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Topic 1. NATURAL FARMING

Important for subject: Environment

Natural farming is given a boost with a focus on ensuring inputs Budget 2023.

- In the next three years, the government will assist one million farmers to shift to natural agriculture to which the Finance Minister presented a comprehensive plan to begin by growing the bio-fertilisers as well as bio-pesticides which are the main ingredients needed to ensure that there is no drop in yield in addition to an efficient distribution system to ensure that they are readily available.
- The program proposed by the government may aid who want to increase the productivity of their crops, as well as for those who wish to move from chemical agriculture.
- The focus on generative farming can assist India to reduce carbon emissions generated by agriculture.
- The focus on integrated nutrition management is in line with the overall concept of sustainability.

Natural Farming

- It is defined as "chemical- free farming and livestock based". Based on agro-ecology and agro-ecology, it is a diverse farming system that incorporates livestock, trees, and crops which allows the best utilization of biological diversity that is functional.
- It has the potential of increasing the income of farmers and bringing many other benefits, including improving soil fertility and environmental health, while also reducing or the emission of greenhouse gases.
- This method of farming was first developed by Masanobu Fukuoka who was a Japanese agriculturalist and philosopher in his book of 1975 The One-Straw Revolution.
- It is built upon the natural or eco-friendly processes that occur in and around farms.
- In the world, Natural Farming is thought of as a type of Regenerative Agriculture--a popular strategy for saving the earth.
- It could be used to regulate land practices and also sequester carbon from the atmosphere through plants and soils, in which case it can be beneficial instead of being harmful.

- In India natural farming is promoted under the Bhartiya Prakritik Krishi Paddhati Program (BPKP) in the framework of Paramparagat Krishi Vikas Yojana (PKVY).
- BPKP is designed to promote traditional indigenous practices that cut down on the use of inputs purchased from outside sources.
- Natural Farming As it is referred to is the practice, art and more and more an approach to working in harmony with nature to accomplish more in a shorter amount of time.
- **Organic Farming**
- **Natural Farming**
- Organic farming is a method of farming where organic manures and fertilizers like vermicompost and compost manure from cows and more are used to improve the farmlands using external sources.
- In the natural farming system it is not necessary to use chemical or organic fertilizers can be added to soil.
- In reality, no fertilizers from outside are applied to soils or to plants at all.
- Organic farming requires the fundamental agro practices such as plowing and tilting, mixing manure, weeding, etc. to be carried out.
- In organic farming, the decomposition in organic matter through microbes as well as earthworms is facilitated right on the soil's surface and gradually increases the amount of nutrients to the soil over time.
- Organic farming can be expensive because of the requirement of bulk manure as well as an environmental impact on surroundings; however natural agriculture is a low-cost farming technique that is completely molded by the local ecosystem.
- In natural agriculture, there isn't any plowing or tilting of the soil and there are no fertilizers is no weeding done exactly like it is in natural ecosystems.

Topic 2. REGENERATIVE AGRICULTURE

Important for subject: Environment



The concept of regenerative agriculture refers to a set of agricultural principles and practices that is designed to restore and strengthen the whole farming ecosystem with a significant emphasis to healthy soil and paying attention to the management of water, fertilizer use and much more.

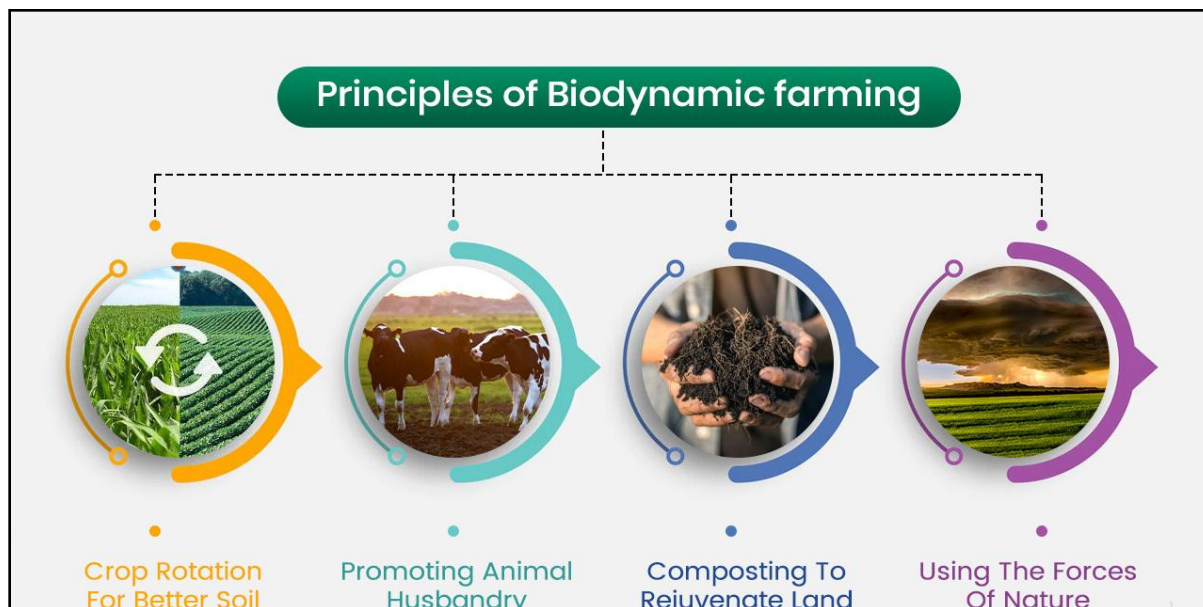
- It's a way of agriculture that increases the amount of resources that it utilizes, rather than destroying or diminishing them.
- Advantages Regenerative farming practices improve organic matter and soil biodiversity, leading to more robust soils that are better able to resist the effects of climate change like drought and flooding.
- Healthy soils can lead to high yields and nutritious crops.
- It also reduces runoff and erosion, leading to an improvement in the quality of

water in and around the farm.

- In addition, practices of regenerative agriculture can also aid in tackling environmental issues by drawing carbon out of the atmosphere and locking it in the soil.

Topic 3. BIODYNAMIC FARMING

Important for subject: Environment



Biodynamic agriculture is one of the forms of alternative farming based on esoteric and pseudoscientific ideas first proposed during 1924, in the work of Rudolf Steiner (1861-1925).

- It was the beginning of organic farming practices.
- It focuses on the fertility of soils, plant growth and the care of livestock as interconnected ecological tasks with a focus on spiritual and mystical views.
- It stresses the use of manure and composts. It also prohibits using synthetic (artificial) fertilizers as well as herbicides, pesticides and pesticides on the soil and plants.
- Biodynamic techniques that are unique to the approach involve the approach to treating animals, crops and soils as one system with a focus from the beginning on local production and distribution methods and the use of traditional and the development of new breeds and varieties local to the area.
- Certain methods make use of the astrological sowing calendar.
- Biodynamic agriculture employs a variety of herbal and mineral compounds to compost and sprays for fields.

- The benefits of HTML0 are the same result is scientifically proven between biodynamic techniques that are certified and comparable traditional and organic farming methods. Biodynamic agriculture is an unproven pseudoscience because it is not backed by any scientific proof of its effectiveness due to its dependence on mystical knowledge and esoteric beliefs.
- In the year 2020 Biodynamic practices were applied to 251,842 acres across 55 different countries which was led by Germany, Australia and France. 10 Germany makes up 41.8 percent of the total. The rest of the world averages 1750 ha per country.
- Biodynamic methods for cultivating grapevines are being adopted by a number of prominent vineyards.
- There are certification organizations for biodynamic products, the majority of them are members of the international biodynamics standard association Demeter International.

Topic 4. AGROECOLOGY OR AGROECOLOGICAL FARMING

Important for Subject: Environment

The study is based on the ecological processes that are applied to the agricultural production system.

- Implementation to the principles of ecology to agricultural ecosystems can assist in the development of innovative techniques and management strategies for agricultural systems.
- The Agroecology field isn't connected to any specific way of farming, regardless of whether natural, integrated traditional, extensive or intensive. But, it does have more than organic and integrated farming.
- Agroecology isn't against the application for technology to improve agriculture however it examines what, when and whether technology can be employed to complement natural, human, and social assets.
- It acknowledges that there is no one universal recipe or formula for the ultimate success and wellbeing of an agroecosystem. It is site- or context-specific.
- Agroecology does not have to be defined by specific management practices. Instead, it investigates issues about the four properties of a system of Agroecosystems

1. productivity,
 2. stability,
 3. sustainability and
 4. Equity
- Agroecologists consider the four elements as interconnected and crucial to the performance of an Agroecosystem and analyze them through an interdisciplinarity view, using natural sciences to comprehend the elements of agroecosystems, as well as employing social sciences to study the impact of agriculture techniques on the rural community, the economic limitations to the development of new methods of production or the influence of culture on the practices of farming.
 - Agroecologists don't limit themselves to studying Agroecosystems at any given scale: gene-organism- population- community ecosystem-biome- landscape field farm communityregion-state- country-continent-global.

