the great Indo-Gangetic Plain begins.

- This area is the northernmost tip of the natural teak forests, The **Panna Biosphere Reserve** was designated in 2020 by UNESCO.

- It encompasses Panna National Park, three sections of the Gangau Wildlife Sanctuary (I, III and IV) and the reserved and protected forests of the North Panna Forest Division. The reserve provides significant habitat for the Bengal tiger.

4.3 Changthang Wildlife Sanctuary (CWS)

- **About the news**: Standing committee of National Board for Wildlife (NBWL) has cleared the setting up of a new Indian Air Force base in CWS in Eastern Ladakh.

About CWS

- It is located in Ladakhi Changthang plateau in Leh district of Ladakh UT of Ladakh UT.

- It covers lakes like Pangong Tso, Tso Moriri and Tso Kar.

- **Fauna:** Snow Leopard, Tibetan Antelope, Tibetan wolf, wild yak, bharal etc.

- **Flora:** Devoid of trees, Rare and endangered plants can be found throughout the region

- It is also called as Changthang Cold Desert Wildlife Sanctuary).

4.4 International Energy Agency (IEA) releases 'CO2 emissions in 2022' report

About the Report:

It is first in IEA's new series, Global Energy Transitions Stocktake- tracking progress towards Paris Agreement, provides complete picture of energy-related greenhouse gas (GHG) emissions in 2022.

Key findings

- Global energy-related CO2 emissions grew by 0.9% in 2022, reaching a new high of over 36.8 Gt.

- CO2 emissions are caused by burning of fossil fuels such as oil, coal, and natural gas.

- Despite the rise, CO2 growth was well below global GDP growth of 3.2% - reverting to a decade-long trend of decoupling emissions and economic growth.

- Clean energy technologies (wind and solar energy, electric vehicles etc.) helped keeping the emission level of CO2 lower.

- Global Energy Transitions Stocktake It tracks technology, investment and people-cantered progress toward Paris Agreement and supports first Global Stocktake (GST) which will conclude at COP 28 in 2023.

- GST, started at COP 26, assesses world's collective progress towards Paris Agreement and long-term climate goals.

- Paris Agreement is a legally binding international treaty on climate change adopted by 196 Parties at UN Climate Change Conference COP 21 in 2015.
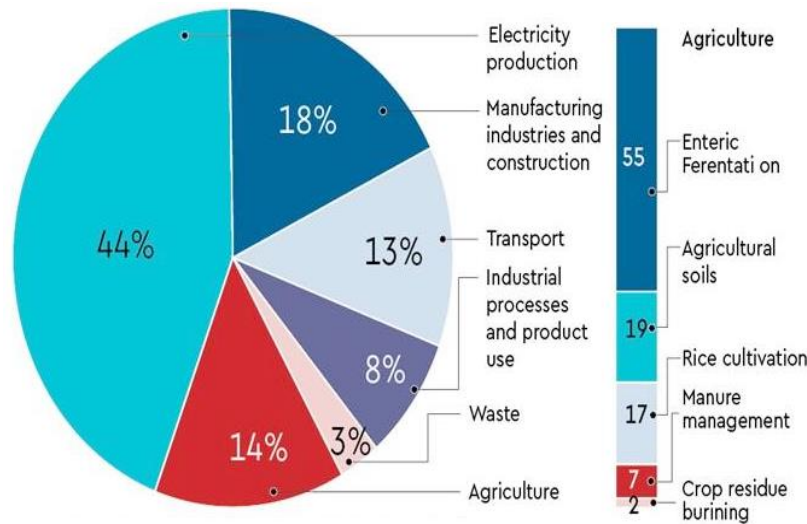

Fig: India's energy emissions

According to the report Coal and gas hits record high emissions:

- Global fossil fuel emissions primarily result from the combustion of coal, oil and gas.

- Coal is responsible for more emissions than any other fossil fuel, representing approximately 40% of global fossil CO_2 emissions in 2022. Oil is the second largest contributor at 32% of fossil CO_2, while gas and cement production round out the pack at 21% and 4%, respectively.

- These percentages reflect both the amount of each fossil fuel consumed globally, but also differences in CO_2 intensities. Coal results in the most CO_2 emitted per unit of heat or energy produced, followed by oil and gas.