Benefits of Agroecology

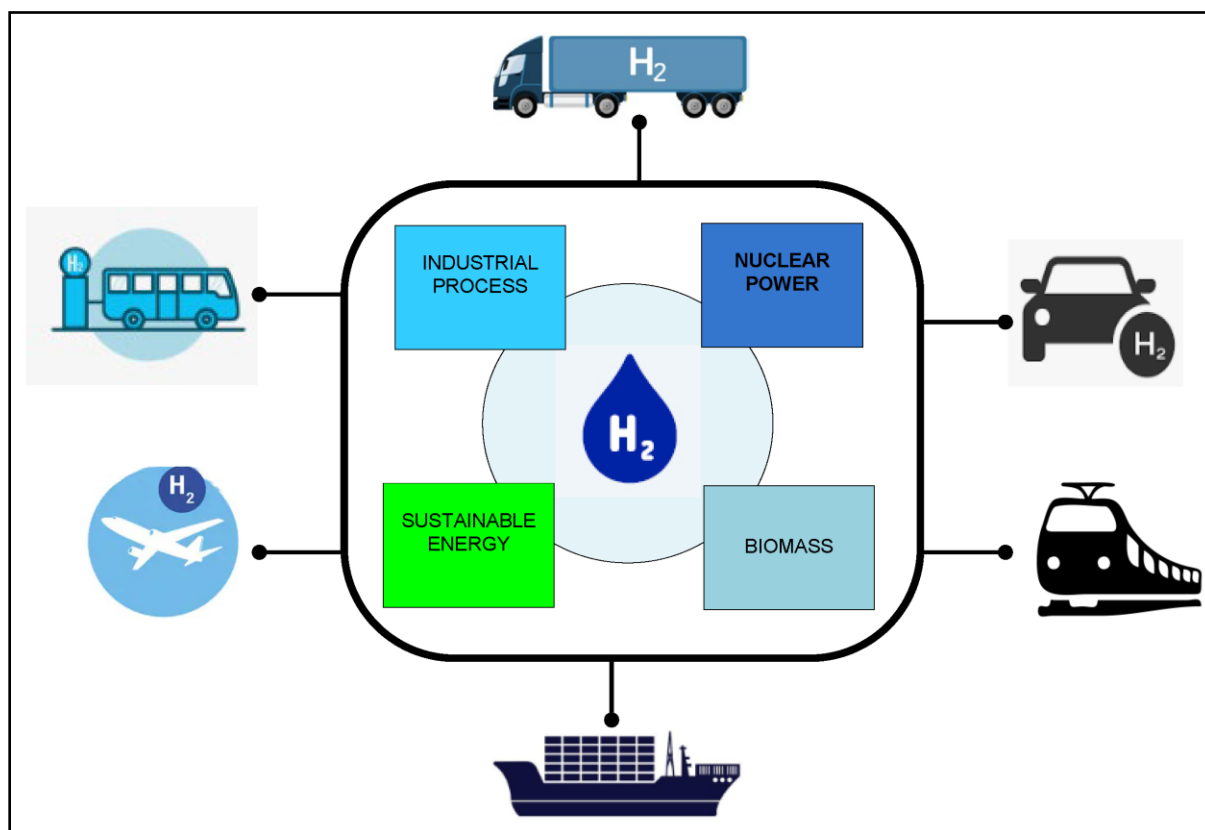
- It is the comprehensive set of options to the economic and environmental challenges that are affecting agriculture today.
- The food industry has been thrown off the track, becoming dependent on harmful pesticides as well as other chemical ingredients which degrade soils and threaten the populations of pollinators and affect water quality.
- Through changing the farming practices and policies to incorporate agroecology, you can develop a system of food to last through the coming generations. It is rooted in resilience, productivity and equity.
- Agroecological farming could increase food production by a factor of ten in 10 years without causing harm to the environment.
- Agroecology is aware of the multi-functional aspects of agriculture that not just generates food, jobs and economic wellbeing, but also generates environmental, social, and cultural advantages.
- Agroecology is also a way to protect and provide ecosystem services such as pollination as well as natural pest control water cycle and nutrient cycles, as well as erosion control. Agroecological agriculture has been demonstrated to improve ecological resilience particularly in relation to unstable weather conditions.
- Improve nutrition and health by offering greater diversity, more nutritious and fresh

foods, as well as reducing the frequency of pesticide poisonings as well as related pesticide-related illnesses;

- Protect biodiversity as well as natural resources like organic soil matter water, genetic diversity, and the natural predators of insects.
- Enhance economic stability by diversifying source of income and sources, the distribution of labour needs and production as time passes, and a reduction in susceptibility to price fluctuations in commodities and
- Reduce the impact from climate changes by reducing reliance on fossil fuels and fuel-based agricultural inputs. Also, increase the sequestration of carbon and water in soil.

Topic 5. BID TO END TAX ANOMALY BETWEEN BIOGAS, NATURAL GAS TO PROMOTE GREEN FUEL

Important for subject: Environment



To eliminate the tax gap between natural gas and biogas in the event of blending them to make automobile fuel (compressed natural gas) the Finance Minister has suggested exempting tax on CNG in a manner equal to the GST paid for Biogas and compressed biogas and is subject to the conditions.

- Natural gas is currently covered within the tax on value added (VAT) system, whereas biogas is subject to GST.
- The government has been encouraging the utilization of biogas compressed as alternative green transport fuel that is created by anaerobic degradation of biomass or waste sources, which includes municipal waste.
- The Ministry of Petroleum and Natural Gas has launched the sustainable 'Alternative to affordable transportation' (SATAT) initiative on October 1st, 2018, with the aim of towards creating an eco-system that will allow the production of biogas compressed made from waste or biomass sources and encourage its use in conjunction with natural gas.
- In the following days, the ministry released guidelines for the co-mingling of domestic gas, which is supplied via city gas distribution systems, along with biogas that is compressed. However, due to a tax discrepancy, the blending was not implemented.
- The Budget attempted to address the blending problem of CBG within PNG by exempting GST-paying CBG from duty on excise for the purpose of helping increase green mobility more. This also serves as a cost rationalization for CBG producers.

SATAT Scheme

- It was established in the year 2018 by the Ministry of Petroleum & Natural Gas in collaboration with Indian Oil Corporation Ltd., Bharat Petroleum Corporation Ltd. and Hindustan Petroleum Corporation Ltd.
- It plans to produce 15 million tonnes of CBG from the 5000 plants in 2023.
- It intends to build Compressed Bio-Gas manufacturing plants and to make CBG accessible to the market to be used as a sustainable fuel.

Compressed Bio-Gas (CBG)

- Bio-gas is created naturally (through the process of anaerobic breakdown) from waste / bio-mass sources like agricultural residues such as sugarcane press mud municipal solid waste the waste of sewage treatment plants and more.
- Once it has been purified it is then compressed and referred to as CBG, which contains high methane.

- It is very similar to natural gas with respect to its chemical composition as well as potential for energy.
- It is a viable option to use to provide an alternative, sustainable automotive fuel with the same calorific values as well as other properties that are like CNG.

Topic 6. ECONOMY TRANSITIONING TO NET-ZERO WILL REQUIRE CHEMICAL SOLUTIONS

Important for subject: Environment

From the perspective of the chemical industry the economic shift from fossil fuels to renewable energy has created new revenue source over the years, and will likely to benefit the sector.

- Chemicals' uses during the transition to green energy will be vastly similar to fossil chemical's applications in a fossil economic system.
- Electrolytes in batteries solar films that are used in solar panels, and waste treatment in biomass and biogas efficient catalysts that can replace old chemicals and environmentally friendly refrigerants, chemicals are utilized in the majority of green solutions.
- This could be advantageous for businesses who are developing solutions in this area.
- Customs duties for fluorospar, a base material for fluoro chemicals that is utilized in agro-chem, pharma and other new energy solutions, has also been cut from 5 per cent to 2.5 percent to support the development of new solutions.
- The Make-in-India initiative of authorities in the electronic sector offers opportunities for chemical producers providing to semiconductor industries too.
- In a broad sense, net-zero carbon emission by 2070 will require chemical industries that have developed solutions to reduce the carbon emissions generated by industrial processes.

Topic 7. UNEP-MANAGED CITES DATABASE REVEALS RED SANDERS SMUGGLING

Important for subject: Environment

The CITES trade database has registered 28 incidents related to Red Sanders confiscation, seizure and specimens of the wild being shipped out of India in a factsheet compiled by TRAFFIC the world's wildlife trade monitoring group has been revealed.

Red Sanders:

- Pterocarpus Santalinus which is also known as red sandalwood is native tree species that is restricted only to Eastern Ghats of India.
- They are located within Tropical Dry Deciduous Forest in the Palakonda and Seshachalam hill ranges in Andhra Pradesh and they are also found within Tamil Nadu and Karnataka.
- The species is found growing to the height of 10-15 metres.
- Red Sanders is a extremely slow-growing tree species which matures in the natural forest at around 25-40 years.
- Red Sanders usually grow in the degraded, rocky and fallow areas with Red Soil as well as hot as well as dry conditions.
- According to the foreign trade policy that is in place for India, the import of Red Sanders is prohibited and exports are restricted.
- Red sanders are believed as one of the most exploited trees and is subject to extreme pressure due to illegal harvesting and logging.
- Its heartwood is demanded on both the international and domestic markets. It is used for create furniture and handicrafts as well as the dye r dye extracted in the wood can be utilized to colour the fabric in the manufacture of medicines and textiles.

Status of conservation

- The list is listed under the Schedule IV section of The Wildlife Protection Act
- Endangered as per IUCN Red List
- Falls in Appendix II of CITES.
- Convention on International Trade in Endangered Species of Wild Fauna and Flora
- CITES is an internationally recognized treaty that States as well as regional

integration organizations sign to on a voluntary basis.

- Goal: To ensure that international trade in the specimens from wild species and plant life do not endanger their existence.
- It was created in response to an act of 1963 during a meeting of the participants of the International Union for Conservation of Nature (IUCN).
- It supplies private, public and non-governmental organizations with information and tools to allow the advancement of humanity, economic development and conservation of nature to occur all in one place.
- The CITES Secretariat is managed through UNEP (The United Nations Environment Programme) and is located in Geneva, Switzerland.
- It has a coordination, advisory, and service function in the work in the Convention (CITES).
- The Conference of the Parties to CITES is the most important authority for making decisions within the Convention and is comprised of all of its Parties.
- While CITES has the effect of being legally binding for the Parties but it does not substitute for national laws. It creates a framework that must be followed by every Party which is obliged to establish its own domestic law for ensuring that CITES is followed on a national scale.

Functions

- The CITES is a non-profit organization that works essential for subjecting the international trade of specimens of species that are selected to specific controls.
- Every import, export, re-export, and entry into the ocean of species protected in the Convention is subject to authorization by a licensing system.
- Each of the Parties to the Convention must establish at least one of the Management Authorities who are responsible for governing this licensing system as well as any or all Scientific Authorities to provide advice about the impacts of trade on the status of species.
- Appendices I II and III to of the Convention are an inventory of species with different levels or kinds of protection from over-exploitation.

Appendix I

- It includes species that are most threatened in the CITES list of species of animals and plants.
- The species are threatened by their extinction as well. CITES prohibits trade for the specimens belonging to these species, except in cases where the reason for this importation isn't for commercial gain, such as for research purposes..
- In such circumstances, trade can be conducted if allowed by the grant the import license and one for export (or the re-export permit).