- The figure below shows global CO_2 emissions from different fuels over time. While coal emissions (grey shading) increased rapidly in the mid-2000s to support the unprecedented growth of the Chinese economy, it has largely plateaued since 2013. However, coal use increased significantly in 2021 and modestly in 2022, causing 2022 to slightly edge out 2014 and set a new record of 15.1GtCO2.

- By contrast, gas (blue) and oil (red) emissions have steadily grown prior to the pandemic. Gas rapidly recovered from Covid-19 disruptions, setting new all-time records for emissions in both 2021 and 2022. Oil emissions, by contrast, still remain below pre-pandemic 2019 highs as travel has not fully recovered from its severe drop during the pandemic.

About international energy agency:

- IEA established in 1974 as per framework of the OECD, IEA is an autonomous intergovernmental organisation.

- MISSION – To ensure reliable, affordable and clean energy for its member countries and beyond. Its mission is guided by four main areas of focus: energy security, economic development, environmental awareness, and engagement worldwide Headquarters (Secretariat): Paris, France.

Composition and eligibility:

- It has 30 members at present. India became IEA's member in 2017.IEA family also includes eight association countries. A candidate country must be a member country of the OECD. But all OECD members are not IEA members. To become member a candidate country must demonstrate that it has:

1. Crude oil and/or product reserves equivalent to 90 days of the previous year's net imports, to which the government has immediate access (even if it does not own them directly) and could be used to address disruptions to global oil supply.
2. A demand restraint programme to reduce national oil consumption by up to 10%.
3. Legislation and organisation to operate the Co-ordinated Emergency Response Measures (CERM) on a national basis.
4. Legislation and measures to ensure that all oil companies under its jurisdiction report information upon request.
5. Measures in place to ensure the capability of contributing its share of an IEA collective action.

Reports published by IEA:

1. Global Energy & CO2 Status Report.
2. World Energy Outlook.
3. World Energy Statistics.
4. World Energy Balances.
5. Energy Technology Perspectives.

4.5 United Nations (UN) members reach accord to protect marine life on high seas
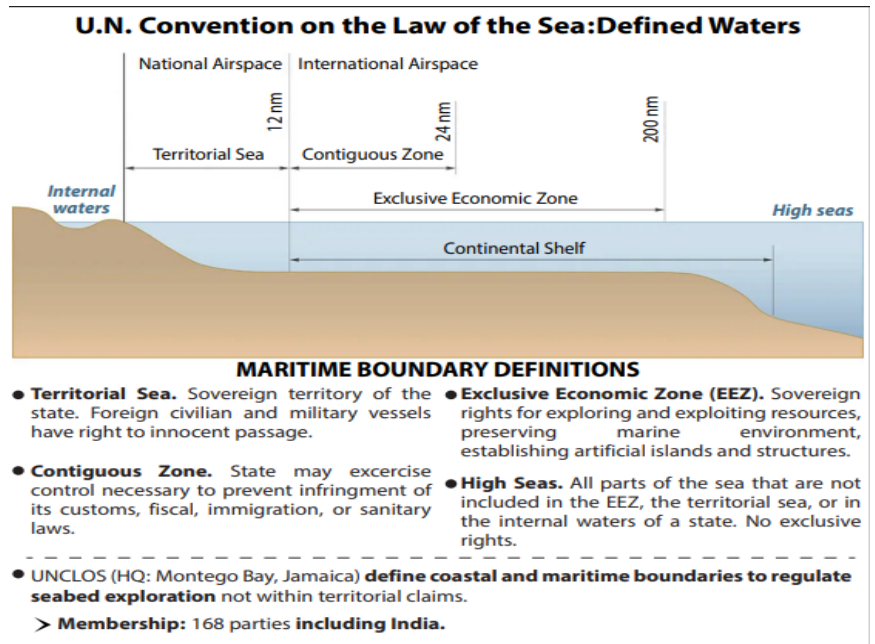
About the news: For the first time, UN members have agreed on unified treaty to protect biodiversity in high seas. Treaty was negotiated under United Nations Convention on Laws of the Sea (UNCLOS) of 1982 which governs rights of countries regarding marine resources.