Appendix II

- It includes the species which are not in any way threatened by the extinction of species but could be endangered if trade is not closely monitored.
- International trade in Appendix II species can be authorized through the issuance the export license or re-export certification.
- A permit to import is not required for these species in CITES (although an import permit may be required in some countries that have adopted more stringent measures that CITES demands).

Appendix III

- The list is of species that are included on the request of an Party that regulates trade with the species, and requires the assistance of other countries to stop illegal or unsustainable exploiting.
- International trading of specimens of species that are listed in this Appendix is permitted only upon the presentation of the proper permit or certificate.

TRAFFIC (Trade Records Analysis of Flora and Fauna in Commerce)

- TRAFFIC is a top non-governmental organization which is working around the world to promote trading in wild animals and plants, in the context of conservation of biodiversity and sustainable development.
- It is a joint project by WWF as well as IUCN.
- TRAFFIC is committed to ensuring that the trade of wild animals and plants isn't harmful to the preservation of nature.

- TRAFFIC has earned its most renowned reputation for its support of CITES, the Convention on International Trade in Endangered Species.
- TRAFFIC concentrates on the use of resources, experience and knowledge of the most urgent global issues affecting trade in species including tiger parts rhino horn and elephant ivory.
- Commercial trade on a large scale in products such as timber and fisheries goods are as well dealt with and is linked to work on creating rapid results and improvement in policy.

Topic 8. WORLD WETLANDS DAY: IN ANDHRA PRADESH, EFFORTS ON TO SAVE A UNIQUE WETLAND NEAR VISAKHAPATNAM

Important for subject: Environment

The State Forest Department, in collaboration with environmental groups are working to conserve Kondakarlava wetland which is the second-largest freshwater lake in Andhra Pradesh.

- Environmentalists from the group observed four smooth-coated otters within the Kondakarlava wetland in 2021.
- This was the very first documented report of the smooth-coated Otters.

World Wetlands Day

- World Wetlands Day is celebrated on the 2nd day of February every year to commemorate adopting the Convention on Wetlands on February 2nd 1971.
- This festival is purposely celebrated in order to increase awareness among all segments of society regarding the importance and benefits of wetlands, their use their resources, as well as their importance to the environment.
- In 2023, the theme is "Wetland rehabilitation" - This year's theme emphasizes the urgent necessity of prioritizing restoration of wetlands and calls on everyone to work to restore and restore wetlands that have been degraded.
- The theme builds upon - and supports efforts to efforts to save the planet, as advocated through the UN Decade on Ecosystem Restoration.

Kondakarla Ava lake

- Kondakarlava is situated about 48 km from
- This is second-largest freshwater wetland in Andhra Pradesh, yet to be declared protected.
- It covers 750 acres and it's home to more than 150 bird species and boasts a diverse biodiversity with a variety of fish, aquatic animals and plants.
- The Sanctuary includes a distinctive and threatened forest type as well as the evergreen, wet forest. It is recognized as an Eco Tourism destination.

Smooth-coated Otter

- The smooth-coated otter, also known as the otter species found in the majority of the Indian subcontinent as well as Southeast Asia, with an isolated population in Iraq.
- This species has been classified vulnerable in the IUCN Red List.
- Smooth-coated otter is distinguished by the smooth and slim pelage.
- They are generally classified as fish experts. They are adept swimming and can be found in large groupings. When fishing they move in a V-shape towards the river.
- The number of them is believed to be decreasing, with only a few breeding populations identified in Corbett as well as Dudhwa Tiger Reserves and Katarniaghat Wildlife Sanctuary in the north. Kaziranga National Park in the northeast, Sunderbans, Bhitarkanika and Coringa in the eastern coastline and Periyar Tiger Reserve and the Nagarhole National Park in the south.
- Big dangers to Asian Otter populations are destruction of habitats in wetland as a result of the construction of large-scale hydroelectric projects, conversion of wetlands to settlements and agriculture, decrease to prey prey, poaching and contamination of waterways with pesticides.

Topic 9. ASIATIC BLACK BEARS

Important for subject: Environment

Common Name:
Asiatic Black Bear

Scientific Name:
Ursus thibetanus

Lifespan in the Wild:
Upto 25 years

Weight:
Males: Upto 200 kg
Females: Upto 100 kg

Length:
140-170 cm

Cubs per Litter:
Two to four

The estimated population of the Asiatic black bears is

50,000

GEOGRAPHIC RANGE
Jammu & Kashmir, Assam, Sikkim, Arunachal Pradesh

IUCN STATUS

LC NT VU EN CR EW EX

Vulnerable



CONSERVATION MEASURES
Protected under CITES Appendix I and Schedule II of the Indian Wildlife Protection Act.

Major threats to Asiatic black bears- climate change, habitat loss and poaching for body parts.





ASIATIC BLACK BEAR

Crescent moon shaped patch on chest most distinguishable physical feature.

Kashmir Valley Kashmir Valley has bucked the trend of Asiatic black bear (*Ursus thibetanus*) attacks on humans that are rarely documented across the animals' global distribution.

- The transformation of bears' natural habitat to farmlands and orchards is the most important reason behind the ursine attacks in the last 30 years.
- Other causes are the fence that divides India and Pakistan which restricts movement of animals and the new generation of people who aren't comfortable with the coexistence of large predators.

- The study recorded the number of 2,357 Asiatic black bears assaults within the Valley between 2000 to 2020. There were 2,243 attacks which is 95.2 percent of the incidents caused injuries, and 114 attacks, or 4.8 percent of the cases ended that resulted in deaths.

Asiatic Black Bears

- The Asiatic black bear is among eight extinct species belonging to the bear family.
- The medium-sized bear species indigenous to Asia which has adjusted to the arboreal environment.
- It's all over Asia all the way all the way from the Himalayas up to it's Russian Far East.
- It is classified as vulnerable in the Red List of threatened species of the United Nations for Conservation of Nature. is listed under
- Appendix I of CITES and Schedule I of the Wildlife (Protection) Act, 1972.
- The bears can be found in protected areas of 83 across India, spread across five states as well as 2 Union Territories in the Himalayas
- The wolf happens to be an example of a largest carnivore species that have negative interactions with humans in the Indian Himalayas.
- At present, methods that are used to determine the status of populations for Asiatic Black bears of India were restricted to surveys of sign language or genetic testing using hair sample samples.

Topic 10. SOIL ORGANIC CARBON

Important for subject: Environment

Soil Organic Carbon (SOC) as an indicator of the state of soil degradation and the degradation of land is becoming a major component to efforts to mitigate climate change.

- It was the UN climate conference in 2022 also included demands for including soil health in the overall plan and the soil organic carbon (SOC) in the Nationally Determined Contributions (NDCs).
- This becomes more significant, given the context that a number of IPCC reports have highlighted the potential for land-based mitigations for the National Development Plans in the Paris Agreement.

- SOC pool is one the largest carbon stocks on earth, which has about double the amount of carbon as the atmosphere.
- SOC inventory is suggested as a global indicator in the monitoring of soil and land degrading within the UN Sustainable Development Goals (SDGs).
- SOC management on croplands as well as grasslands is believed to be the most effective mitigation potential , starting at USD20 tCO₂-eq-1
- India with its 162 million acres (Mha) of agricultural land as well as 8 Mha of permanent crop land, which represents roughly 16% and about 6% of the global estimates, offers an enormous potential to integrate SOC as part of its nation-wide mitigation strategy.
- In this regard it is crucial to research the importance of establishing SOC as a key indicator for soil health measures.
- Soil microbiome is a steady indicator of the health of the soil. Soil microbe species variety and activity is responsible for many ecosystem services. The greater the amount of microbial activity on the soil the greater is aerobic activity, and healthier the soil and SOC.

Soil Organic Carbon

- Organic carbon from soil (SOC) is derived from animals, plants microbes, plants, leaves and wood, which are mostly located within the first meter or as.
- Organic carbon in soil is a measured part of the soil organic matter. Organic matter is only 21% of soil's weight and plays a significant contribution to the chemical, physical and biological functions of soils used for agriculture.
- Organic matter is a major contributor to retention of nutrients and turnover, oil structure water storage and accessibility as well as the degradation of pollutants, as well as carbon sequestration.
- Organic matter in soil is made up of primarily carbon oxygen, hydrogen and carbon and contains minor amounts of other elements like sulfur, nitrogen, phosphorous as well as calcium, potassium and magnesium found in organic soils.
- The SOM can be divided into 'living' and 'dead' components and can vary from inputs that are very recent such as stubble to mostly decayed materials that may be several hundred years old. Around 10% of the below-ground SOM, including

microorganisms, fauna and roots are 'living'.

Topic 11. BUDGET PUSH FOR MANGROVES

Important for subject: Environment

The Union Budget for 2023-24 has been proposed Mangrove plantations along the coast and on saltpan lands in the framework of MISHTI (Mangrove Initiative to Improve Shoreline Habitats and the Tangible Incomes).

- In the "State of Mangroves in the World" 2022' report of the Global Mangrove Alliance, the mangrove area of the planet is approximately 147000 square kilometers (14.7 million acres).
- According to the Indian State of Forest Report (ISFR) 2021, India has nearly 4992 square kilometers (0.49 million ha) Mangroves.
- In India Mangroves are spread over the 9 States as well as three Union Territories with West Bengal being the largest mangrove area with 2114 square km.
- In the ISFR report also revealed that the mangrove area in India has grown between 4046 square km and 4992 sq kilometers by 2021.

Mangrove plantation program:

- MISHTI is implemented by the convergence of several plans like MGNREGS (Mahatma Gandhi National Rural Employment Grant scheme), CAMPA (Compensatory Afforestation Fund Management and Planning Authority) Fund, and other sources.
- This will also require a lot of cooperation with local community members.
- It has been discovered that the rate of survival for mangrove seedlings and saplings is 50 and 60%, respectively.
- Furthermore it can take 3 years to allow a plant to become stable.
- So a one-time, contract-based planting under MGNREGS and CAMPA may not function effectively without local communities taking over the forest.
- Additionally, MISHTI is in accordance with the Indian Nationally Determined Contributions to creating the additional sink for carbon of 2.5-3 billion tons equivalent to carbon dioxide (CO₂) equivalent in 2030.
- Furthermore, India also joined the Mangrove Alliance for Climate at COP27.