➢ Treaty of High Seas, also known as Biodiversity Beyond National Jurisdiction (BBNJ) Treaty, will create a new body to manage conservation of ocean life and establish Marine Protected Areas (MPAs) in high seas.

➢ It will put limits on how much fishing can take place, exploration activities like deep sea mining etc.

Significance of treaty:

- Enforcing UN Biodiversity Conference's pledge to conserve 30% of world's land and ocean by 2030 (Achieving 30x30 Goal).
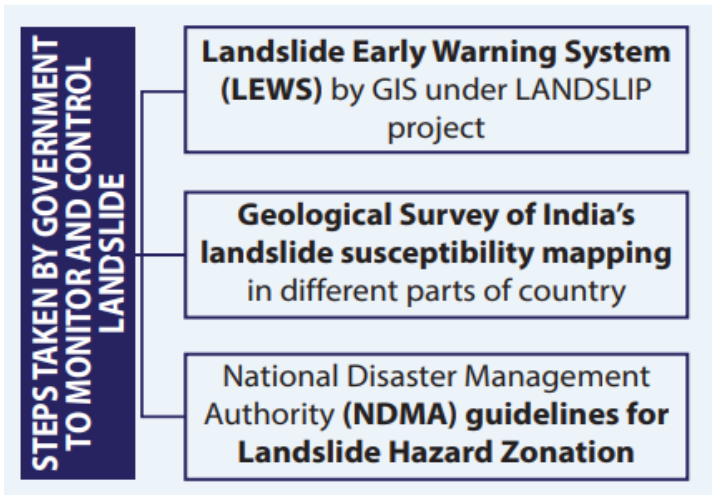
- Obliges countries to conduct environmental impact assessments of proposed activities on high seas.

- Combine different regional treaties to address threats and concerns across species' ranges

- High seas begin at border of countries' EEZ, which extend up to 370km from coastlines (refer image). They comprise more than 60% of world's oceans and nearly half planet's surface. Only about 1% of high seas are currently protected.

U.N. Convention on the Law of the Sea: Defined Waters

MARITIME BOUNDARY DEFINITIONS

- **Territorial Sea.** Sovereign territory of the state. Foreign civilian and military vessels have right to innocent passage.

- **Contiguous Zone.** State may excercise control necessary to prevent infringment of its customs, fiscal, immigration, or sanitary laws.

- **Exclusive Economic Zone (EEZ).** Sovereign rights for exploring and exploiting resources, preserving marine environment, establishing artificial islands and structures.

- **High Seas.** All parts of the sea that are not included in the EEZ, the territorial sea, or in the internal waters of a state. No exclusive rights.

- UNCLOS (HQ: Montego Bay, Jamaica) **define coastal and maritime boundaries to regulate seabed exploration** not within territorial claims.

  ➢ **Membership:** 168 parties **including India.**

4.6 National remote sensing centre (NRSC), Hyderabad releases 'landslide atlas of India

About news: NRSC scientist did risk assessment on landslides recorded between 1988 and 2022 in 147 districts in 17 states and two union territories to build a Landslide Atlas of India.

➢ Atlas, prepared under Disaster Management Support Programme of ISRO, provides state-wise geospatial distribution of landslides using space data and geospatial models. NRSC is responsible for managing data from aerial and satellite sources

STEPS TAKEN BY GOVERNMENT TO MONITOR AND CONTROL LANDSLIDE

- **Landslide Early Warning System (LEWS)** by GIS under LANDSLIP project

- **Geological Survey of India's landslide susceptibility mapping** in different parts of country

- National Disaster Management Authority **(NDMA) guidelines for Landslide Hazard Zonation**

Key findings:

- India is third most landslide prone country in world. 12.6% of India's land area, excluding snow covered area, is prone to landslide.

- Northwest Himalayas contribute 66.5% of landslides in India, followed by Northeast Himalayas (18.8%) and Western Ghats (14.7%).

- **Top 5 districts based on their exposure to landslide:** Rudra Prayag and Tehri Garhwal (Uttarakhand), Thrissur (Kerala), Rajouri (J&K) and Palakkad (Kerala).

- Landslide is defined as the movement of mass of rock, earth or debris down a slope.

- **Causes of Landslides:** Socio-economic parameters like total population, number of households etc., deforestation, heavy rainfall, earthquake etc.