Mangrove Alliance for Climate (MAC)

- It comprises UAE, Indonesia, India, Sri Lanka, Australia, Japan, and Spain.
- It aims to inform and increase awareness all over the world about the importance of mangroves in reducing global warming, and also the potential of mangroves as a solution to climate change.
- However it is important to note that the intergovernmental alliance operates on a non-committal basis which means there aren't any real checks and balances that ensure accountability of members.
- In the end, each party determine their own commitments as well as deadlines for the planting and restoration of mangroves.
- The group members will also collaborate and will assist one another in the process of researching, managing, and protecting coastal zones.

Mangroves

- Mangroves can be described as collections of salt-tolerant plants and trees that thrive within the intertidal areas of the subtropical and tropical coasts.
- They flourish in regions where freshwater mixes with seawater. The sediment is formed by deposits of mud that have been accumulated.
- The mangrove species that are found in the ecosystems of mangroves are classified into:
- Genuine mangroves are characterized by the morphological characteristics of pneumatophores, vivipary, crypto vivipary germination. salt-secreting cells. The number of genuine mangrove species found in India.
- Mangroves associated species Mangroves associates: The species that are found in close proximity to mangroves in their true form. There are 68 mangrove associated species found in India.

Features:

- Saline environment The HTML0 code can be used to live in extreme hostile environments, like high salt levels and low oxygen levels.
- Low oxygen underground tissues of all plants require oxygen to breathe. However, in mangrove environments the oxygen level in soil is either insufficient or completely

absent.

- To breathe to breathe, they create special roots, referred to as pneumatophores.
- Survival in extreme conditions the roots of mangrove trees are submerged in the water, mangroves thrive in the hot, muddy, and salty conditions that could quickly kill many plants.
- Viviparous their seeds sprout while connected to the parent tree. Once the seeds have germinated, the plant develops into an erect propagule.
- Propagules are plant-like structure that could break off from a plant, and create an entirely new plant. For instance, a plant bud sucker or the spore.

Significance:

- Mangroves store and cycle many organic substances chemicals, as well as essential nutrients within the ecosystem of the coastal zone.
- They are among the primary food chain resources available to marine life.
- They provide habitat physical as well as nursery areas for a diverse range of marine species that are of commercial or recreational worth.
- Mangroves also function as storm buffers, decreasing wave and wind action in areas with shallow shorelines.

Indian Mangrove Cover:

- India's contribution to the mangrove cover is 45.8 percent of mangrove coverage throughout South Asia.
- In the Indian State Forest Report 2021, Mangrove cover in India is 4992 sq. Km, which represents 0.15 percent of India's total area.
- The largest Mangrove Forest: The Sundarbans of West Bengal are the largest mangrove forest areas around the world. It is designated as a UNESCO World Heritage Site.
- Then follow Gujarat as well Andaman as well as Nicobar Islands.

Topic 12. ENVIRONMENTAL CONCERNS ABOUT SHIP DISMANTLING***Important for subject: Environment***

Brazil's navy was planning to destroy the shell of the retired plane ship Sao Paulo despite protests from Brazil's environmental ministry.

- The primary concern regarding the sinking of an old ship has to do with the at minimum 9 tons of asbestos within the hull, as well as smaller amounts of other harmful substances like chemicals and oil.
- In the world, around 70 countries have been able to ban asbestos use however, some countries like China, the US, India and China.
- Despite being prohibited from ships since 2002, current estimations show the presence of asbestos "still found in over 65 per cent of vessels, including 50 per cent of all new builds."

Asbestos contamination:

- Asbestos is commonly employed on ships as an insulator and a fire retardant. insulation material to protect people from the continuous loud vibrations that come from engines on ships.
- Asbestos is a compound of silicate that occurs naturally in the natural surroundings and in the mining processes utilized in the extraction of it came from hills that were a major supply of the compound.
- Asbestos is an extremely strong and incombustible fiber that is utilized to prevent fire and for insulation. It also has an extremely high Tensile Strength. It has a myriad of applications, including pipes and roofing sheets made of cement as well as the automotive and textile industries.
- The release of asbestos from cutting the ship in the ocean could release large amounts of asbestos into the ocean, which poses the risk of getting into the food chain.

Others issues

- The presence and elimination of chemicals that deplete the ozone and bilge water that contains the oil and oil sludge anti-fouling paints, polystyrene glass, ash, foam and insulation.
- The discharge of waste into the ocean as well as the surrounding environment of the

recycling facility also pose risky.

- The process can affect the air, water, and soil health, the local ecosystems and biodiversity are affected. Recycling also produces pollution and heavy metals in areas of cutting.

Basel Convention

- The Basel Convention for the control of transboundary movements of hazardous wastes as well as their disposal was signed on March 22, 1989, by Conference of Plenipotentiaries in Basel, Switzerland.
- The purpose of the Basel Convention at the time it was adopted was to stop "toxic trading" or "toxic trade".
- The Basel Convention, which entered into force in 1992, regulates international trade in hazardous wastes. It is important for the dismantling of ships since ships typically contain dangerous materials within its structure.

NGO Shipbreaking Platform

- The NGO Shipbreaking Platform is a international coalition of organizations that are working to stop the damage to the environment and human rights violations caused by current shipbreaking practices, and to ensure secure and sustainable dismantling of ships that are in their final stages.
- The NGO Shipbreaking Platform is a alliance of human, environmental and labour rights organizations.
- The goal of the organization is to come up with sustainable solutions that incorporate the fundamentals of human rights and corporate accountability, as well as ecological justice "polluter pays", producer accountability and sustainable production.

Topic 13. CHILIKA FISHERS ROBBED OF LIVELIHOOD SINCE CYCLONE FANI OPENED NEW MOUTHS

Important for subject: Environment

Its delicate salt gradient has been disturbed, locals have complained about Odisha administration's Chilika Development Authority (CDA) has not been monitoring mouths for new mouths on a regular basis.

- The strong storm surge that was accompanied by extremely strong Cyclone Fani in the early part of May 2019 opened four channels in the Chilika Lake in Odisha.
- They were distinct from the main mouth of the lake, where it opens to the ocean.
- Two of the newly opened mouths were shut at the end of April in 2022, two mouths remain open, which could affect the ecosystem of the lake as well as the lives of those who depend on it.
- The river's mouth moved two kilometres to the north since Cyclone Fani arrived within Chilika Lake and Puri.
- If the mouths that are being constructed remain open and the sea continues to flow into the lake, it could be disastrous for the ecosystem, as Chilika's biochemistry will change.
- Fish catch has dropped by 30-40 percent following Cyclone Fani.

Chilika Lake:

- Chilika is Asia's biggest and second-largest lagoon.
- It is situated on the east coastline in India, located in the State of Odisha and is separated from the vast Bay of Bengal by a tiny area of sand.
- It extends across Puri, Khurda and Ganjam districts in Odisha along the eastern coast of India near the entrance of the Daya River, flowing into the Bay of Bengal, covering more than 1,000 square km.
- It is the most extensive wintering grounds for birds in the Indian subcontinent. It also is the home of a variety of threatened species of animals and plants.
- Since 1981 Chilika Lake was named as the first Indian wetland of international significance as part of the Ramsar Convention.
- One of the main attractions at Chilika is the Irrawaddy dolphins that are frequently seen

on Satpada Island.

- The huge Nalabana Island (Forest of Reeds) that covers about 16 square km within the lagoon was declared an official bird sanctuary in 1987.

Topic 14. ECONOMIC SURVEY: KEY TAKEAWAYS

Important for subject: Economy

On the 31st of January the government presented an Economic Report 2022-23. The Survey set out the future outlook for the growth of India, inflation and unemployment in the coming years.

Economic Survey

- The Economic Survey of India is an annual report published through Finance Ministry. Finance Ministry.
- It outlines the status of the economy of the nation over the last year.
- The report highlights macroeconomic statistics and the progress in the economy of the nation.
- The report also discusses likely economic challenges India could face in the near future and suggests strategies to address these challenges.
- The survey was created by the Economic Division of the Department of Economic Affairs within the Ministry of Finance under the direction under the chief Economic Advisor of India (CEA).
- The Economic Survey of India is each year on the same day prior to that the Union Budget is announced.
- The report is presented by CEA V Anantha Nageswaran after being presented by the Finance Minister in the Parliament.

Economic Survey 2023: The most important takeaways from GDP growth:

- The Survey found that India's growth forecast for FY23 is higher than nearly all major economies.
- The report predicted that the economy would expand by between 6% and -6.8 percent, based on global trends in 2023-24 and the figure of 6.5% a baseline expectation.
- Despite the global uncertainty and slowing global economic growth the growth of India is being fuelled by strong domestic demand and an increase on capital

expenditure.

- The projected growth rate of India, does not have the benefit from a base-effect is an indicator of the country's economic resilience.
- Indian economy in 2022-23 the potential to be Recovered what was lost
- Refreshed what was paused,
- Re-energized what was slowing down during the pandemic as well as after the war in Europe.

The report also identified a few risks that could be negative which could affect the rate of growth:

- The low market demand Indian exports due to weak global growth could increase the trade deficit of India and cause the rupee appreciate.
- Additionally, a prolonged tightening of monetary policy (higher rates of interest) can slow down economic activity during FY24.

Inflation

- The RBI has forecasted the inflation rate to be 8percent in FY23, which is outside of its comfort zone of 2%-6 percent.
- The Survey was positive about inflation rates and trend, as both retail and wholesale inflation are both on the downward slope.
- But, any reemergence of the Covid-19 that is re-emerging in China or a change in the drop in commodity prices could bring dangers to the trajectory of inflation that is to come.

Unemployment

- The Survey revealed that the employment rate has increased during the current fiscal year.
- It also referred towards that periodic labour force survey (PLFS), which revealed that the urban unemployment rate for those who are 15 years old and over fell from 9.8 percent in the September quarter of 2021 to 7.2 1 percent one year later.
- The Survey also highlighted that the decrease in the unemployment rate is also accompanied by an increase in the percentage of the workforce that is actively

engaged.

Capital expense (capex) to be targeted

- Capital expenditure is beginning to boost private investment and the budgetary goal in the amount of Rs 7.5 lakh crores for the fiscal year is anticipated to be accomplished.
- A strong domestic demand and an increase in capital investment will help the growth of the country for FY24.
- The market is in expectation of a rebound on private capex that is fuelled by better balance sheets, the resurging of credit, and the increasing flow into public capex.
- The survey said that the government's thrust on capex, particularly in the infrastructure-intensive sectors like roads and highways, railways, and housing and urban affairs, has longer-term implications for growth.
- Gati Shakti has additionally assisted in speeding up the development of infrastructure.