- **Impact of landslides:** Loss of lives and infrastructure, risk of floods, creates financial burden for rebuilding infrastructure

4.7 Bamboo Crash Barrier

About news: India has installed the world's 1st Bamboo crash barrier on Vani-Warora highway in Maharashtra.

➢ 200m long Bamboo Crash Barrier, named Bahu Balli, is made from Bambusa Balcoa species of bamboo.

➢ Bambusa Balcoa, also known as Female Bamboo, is a tropical clumping bamboo mainly grown in Northeast India and West Bengal.

➢ It is commonly used in building material for houses, bridges, fishing floats, scaffolding, baskets etc.
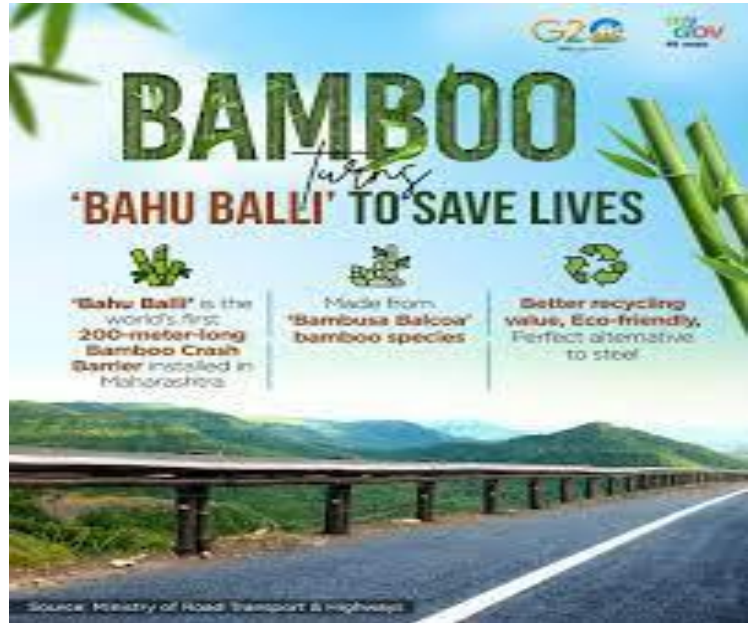
Benefits as Crash Barrier: An alternative to current steel barriers, bamboo barriers have higher recycling value (50-70%) as compared to steel barriers.

5. SCIENCE & TECHNOLOGY

5.1 After Navy & IAF, Army to get dedicated satellite GSAT-7b

About the news:

➢ Recently, the Ministry of Defence has signed a contract with ISRO's commercial arm New Space India Ltd (NSIL) for the procurement of an advanced communication satellite, GSAT-7B.

- Once launched, this will be the Army's first exclusive communication satellite that will act as a force multiplier and fail-safe communication support to the force as it moves deeper into network-centric warfare scenarios.

- ISRO will be launching a few more military satellites this year that will be focussed on surveillance.

- India currently uses the CARTOSAT and RISAT series of satellites for military communication and surveillance purpose.
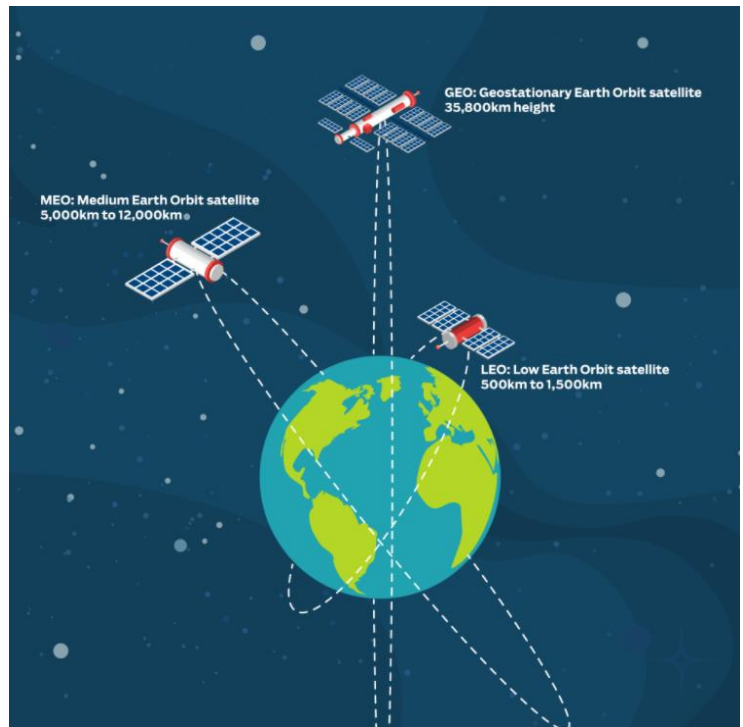
About Geosynchronous Satellite 7B /GSAT 7B:

- It is a communication satellite part of the GSAT-7 series.