Foreign Direct Investment (FDI) inflows

- In light of India's rapid growth in its economy and the thriving business environment, the flow of FDI to the country is expected to rise in the coming months.
- According to figures from data from the Department for Promotion of Industry and Internal Trade (DPIIT) Inflows of equity FDI into India fell by 14%, to USD 26.9 billion in the period from April to September of this fiscal year.

Current Account Deficit (CAD)

- The importance of monitoring with care of the deficit in the current account that is likely to increase because of the rising prices for commodities around the world were emphasized.
- The deficit in the country's current account has risen to 4.4 percent in GDP in the period that ended in September, up from 2.2 percent of GDP in the April-June timeframe (RBI Statistics).
- Rupee expected to stay under depreciation pressure
- The tension to the Indian rupee's appreciation could persist due to the consequence of the slowing in exports and the subsequent growth of that balance of payments.

Suggestions made by Survey

- The Survey has advocated for completely removing the LIC (licensing inspection, licensing and conformity) regime to boost the growth of economics, harnessing women's influence (nari shakti) and a renewed attention to energy security and the transition to energy Education and skilling and administrative reforms.
- The study sought to determine initiatives to help make the public sector asset monetisation effective in addition to taking care (by the states) of issues in the power sector.
- The Survey has also placed enough importance upon fiscal consolidation that it says is essential to ensure low interest rates over the long run.

Topic 15. PROMOTING INTERNATIONAL TRADE IN RUPEE TO HELP REDUCE CURRENCY VOLATILITY

Important for subject: Economics

Promotion of international commerce using the local currency will aid to protect the rupee from fluctuations and lower the costs of doing business on the global market, Economic Survey said on Tuesday.

INR as International Currency

- The Survey highlights the efforts in progress to encourage international trade settlements with Indian Rupees.
- The international settlement in rupee gains importance in the context that of US Federal Reserve aggressively hiking the rates of its policy and its hawkish stance.
- If these initiatives are successful the dependence on foreign currency may decrease and make the economy more resilient to shocks from external sources.
- In July 2022, the Reserve Bank of India (RBI) issued a circular that allowed an additional arrangement for the invoicing as well as the payment and settlement of imports and exports using India Rupees (INR) to facilitate the development of global trade, with a particular focus of exports to India and to help support the growing interest in the international trading community for INR as a currency used internationally.
- The framework includes the invoicing of imports and exports in INR, exchange rates

determined by market forces for the currency of trading partner countries, as well as settlement via specific Rupee Vostro accounts which are opened at authorized dealers banks located in India.

- The Survey declares it is important because it could significantly reduce the need for currency exchange. Additionally, it could aid Indian exporters to receive advance payment in Indian Rupees from clients overseas.
- It states that in long run, this could help promote Indian currency as an International currency, once this rupee-based settlement system is in place.

Special Rupee Vostro accounts

- Settlement of commercial transactions in this arrangement will be in Indian Rupees.
- According to Regulation 7(1) of the Foreign Exchange Management (Deposit) Regulations, 2016 Authorized Dealer banks from India have been granted permission to create Rupee Vostro Accounts.
- To settle trade transactions in any country, AD banks in India may establish special Rupee Vostro Accounts with their correspondent bank/s from the trading partner nation.

In order to facilitate to settle international transactions by this agreement, it was agreed that:

- Indian Importers undertaking imports under this method shall pay in Indian rupees, which will be credit to the Vostro account of the Special Vostro account at the bank that is the correspondent of the country that is the partner and against invoices for the purchase of goods or services from the overseas vendor or the supplier.
- Indian exporters that are involved in exports of services and goods via this mechanism will be paid the export profits in Indian rupees from the balances on the designated Special Vostro account of the bank that is the correspondent of the country that is the partner.
- Utilization of Surplus Balance the Rupee surplus balance may be used to fund permissible current and capital account transactions as per an agreement between the parties.
- The amount in the Special Vostro Accounts is available to make payments for

investments and projects.

Advance flow management for exports and imports

- It is possible to invest in Treasury Securities, bills of the Government and other securities. according to the current guidelines and prescribed limits, crucial in the context of FEMA and similar provisions in the statutory law.

Vostro account:

- Vostro is a Latin word that means "your," as in "your account."
- Vostro accounts are account that a correspondent bank is able to hold on behalf of a different bank.
- A vostro account is set up to allow foreign correspondent banks to serve like an agent or offer the services of an intermediary to the domestic bank.
- Vostro account services are able to execute wire transfers, executing international exchange, permitting withdrawals and deposits, and speeding international trade.
- For instance the situation where an Spanish life insurance firm contacts an U.S. bank to manage funds on Spanish life insurance company's behalf the account is considered by the bank holding the account as an account belonging to the insurer.
- From the viewpoint of the foreign correspondent bank's from the point of view of the foreign correspondent bank the money that are held by different banks is known as Vostro accounts and are converted to locally-based currency.
- From the standpoint of domestic banks the money deposit at correspondent banks are classified in the context of "nostro" accounts.
- The Nostro account is credited in the exchange rate of the correspondent bank.

Topic 16. SHIPBUILDING INDUSTRY CAN BOLSTER ‘AATMANIRBHAR BHARAT’, SAYS SURVEY

Important for subject: Economy

The shipbuilding industry was identified as an industry that is strategically significant due to its contribution to security of energy, defence of the nation as well as the growth in the development of the heavy-engineering sector in the Economic Survey, 2022-23, it was noted that it is able to enhance the amount of industry's contribution to the services sector to

national GDP.

- Based on International statistics for shipbuilding If one decides to take the conservative Marginal Consumption Ratio to GDP (MCGR) in the range of 0.45 (f) or the shipbuilding industry then it would mean that the investment multiplier will be around 1.82.
- For instance, an injection of around 1.5 lakh crore in 1.5 lakh crore into naval shipbuilding projects could result in an amount of 2.73 lakh crore in the industry of shipbuilding because of the multi-plier effect etc," the survey said.

Investment Multiplier

- Investment multiplier is an essential element of the economic theories proposed by renowned economics expert John Maynard Keynes.
- Based on this idea it is believed that in the instance growth in investments either private or public, that could take the form of private consumption or government spending in the economy, there will be an equivalent growth in the
- Gross Domestic Product (GDP) of the economy by higher value than the investment amount.
- In simple terms, an investment multiplier is the growth in the total earnings of the economy because of an increase in the amount of investment made by the government through new projects.
- The amount of this multiplier depends on the choices of households within an economy, in terms that are consuming (which is also known as the marginal propensity for consumption) and the saving (known as the marginal propensity of saving).

The multiplier is shown using the formula below,

$$K = DY / DI$$

Where,

DY = Increase in GDP or National Income

DI = Increase in Investment

Marginal Propensity to Consume (MPC)

- It measures the proportional rise in the consumption rate with an increasing income. Or, we could say that it measures the percentage of additional salary that is spent on the purchase of services and goods, instead of conserving it.
- Marginal Propensity to Purchase or MPC is determined by the income level. It can vary according to income levels, and it could be seen that MPC is lower for those with more income.
- MPC can be calculated by determining the increase of consumption divided by increase in income.

Marginal Propensity to Save (MPS)

- It is utilized by economists to determine the relation between income changes and the changes in savings. It refers to the amount of an increase in pay that a consumer is able to save rather than spending on items or services.
- Calculation is made by dividing the savings change by the increase in income.
- A greater MPS suggests that even small fluctuations in income cause large fluctuations in savings, and vice versa.

Topic 17. CAPEX-LED GROWTH

Important for subject: Economy

Capex-led growth is bringing back animal spirits and reduce the burden of debt: Economic Survey.

- Survey revealed that the government's focus on capex, specifically in infrastructure-intensive sectors like highways and roads railways, urban and housing will have long-term consequences for growth.
- The primary reason for the government's growth optimism for Fiscal year 2014 is the belief that there will be a revival in private capex. This is driven by better balance sheets, the resurgence of credit, and the increasing flow out of the public sector capex.
- It is anticipated that growth will be strong in FY24 due to an robust credit disbursement and the capital investment cycle is likely to develop in India due to the improvement of their balance sheets in banks and the corporate sectors.
- On the other side, capital expenditure boosts overall demand and increases private expenditure in times of risk-aversion as well as increases the supply-side capacity in

the long run.

Capital expenses

- Capital expenditures are those which result in some liabilities or assets to the state. They include loans to public companies and credit to States, Union Territories and foreign governments, as well as buying valuables.
- It is long-term investments that require a huge amounts of money to acquire long-term assets such as manufacturing equipment. The assets purchased provide income-generating value over the course of years.
- Thus it is the price of such assets is recuperated through year-to-year depreciation throughout the time that the property. In essence, the cost of expenditure to initiate current as well as future economic benefits is in fact capital expenditure.

Capital expenditure refers to money used for the following purposes:

1. Acquiring tangible and fixed assets
2. The upgrade of an asset
3. Restoring an asset that is already in use
4. Repayment of the loan

The significance of capital expenditure

- Effect of Multiplier of HTML0 Capex has the greatest multiplier impact (change in the value of rupees of output in relation to an increase in the value in rupee of the expenditure). The multiplier effect is triggered by the expansion of ancillary industries, the creation of jobs.
- Work productivity On both sides, Capex helps to increase productivity in the workplace.
- Stabiliser of macroeconomics capital expenditure can be an efficient tool to fiscal policy that is countercyclical and serves as a macroeconomic stabilizer.
- Generating revenue the capital expenditures that lead to the development of assets. are of a long-term nature . They allow an economy generate revenue for a number of years and improve operational efficiency..
- Reduction in liability In addition to it being the development of assets repaying loans is also a capital expense since it decreases the liability.

- Growth in the economy Capex from the government encourages private investment and boosts production capacity, increasing economic growth that in turn generates many more jobs.
- Crowding-in investment It is a occurrence when increased government spending leads to an increase in economic growth and consequently encourages companies to invest because of the existence of more profitable investment opportunities.
- The effect of crowding-in is seen whenever there's an increased in private investments because of increased public investment, such as by the building or upgrading of infrastructures, such as roads highways, waterways, sanitation ports, airports and ports railways, etc.