- GSAT 7 series satellites are advanced communication satellites developed by the Indian Space Research Organisation (ISRO) to meet the communication needs of the defence services.

- The GSAT 7B will primarily fulfil the communication needs of the Indian Army.

- It is a geostationary satellite which will considerably enhance the communication capability of the Indian Army by providing mission-critical beyond-the-line-of-sight communication to troops and formations as well as weapon and airborne platforms.

- It is the first-ever in the five-tonne category that will be designed indigenously by the ISRO.

Geostationary satellite:

- A satellite which is placed in orbit at a distance of around 35,800 km from the earth's surface .

- The time period of a geostationary satellite is 24 hrs.

- These satellite are also used for navigation, television broadcasting and defense and weather

---

forecasting purpose.

- We uses three geostationary satellite placed at the vertices of an equilateral triangle, then the entire earth can be covered by a communication network, each satellite covers 1/3 of the globe.

- Following is the difference between Geostationary and Geosynchronous Satellite.

Geostationary Satellite
- ✓ Altitude 35,786 km
- ✓ Period 23 hrs. ,56 min 4 sec
- ✓ Geostationary orbit-→GTO
- ✓ 0° from earth's equator
- ✓ Speed , direction & time period are in sync with earth's rotation .
- ✓ Motionless
- ✓ GSAT at given altitude survey nearly 1/3 of Earth's surface.
- ✓ So, there's a need of 3 satellites (GSAT) to cover the entire earth's surface.
- ✓ 24*7 coverage
- ✓ Disaster management
- ✓ Communication
- ✓ Weather broadcasting and disaster forecasting
- ✓ DTH purpose too

Geosynchronous Satellite
- ✓ Altitude 35,786 km
- ✓ Period 23 hrs. ,56 min 4 sec
- ✓ Geosynchronous orbit-→GSO
- ✓ Inclined Angle from earth's equator
- ✓ Speed & time period are in sync with earth's rotation .
- ✓ Returns to the same position in the sky after each rotation after following a regular pattern of 8 in the sly over the course of day
- ✓ Communication

GSAT 7 Series Satellites:

- Currently, India has only two dedicated military satellites — the GSAT-7 (Rukmini) and GSAT-7A (Angry Bird) — used by the Indian Navy and Air Force, respectively.

GSAT-7 (Rukmini):

- It is India's first military satellite.

- It was launched in August 2013 from an Ariane 5 ECA rocket from Kourou in French Guiana.

- It is an advanced communication satellite developed by ISRO and primarily provides communication services to the Indian Navy.

GSAT 7A:

- It primarily provides communication services to the Indian Air Force.

- It also helps in satellite-controlled operations of UAVs.

**5.2 The Piezoelectric effect is possible in liquid discovered the first time**

About the Piezoelectric effect?

- Piezoelectric Effect is the ability of certain materials to generate an electric charge in response to applied mechanical stress.

- Piezoelectricity can convert mechanical energy into electrical signals.

- "Piezo" can even trace its roots back to ancient Greek, where its meanings relate to actions of pushing, squeezing and pressing.

- This effect has only been expected in solids thus far because the body being squeezed needs to have an organised atomic structure, like pyramids of quartz.

- Liquids don't have an organised atomic structure.

- Quartz is the most famous piezoelectric crystal. Quartz is silicon dioxide (SiO_2).

- The quartz crystal consists of silicon and oxygen atoms at the four vertices of a three-sided pyramid; each oxygen atom is shared by two pyramids. These pyramids repeat themselves to form the crystal.

Direct Piezoelectric Effect Principle

- When mechanical stress is applied – i.e., when the crystal is squeezed – the position of the charge is pushed further from the centre, giving rise to a small voltage. This is the source of the effect.

- It is used in this capacity in analog wristwatches and clocks. Such crystals are also used in cigarette lighters, electric guitars, TV remote controls, audio transducers, and other instruments where converting mechanical stress to a current is useful.
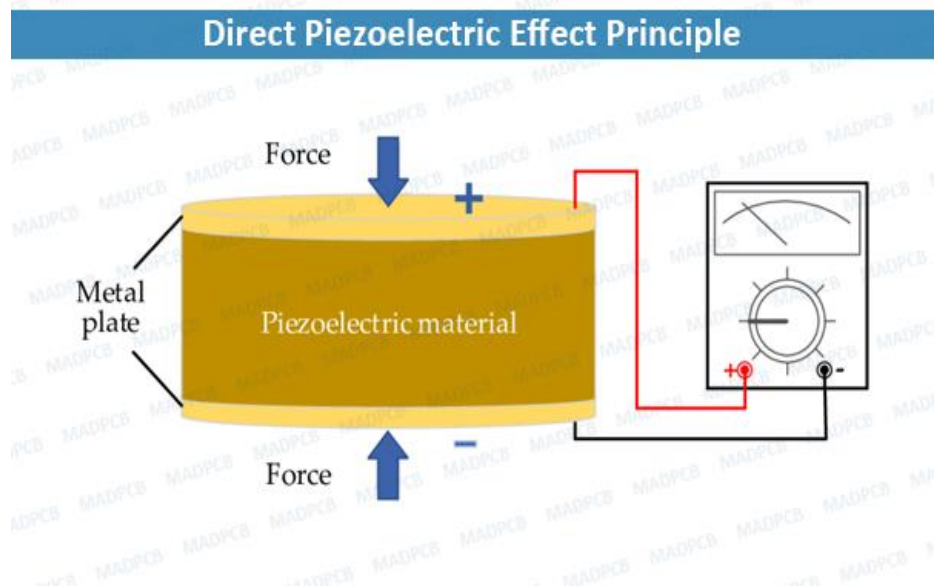
Applications of piezoelectric effect

- Cell phones, diesel fuel injectors, grill igniters, ultrasonic transducers, acoustic guitar pickups, vibration sensors, certain printers, and musical greeting cards etc.

5.3 TRAPPIST-1b

About the news:

- NASA's James Webb Space Telescope reveals that TRAPPIST-1b is unlikely to have an atmosphere as it is like a burning furnace.

- In the beginning, scientist were hoping for life in the TRAPPIST system.

- TRAPPIST is to be considered like our Solar system which also has seven stars outside the solar system.

- In the beginning, the scientist was hopeful to have life and habitable zones in the TRAPPIST planet system but now there are no hopes.

- TRAPPIST-1 is named for the Transiting Planets and Planetesimals Small Telescope (TRAPPIST) in Chile, which discovered two of the seven planets we know of today – announced in 2016
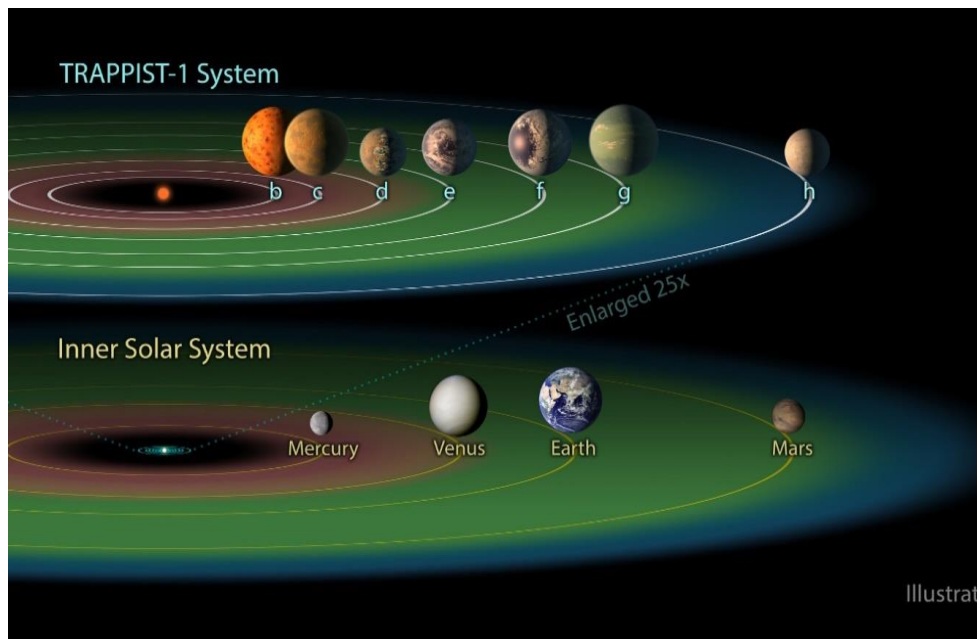
(Diagram is about Solar system and TRAPPIST system).