Topic 18. REMITTANCES HIGH, LOW TAX PAYMENT

Important for subject: Economy

The Finance Secretary stated that the steps have been determined based on the fact that individuals are paying high-value tax remittances, however their tax returns are not reflecting the correct proportion of income tax payment.

- To identify high-value expenditure and tax evasion of high-net-worth individuals The government announced an drastic increase in tax collection at the source (TCS) rate that was increased to 20% from 5 percent, for overseas travel packages and certain remittances from India under the scheme for remittances that is liberalised (LRS)
- The proposal has been made with the limitation of LRS transfer of funds for medical and education for medical treatment
- The Finance Bill, through the Budget 2023-24, amended Section 206C of the Income Tax Act levying more TCS for overseas tour packages.
- Additionally, 20 per cent TCS will be imposed on certain remittances with no threshold unlike the current 5 percent tax rate when funds that exceed 7 lakhs of rupees are sent out from India as part of the Liberalised Remittance Scheme of the RBI.
- The amendments will take effect on July 1, 2023.

Topic 19. PRODUCTS AVAILABLE IN THE SECONDARY MARKET***Important for subject: Economy***

Here are the principal instruments and financial products that are traded on this secondary market

- Equity Amount of ownership in a company that is held by holders of its preferred and common stock. The different kinds that are equity share are the following:

Equity Shares:

- Equity shares, often called an ordinary share, also refers to the kind of fractional ownership which the shareholder, in the role of the owner of a fractional share, assumes the highest risk in entrepreneurship with the business venture. Shareholders of these shares are part of the business and enjoy voting rights.
- Rights Issue or Rights Shares: The offering of shares to shareholders in proportion to the existing securities.
- Bonus shares Shares that are that are issued by the company to their shareholders at no cost through capitalization of reserves of profits during the previous years.
- Preferred Stock or Preference shares owners of these types of shares have the right to an annual fixed dividend or dividend at a fixed amount to be paid out regularly prior to when dividends can be paid to equity shares. They also have priority over equity shareholders when it comes to paying surplus. However, in cases of liquidation their claims are lower than the claims of the business's creditors, bondholders, or holders of debentures.
- Cumulative Preference shares are a kind of preference share on which the dividend is accrued if unpaid. All arrears due to dividends from preference shares must be paid before the dividend is paid on equity shares.
- Cumulative Convertible Preference shares are a type of preference shares in which the dividend due on the same shares accumulates in the event that it is not paid. At a specific date the shares are transformed into equity capital of the company.
- Participating Preference Share This is the right of certain shareholders with preference to share in profits following a specific fixed dividend is paid. Participation rights are linked to the amount of dividends paid to equity shares that are above the specified amount.

- **Security Receipts** Security receipt is the receipt or any other security, given by a securitisation or reconstruction firm to any institutional buyer under a scheme which demonstrates the purchase, or the acquisition by the holder of the receipt, of an undiluted right, title, or an interest in the asset that is involved in securitisation.
- **Treasury securities (G-Secs):** These are sovereign (credit risk-free) coupons bearing instruments that originate from the Reserve Bank of India on behalf of Government of India, in place of the central government's market borrowing program.
- They have fixed interest rates that are payable on specific dates on a semi-annual basis. They are offered in a many different maturities, ranging from short-dated (less than one calendar year) to long-dated (up to 20 years).
- **Debentures** are bonds issued by a business with an interest rate that is fixed typically due half-yearly at certain dates, and principal amount due on a particular date of redemption for the debentures.
- Debentures are usually secured or secured against the assets of the business in favour of the debenture owner.
- **Bond:** A negotiable certificate evidencing indebtedness. It is usually secured. A debt security typically issued by a corporation or a municipality, or a an agency of the government.
- The bond holder gives money to the issuer, and in return, the issuer agrees to pay the loan amount by the specified date of maturity. The issuer typically will make periodic interest over the duration of the loan. The different types of bonds are as follows:
 - **Zero Coupon Bond:** Bond issued at an interest rate and then repaid with a face value.
 - There is no periodic interest paid. A difference in the issue price and the redemption price is the price paid to the owner. The person who purchases these bonds gets only one installments and this is at date of maturity.
 - **Convertible Bond:** A bond that gives the buyer the opportunity of converting the bond to equity for an agreed-upon conversion cost.
 - **Commercial paper** is a short-term guarantee to repay a specific amount, which is put on the market directly or through an intermediary.
 - It is generally issued by businesses with excellent credit standing and is the promissory note, which is redeemable at par with the holder upon maturity. It therefore isn't a requirement for any guarantee. Commercial paper can be described as

a market instrument that is typically issued for a the duration of 90 days.

- Treasury Bills Short-term (up up to 91 calendar days) bearer discount security that is issued by the government to finance its cash needs.

Topic 20. GREEN CHANNEL

Important for subject: Economy

In keeping with the requirements of the market as well as the best practices of other jurisdictions In keeping with the needs of the market and best practices in other jurisdictions, the Commission in its notification of 13 August 2019 changed the Competition Commission of India (Procedure for the conduct of business in connection with combinations)

- Regulations, 2011 and established an automated method of approving combination routes via the 'Green Channel' route.
- According to this procedure the combination is considered to be approved after filing the required notice in the format prescribed and acknowledging it, which is crucial for the Commission to determine that the transaction falls within the Green Channel scheme. This method will significantly cut down on costs and time for transactions.
- The Green Channel is expected to continue to ensure speedy, clear and accountable examination of cases in combination, find equilibrium between enforcement and facilitation and establish an environment of compliance to help to boost economic growth.

Topic 21. GOLDSILKS BALANCE

Important for subject: Economy

Goldilocks ' rate and balance are defined by an economic system that is not too hot (inflationary) and is not in the state of recession. i.e. the currency isn't too strong or weak in the global markets.

- It indicates that the economic stability is maintained with constant growth and low interest rates. It also indicates low unemployment.
- A Goldilock State of economy is believed to be perfect for investing because the interest rates are low and if steady increase is seen that is, stocks and bonds will remain valuable in the long-term and thus will yield good profits.
- However, a too rapid pace of growth may lead to an inflationary environment and

impact investors negatively.

- Goldilocks ' economies are not permanent by nature as shown by the cycles of boom and bust.

Topic 22. PARIS CLUB LIKELY TO PROVIDE FINANCIAL ASSURANCES TO IMF ON SRI LANKA DEBT

Important for subject: International relations

The Paris Club, an informal group of nations that are creditor-friendly will offer financial guarantees for the International Monetary Fund on Sri Lanka's debt, Reuters has reported quoting two sources that aren't named.

- A commitment of the Paris Club, as well as other bilateral creditors constitutes one of the prerequisites which Sri Lanka has to fulfil to allow the IMF to release the \$2.9 billion bailout package to the nation struggling to recover after almost went into an economic crisis that was severe.

What is 'Paris Club' in Economics?

- The group can be described as an informal group of official representatives from major countries that are creditor nations whose mission is to come up with sustainable, coordinated solutions to the issues of paying faced by countries that are in debt.
- Paris Club creditors provide debt treatment to countries that are in debt through rescheduling, which refers to postponement of debt and, in event of concessional rescheduling in the debt service obligation for an agreed-upon time (flow treatment) or up to the date specified (stock treatment).
- 1956, when a meeting was held during which Argentina was able to agree to meet with its creditors from the public sector in Paris. The goal is to come up with sustainable debt relief solutions for countries not able to pay back the bilateral loan.
- It's an organization in which official creditors gather to address payment problems that debtor countries face. All 22 countries are members of the group known as Organisation for Economic Co-operation and Development (OECD).
- The Paris Club was established gradually in the year 1956 when it was the very first meeting among Argentina and its creditors public was held in Paris.

- The Paris Club treats public claims (that is the claims of governments of countries that are in debt and those owed by private companies) that are that are guaranteed by the public sectors to Paris Club members.
- It is identical to its counterpart, the London Club, which was a bankers' group for commercial use who were formed in 1976 in order to tackle the financial issues of Zaire and focuses on providing different forms of debt relief to nations which are struggling financially due to their high debt burden.
- There are at present 22 members who are permanent members in the Paris Club- The members include: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Japan, Netherlands, Norway, Russia, South Korea, Spain, Sweden, Switzerland, the United Kingdom and the United States.
- Contrary to China as well as India, Japan is a member of the Paris Club.

What is the story of how Paris Club been involved in loans?

- According to information posted on the website of the organization, since its inception since its inception, the Paris Club has reached 478 agreements with 102 countries that are debtors. From 1956 onward, amount of debt that is a part of the Paris Club agreements amounts to 614 billion dollars.
- It is based on the principle of cooperation and mutual respect. Any agreement made with the country of the debtor applies equally to all Paris Club creditors.
- A country in debt that has signed the agreement of its Paris Club creditors, should not accept from non-Paris Club bilateral and commercial creditors terms of treatment of its debts which are less favourable for the debtor than the terms agreed by Paris Club creditors. Paris Club.

The function that the Paris Club over time

- The Paris group of countries led bilateral lending in the latter century, but their power has declined over the last two decades or so, with the rise of China as the world's leading bilateral lender.

Topic 23. SWEDEN AND FINLAND VOW JOINT ENTRY

Important for subject: International relations

NATO membership Process

- NATO is known as "an " open door policy" regarding new members -that is, every European country can apply for membership provided they meet certain standards and the existing members have a common understanding.
- A country cannot legally "apply" to join; Article 10 of the founding treaty stipulates that after a country has expressed an interest, members "may, by unanimous agreement, invite any other European State in a position to further the principles of this Treaty ... to accede."
- The ratification process for new members could take a full year, because legislators from all the 30 current members must approve the new members.
- Each of Finland as well as Sweden already have many of the criteria for membership. These include having a functioning democratic system built upon a marketplace economy, respecting the rights of minorities and agreeing to settle conflict peacefully; the capacity and will to make a significant militarily significant contribution NATO missions; and committing to democratic civil-military relations as well as institutions.

What is NATO the benefits of membership in NATO?