About TRAPPIST-1 b:

- The TRAPPIST-1 system contains a total of seven known Earth-sized planets. Three of them — TRAPPIST-1e, f and g — are located in the habitable zone of the star where temperatures are just right for liquid water to exist on the surface.

- While TRAPPIST-1b, c and d are too close to their parent star and TRAPPIST-1h is too far away, the remaining three planets could have the right conditions to harbour life.

- It is a hot rocky exoplanet orbiting an ultracool red dwarf star TRAPPIST-1.

- It is the innermost of seven known planets in the TRAPPIST-1 system.

- It orbits its star at a distance of 0.011 astronomical unit (AU), completing one circuit in just 1.51 Earth days.

- It receives about four times the amount of energy that Earth gets from the Sun.

- TRAPPIST-1b is tidally locked, meaning that one side of the planet always faces the star, and one side looks away.

What is an astronomical unit (AU)?

- An AU is the average distance between Earth and the Sun, which is about 93 million miles or 150 million kilometres.

- It is usually used to measure distances within our Solar System.

5.4 ISRO released images captured by the EOS-06 satellite/ OceanSAT-3

About News:

- Recently, the Indian Space Research Organisation (ISRO) released images of Earth captured by the EOS-06 satellite.

About the EOS-06 satellite:

- It is the third-generation satellite in the Oceansat series.

- The ocean observing mission (EOS-06 also known as OceanSat-3) is a follow up to OceanSat-1 or IRS-P4 and OceanSat-2 launched in 1999 and 2009, respectively.

- This is to provide continuity services for Oceansat-2 spacecraft with enhanced payload specifications as well as application areas.

Followings are the payloads of the satellite:

- Ocean Color Monitor (OCM-3)

- Sea Surface Temperature Monitor (SSTM)

- Ku-Band Scatterometer (SCAT-3)

- ARGOS

Followings are the objectives of the mission:

1. To ensure the data continuity of Ocean colour and wind vector data to sustain the operational applications.

2. To improve the applications, some additional datasets such as Sea Surface Temperature and more number of bands in the Optical region for fluorescence and in the Infrared region for atmospheric corrections are accommodated.

3. To develop/improve related algorithms and data products to serve in well-established application areas and to enhance the mission utility.

4. The EOS-06 is envisaged to observe ocean color data, sea surface temperature and wind vector data to use in Oceanography, climatic and meteorological applications.

5. The satellite also supports value added products such as potential fishing zone using chlorophyll, SST and wind speed and land based geophysical parameters.

Significance of Earth Observation Satellite-6 (EOS-6)

- Earth Observation Satellite-6 will provide a bouquet of services every day for lakhs of stakeholders across the nation.

- Ocean observations such as this will serve as strong foundation for the India's blue economy and polar region policies.

- This is the first major ocean satellite launch coming from India since the initiation of the UN Decade of Ocean Science for Sustainable Development (UNDOSSD, 2021-2030).

- EOS-06 satellite will have the capability to make concurrent measurements of Ocean Colour, SST and Sea Surface Winds.

- It is expected to provide a great boost to the ocean observing capabilities of the global scientific and operational communities in addressing the Ocean Decade objectives.

5.5 Moskit cruise missiles in the sea of Japan

About News:

- Recently, Russia's Defense Ministry says Moscow has test-fired two Moskit cruise missiles in the Sea of Japan.

About Moskit cruise missiles:

- It is a supersonic anti-ship cruise missile that has conventional and nuclear warhead capacity

- It has the fastest flying speed among all anti-ship missiles in today's world.

- It reaches Mach 3 at a high altitude and its maximum low-altitude speed is M2.2.

- It is capable of destroying a ship within a range of up to 120 kilometers.

What are cruise missiles?

- A cruise missile either locates its target or has a preset target.

- It navigates using a guidance system such as inertial or beyond visual range satellite GPS guidance and comprises a payload and aircraft propulsion system.

- Cruise missiles can be launched from land, sea or air for land attacks and anti-shipping purposes, and can travel at subsonic, supersonic and hypersonic speeds.

- They stay relatively close to the surface of the earth, cannot be detected easily by anti-missile systems, and are designed to carry large payloads with high precision.

What are Ballistic Missiles?

- Ballistic Missiles are launched directly into the upper layers of the earth's atmosphere.

- They travel outside the atmosphere, where the warhead detaches from the missile and falls towards a predetermined target.

- They are rocket-propelled self-guided weapons systems which can carry conventional or nuclear munitions. They can be launched from aircraft, ships and submarines, and land.

Differences between Ballistic Missile and Cruise Missile

Ballistic Missile	Cruise Missile
• It is propelled only for a brief duration after the launch.	• Self-propelled till the end of its flight.
• Similar to a rocket engine.	• Similar to a jet engine.
• Long-range missiles leave the earth's atmosphere and reenter it.	• The flight path is within the earth's atmosphere.
• Low precision as it is unguided for most of its path and its trajectory depends on gravity, air resistance and Coriolis Force.	• Hits targets with high precision as it is constantly propelled.
• Can have a very long range (300 km to 12,000 km) as there is no fuel requirement after its initial trajectory.	• The range is small (below 500 km) as it needs to be constantly propelled to hit the target with high precision.
• Developed primarily to carry nuclear warheads.	• Developed primarily to carry conventional warheads.
• E.g. Prithvi I, Prithvi II, Agni I, Agni II and Dhanush missiles.	• E.g. BrahMos missiles

About Sea of Japan

- It is the marginal sea between the Japanese archipelago, Sakhalin, the Korean Peninsula, and the mainland of the Russian Far East.

- The Japanese archipelago separates the sea from the Pacific Ocean.

- Like the Mediterranean Sea, it has almost no tides due to its nearly complete enclosure from the Pacific Ocean.

- The seawater has an elevated concentration of dissolved oxygen that results in high biological productivity. Therefore, fishing is the dominant economic activity in the region.

5.6 New recyclable plastic based PECA

About News:

- Recently, scientists from Boise State University in the US have just developed a new kind of plastic that, unlike existing plastics, isn't made from crude oil and its derivatives.

About Recyclable Plastic:

- The new recyclable plastic is based on Poly(ethyl cyanoacrylate) or PECA, which is prepared from the monomer used to make Super Glue.

- It is formed through a process of polymerization where single, repeating monomer units are strung together in a chemical reaction to make one long chain.

- It has comparable properties to existing plastics and is stable in hot, humid environments.

- The long polymer chains of the PECA plastic can be thermally 'cracked' at temperatures of 210 °C and the resulting monomers distilled into a clean product to use again.

- Superglue-based recyclable plastic could take the place of polystyrene.

What is Ethyl cyanoacrylate?

- Ethyl cyanoacrylate is a highly reactive monomer that has been used nearly exclusively to make Super Glue and related fast-setting adhesives

- It is produced on the ton scale from methanol, chloroacetic acid, and sodium cyanide, which themselves are sourced from hydrogen, nitrogen, methane, carbon monoxide, chlorine, and sodium hydroxide.

What is polymerization?

- It is a process in which relatively small molecules called monomers combine chemically to produce a very large chainlike or network molecule, called a polymer.

- The monomer molecules may be all alike or represent two, three, or more different compounds.

CAMPUS

CORRIDOR

LECTURE HALL - 1

LIBRARY

LECTURE HALL- 2

CANTEEN

LECTURE HALL - 3

MENTORING ROOM

A Monthly Magazine from
EXCEL CIVILS ACADEMY
NTR Bhavan, Rd. No. 2, Banjara Hills, Hyderabad.
Contact: 91004 33442, 91004 33445

www.excelacademy.com