- The reason that most countries sign up to NATO is due to Article 5 of the North Atlantic Treaty which states that all signatories will consider the attack of one as an attack on all.
- The Article 5 has been the cornerstone for the NATO alliance ever from the time NATO was established in 1949 as a counterweight to Soviet Union.
- The goal of the treaty as well as Article five specifically was discourage the Soviets from pursuing liberal democracies with no power in the military.
- Article 5 ensures that all the resources of the alliance, including the enormous US military, can be utilized to defend any one member country like smaller countries which would be defenceless without allies. Iceland for instance, does not have a standing army.

Topic 24. CANADA COMMITS TO TAKING IN 10000 UYGHUR REFUGEES FROM 2024

Important for subject: International relations

Canada's Parliament approved a motion unanimously on Wednesday, allowing 10000 Uyghur refugees who have fled China but now face demands to be returned.

- The move is based on a move in February 2021 made by Canadian lawmakers to declare China's policies towards Uyghurs as well as the other Turkic Muslims in its north western Xinjiang territory as genocide.
- Rights groups estimate that at least 1 million Uyghurs, as well as other predominantly Muslim ethnic minorities are imprisoned in camps for internment in the region. China can also be accused of forcing sterilization on women and imposing forced labor

Uighurs:

- The Uighurs are a Muslim ethnic minority who have a language that is similar to Turkish and are ethnically and culturally close than Central Asia than the rest of China are located in Xinjiang which is the largest and westernmost region of the Chinese administrative zones.
- Up until recently they were the largest group within Xinjiang however, huge settlements registered and unregistered consisting of Han Chinese and heavy troop deployments have probably changed the situation.
- In addition to cultural and ethnic dissonance the tensions are due to economic reasons since China's rapid growth has helped cities like Kashgar and Urumqi and young, skilled Han Chinese from eastern regions are moving to Xinjiang and have taken the highest paying jobs and leading to a rift among the native people.
- In Beijing's official story it is stated that the majority of Uighur terrorist attacks are committed in the hands of an organization called the East Turkestan Islamic Movement, which is a group seeking to create an autonomous East Turkestan state in China.
- China has been criticised in various forums for its violations of human rights of Uighur populace.

Topic 25. COOPERATION IN TRILATERAL FRAMEWORK

Important for subject: International Relations

India, France and the United Arab Emirates declared their mutual intention to establish an "trilateral cooperation initiative" to cooperate on nuclear energy, and to look at opportunities within India, France and the Indian Ocean region.

- A trio of countries discussed cooperation within the trilateral framework, in order to encourage co-production and compatibility in the field of defence and to combat infectious diseases.
- A series of trilateral meetings will be held within the context to the Indian presidency at the G-20 and UNFCCC the COP28 that will take place in the UAE between November and December 2023.
- The trilateral first came up in the middle of the year when three Ministers the Dr. Jaishankar, France's Catherine Colonna and the UAE's Abdullah bin Zayed Al Nahyan -- had a meeting at the sidelines of UN General Assembly in New York in September 2022.

Collaboration to combat Climate Change:

- This trilateral cooperation project is focused on nuclear and solar energy, fighting climate change, and the protection of biodiversity.
- The project is expected to serve as a platform to increase cooperation in viable projects that are shared between development organizations of three countries. They will also seek to bring their technological, economic and social policies to the goals in the Paris Agreement.
- The three nations also agreed to further expand their cooperation by implementing initiatives like such as the Mangrove Alliance for Climate led by the UAE and the Indo-Pacific Parks Partnership led by India and France.
- It was decided that the three countries must concentrate on the most important issues like the pollution caused by single use plastics, desertification and food security in the framework of the International Year of Millets-2023.
- They also highlighted their desire to work together on the subject of circular economy, under the guidance the Indian Mission LiFE.

Towards 'One Health':

- In addition, France, India and the UAE have also agreed to strengthen co-operation in the area of fighting pandemics and diseases and cooperating in the area of vaccination.
- In this context collaboration with multilateral organizations like the World Health Organization (WHO) Gavi, the Vaccine Alliance, the Global Fund as well as Unitaaid will be promoted.
- In addition the three countries have plans to establish concrete cooperation in the implementation of the "One Health" approach and help to build local capacities for biomedical technology and production within the developing world.
- One Health is an approach which acknowledges that the health of humans is inextricably linked with the well-being of animals, as well as our environment.

Collaboration in Defence Sector:

- Foreign Ministers from three countries also met to discuss collaboration in the trilateral
- Framework that promotes the integration, joint development, and co-production, while identifying ways of further cooperation and training the defence forces of each of the countries.
- The establishment of trilateral cooperation among relevant research and academic institutions, and efforts to encourage co-innovation technological transfer, entrepreneurialism will be encouraged.

Topic 26. POTENTIAL ENLARGEMENT OF THE EUROPEAN UNION

Important for subject: International Relations



The following are eight candidates recognized for the membership of the European Union:

- Turkey (since 1999), North Macedonia (2005), Montenegro (2010), Serbia (2012), Albania (2014), Moldova (2022), Ukraine (2022), and Bosnia and Herzegovina (2022).
- Kosovo (whose independence isn't recognized in the five EU members) and Georgia officially submitted their applications to join the EU in 2022. They are thought to be potential members by members of the European Union.
- Montenegro as well as Serbia are the more advanced applicants are expected to join sooner than other candidates.
- Due to several factors due to a variety of factors, discussions between the United States and Turkey are at a blockade.
- Every country which meets the requirements to be a member can apply to be considered for EU membership.

What is the Copenhagen Criteria?

- The Criteria of Copenhagen refers to the requirements that countries who are candidates must meet before they are allowed to become members of the European

Union.

- The criteria was established in 1993 by Copenhagen European Council, and was later strengthened in 1995 through the Madrid European Council.
- Copenhagen Criteria are also the guidelines set through the European Council in 1993 in Denmark, Copenhagen, which determines if a country is eligible to join in the European Union.
- In order to be an official part of the EU The three conditions to be fulfilled comprise: Stability of institutions guaranteeing democratic rule of law as well as human rights and the protection and respect of minorities.
- The existence of an efficient market economy and the capacity to handle market forces and competition within the Union.
- The capacity to fulfill the obligations of membership, including respect for the objectives of the political, economic and the monetary union.

Criteria for Membership

- The European Community always monitors the progress of states that have submitted their applications for EU admission.
- Three documents serve as the basis for defining what constitutes European Union membership criteria.

This includes:

- Article 49 of the 1992 Maastricht Treaty
- A 1993 declaration by the European Council in Copenhagen (includes the legislative, political, and economic policies)
- Framework for negotiations that includes specific terms for each candidate nation.

Status of candidate country status

- The status of candidate country is granted through the European Council on the basis of an opinion of the European Commission, drawn out following the submission of an application for membership in the European Union (EU) by the concerned country.
- Status as a candidate country doesn't confer an automatic right to be a member of an EU.

- The Commission examines the application in light of the criteria for accession (Copenhagen criteria) The process of accession begins by implementing an European Council decision to open talks on a possible accession.
- Based on the situation, a country that is a candidate might be required to implement an overhaul process in order to bring their laws to be in line with the EU acquis, and also to improve their infrastructure and administrative capacity should it be necessary.
- The process for gaining accession is built on the pre-accession plan that offers tools like financial assistance.
- Membership and accession to the EU is dependent on the advancement made by the prospective state, which are periodically evaluated as well as monitored by the Commission.

Topic 27. INDIA SEMICONDUCTOR MISSION (ISM)

Important for subject: Science and Technology

India Semiconductor Mission (ISM) was established as the Independent Business Division within Digital India Corporation with the financial and administrative autonomy to design and execute India's long-term plans for the development of manufacturing facilities for display and semiconductors and the semiconductor design ecosystem.

- ISM serves as the central agency responsible for the efficient, coherent and seamless implementation of the program to growth of the semiconductor manufacturing infrastructure in India.

Goals of the ISM are:

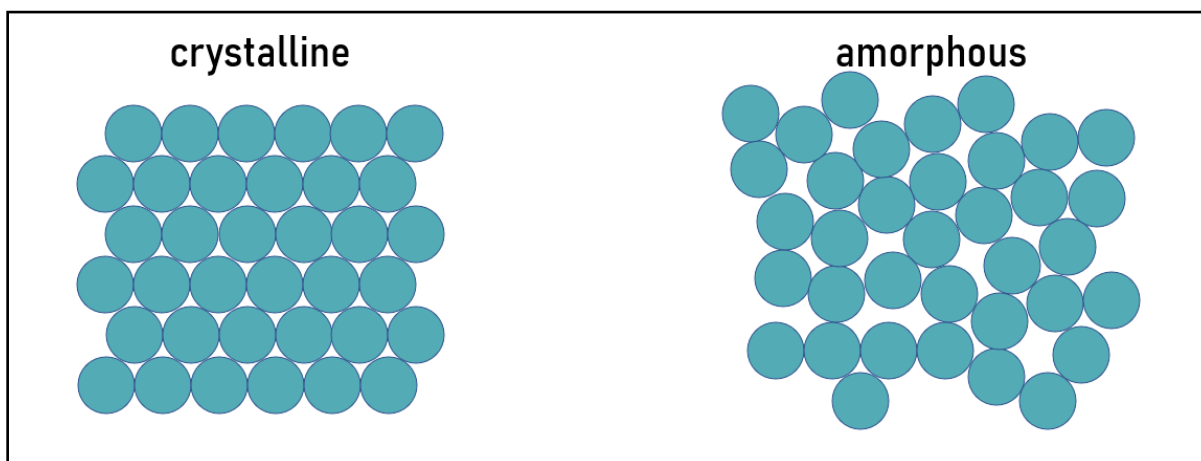
- Create a comprehensive, long-term plan to develop sustainable semiconductors and manufacturing facilities for display and an ecosystem for semiconductor design within the country, in collaboration with the government ministries / departments/agencies industry, academia.
- Facilitate the use of safe microelectronics as well as establishing a an established supply chain for semiconductors that includes special chemicals, raw materials gases, and manufacturing equipment.
- Allow for a multi-fold increase in the Indian electronic design by giving necessary support in the form Electronic Design Automation (EDA) tools, foundry services ,

and other mechanisms that are suitable for early stage startups.

- Facilitate and promote local Intellectual Property (IP) generation.
- Incentivize, encourage and facilitate Transfer of Technologies (ToT).
- Find the best mechanisms to leverage economies of scale in the Indian semiconductor and display industries.
- Allow the most cutting-edge research in semiconductors as well as display industry. This includes evolutionary and innovative technologies by granting global collaborations, grants and other mechanisms within research and academia organizations, industry, and by establishing Centres of Excellence (CoEs).
- Create partnerships and collaboration programs with international and national organizations as well as institutions and industries for creating collaboration in research, commercialization and development of skills.

Topic 28. AMORPHOUS ICE

Important for subject: Science and technology



Scientists have invented a new kind of ice known as Amorphous Ice that matches the structure and density of water.

- The ice is known as medium-density Amorphous Ice.
- Researchers shook normal Ice in a small bottle with stainless steel balls that were centimetres wide with temperatures as low as (between) 200 degC to make this variant that is the first time it has been observed. The ice formed white powdered particles which stuck to the metal balls.

Amorphous Ice:

- Amorphous Ice (non-crystalline and also "vitreous" ice) is an amorphous solid type of water.
- When water freezes in the process, it crystallizes and its molecules are put together in the hexagonal solid structure we refer to as the ice. Amorphous ice is not able to maintain long-range organization in its molecular arrangements.
- Amorphous ice can be made through quick cooling and cooling off of water (so the molecules don't get enough time to build the crystal lattice) or by compressing normal Ice at low temperatures.
- While the majority of the water on Earth is the well-known crystallized ice amorphous glaciers dominate in the depths of the interstellar medium, which makes it the most typical structure of H₂O in the universe in general.
- Sorts just because there's various crystalline forms that comprise the ice (currently more than 17 are recognized) There are distinct forms of amorphous Ice that are distinguished by their density.

Formation

- Amorphous ice can be created by cooling liquid water until it reaches its glass transition temperatures (about 130 K, or about 137 degrees Celsius) in milliseconds in order to prevent crystal nucleation that occurs spontaneously.
- Pressure is a different element in the creation of amorphous ice. variations in pressure could result in one form changing to another.
- Cryoprotectants can be added into water to decrease the melting point (like antifreeze) and improve viscosity, which hinders the growth of crystals.

Topic 29. NATIONAL CENTRE FOR BIOLOGICAL SCIENCES (NCBS)

Important for subject: Science and technology

From papers dating back to 1913 to a 1986 letter of support from Manmohan Singh to MS Swaminathan, a temperature-controlled space at the National Centre for Biological Sciences (NCBS) in Bengaluru tells the story of the evolution of scientific work in India over the course of a century.

- The centre has 24 collections that include more than 150,000 scientific objects that are paper-based, such as manuscripts negatives, photographs and books, audio recordings,

fine art and more.

National Centre for Biological Sciences

- National Centre for Biological Sciences (NCBS) in Bangalore, Karnataka, is an research center that is specialised for biology research.
- It is element of Tata Institute of Fundamental Research (TIFR) within the Department of Atomic Energy of the Government of India.
- The purpose of NCBS is to conduct basic and interdisciplinary research that focuses on the frontiers of biology.
- The research areas of the faculty are within four broad areas, ranging in the field of studying single molecules all the way to system biology.
- NCBS is focused in fundamental research across a variety of disciplines that are related to Biology including Biochemistry, Biophysics, Bioinformatics, Neurobiology, Cellular Organization and Signalling Genetics and the development process and Theories and Modelling of Biological Systems, Ecology and Evolution etc.

Topic 30. RARE EARTH ELEMENTS AND CRITICAL MINERALS

Important for subject: Geography

The rare earth element and crucial minerals will become the next geopolitical battlefields:

Economic Survey

- REE along with CM are crucial for generating green energy (RE). The issue is that they're produced in a handful of countries and processed in less countries.
- A global coordinated energy transition to non-fossil energy sources may be difficult to achieve without sufficient REE and CM aren't in place. This will leave fossil fuel-based assets unaffected by the economies of many countries.
- The survey revealed that while there is a demand CMs is expected to grow because of the increasing global popularity and focus on RE and RE, the world CM production chain concentrated and not evenly dispersed.
- The uneven allocation of resource can pose a supply risk when it comes to its increased demand.
- A meticulously designed comprehensive mineral strategy will decrease our

dependence and solve the issues in the near future. The country has its own resources of molybdenum, nickel, cobalt and heavy REEs however, further exploration would be necessary to assess the amount of these reserves.

- There is an necessity to develop strategic mineral reserves on the plans of reserves of strategic petroleum to guarantee an ongoing supply of minerals. Additionally, policymakers should think about spending money on internal research, including technological advancement to explore and mine processing as well as the advancement of Recycling, Reusing, and Repurposing (R3) technology.

Rare earth elements:

- They are a group comprised of seventeen chemical elements that are part of the periodic table particularly that of the 15 lanthanides, plus scandium (Atomic Number 21) and Yttrium (Atomic Number 39).
- Lanthanide series includes the 15 chemical elements of the metallic that have number atomic codes 57-71 starting with lanthanum and ending with lutetium.
- Scandium and yttrium can be classified as rare earth elements because they typically found in the same deposits of ore like lanthanides. They also exhibit similar chemical properties. However, they have distinct magnetic and electronic characteristics.
- Cerium (AN 58) is the most plentiful of rare earth elements.
- Their hues range in the range of Shiny Silver up to Iron Gray. They are malleable, soft and flexible and often reacting, particularly at higher temperatures or when they are finely divided.
- Its applications range across Civilian (Smart phones laptops, laptops and catalysts for refining petroleum) to nuclear-related applications. Rare minerals are vital for electric vehicles drones, wind turbines and electric vehicles.
- China is the biggest reserves (37 percent) and is then Brazil as well as Vietnam (18 per cent both), Russia (15 percent) and the rest of the states (12 per cent). Deng Xiaoping once said that the Middle East has oil and China has rare earth.

Why are these elements referred to RARE?

- There's an abundance of precious earths. However, their extraction is a challenge (Requires skilled workers, capital heavy, environmental issues).

Critical Minerals

- Critical minerals are minerals that form the elements that make up the foundation of modern technologies, and are at danger of disruptions in supply chain.
- They are now utilized in a variety of ways, from computers, mobile phones, batteries electric vehicles, and renewable technologies such as wind turbines and solar panels.
- Based on their own requirements and strategic goals each country creates its individual lists.
- These lists usually contain the minerals graphite and lithium rare earths, cobalt as well as silicon which is an essential mineral that is used to make solar panels, computer chips and batteries.
- Aerospace, communications, and defence industries are also dependent on minerals that are used to make drones, fighter jets, radio sets, and other vital equipment.

What is the significance of this resource?

- As nations around the globe are accelerating their shift towards a clean energy and a digital economy these essential resources are essential for the system that powers the change.
- Any supply shock could impact the economy as well as the strategic autonomy of the country that is heavily dependent on other countries to obtain crucial minerals.
- But the supply risk is because of the limited supply increasing demand and a complicated process value chains.
- The complex supply chain is interrupted by hostile regimes or because of unstable political regions.
- They are vital because the world is rapidly transitioning from a fossil fuel intensive to a mineral-rich energy system.

Topic 31. EMPOWER LOCAL COMMUNITIES TO CONSERVE, SUSTAINABLY USE HIMALAYAN RESOURCES

Important for subject: Geography

The recent sinking of Joshimath

Himalayan ecology:

- The Himalayas, which were formed fifty millennia ago because the Indian landmass crossing the prehistoric tethys ocean and then slid to the Asian mainland, are still quite fragile.
- The Himalayas are still slowly rising and are prone to earthquakes. As the Himalayas developed, the slope was covered in trees composed of oak and rhododendron which securely held the soil and water, preventing land slides and erosion.
- Human settlements were established without destroying the forest, Joshimath is one such older settlements.

The exploitation of Himalayan forest:

- Forest exploitation:
- The circumstances changed during the British colonial times. Colonial powers were primarily focused on resource extraction.
- British began to lease the forests to the ruler of Tehri in 1905.
- As these reserve forest areas were delineated there were reports from officials that they were unable to sustain commercially and suggested that they be transformed into community-managed forests.
- The government did not agree, but included a provision within the Indian Forest Act 1927, to declare forest reserves as village forest and hand their management to local communities.
- In the initial van panchayats (village forest councils) were constituted in the 1930s in Garhwal and Kumaon Himalayas.
- Forest management under the colonial policy was not stopped even after Independence and has gradually weakened the highly effective van panchayats.

Water exploitation:

- There are many Himalayan area's rivers have also been sucked up due to the quarrying limestone, which is essential to build roads and structures.
- The waters of these rivers like those of Mussoorie are becoming broader and have destroyed the farms.
- The government had ordered that mining stop after it was decided that the expense of degrading the farmland was greater than the benefits of mining.
- However the courts issued an end to this order however, the miners continued, with devastating effects.
- Projects like Tehri dam are involved in accelerating the impacts of natural disasters, as witnessed during 2021's Chamoli flash flooding.
- Attention should be given to Himalayan regions that have capacity and the attention should shift to restoration of the Himalayan ecosystem by promoting sustainable development and conservation.
- Van panchayats must be expanded to include an amendment to the Community forest Rights provision of the Forest Rights Act. The effective implementation of the amending the constitution with the 73rd and.

The capacity of carrying ecologically:

- Carrying capacity is the highest amount of people an ecosystem can sustainably sustain without deteriorating the ecosystem.
- The death of a person and the long-term damage to ecosystems occur when a population is greater than the capacity to support the ecosystem.
- Predator-prey interaction, resource usage and the amount of population within an ecosystem affect the carrying capacity of hydropower projects built by the department since the establishment of the state barrage at Uttarkashi the 304MW Power House at Dharasu

Topic 32. ON JOSHIMATH: HYDROPOWER PROJECTS IN THE HIMALAYA SHOULD BE RECONSIDERED GIVEN RECENT CRISIS

Important for subject: Geography

The current crisis that has been raging within Joshimath over more than one month has prompted discussions on the significance for hydropower power in the Himalayan region. Two years ago the event of a glacier ruptured and brought about doubts about what was happening with the Rishiganga hydroelectric power project located in Uttarakhand.

Projects in hydropower (HPP):

- The term "green" refers to as green power since it produces electricity by the flow and flow of natural water, without emitting emissions or releasing pollutants.
- It does not also rely on fossil fuels.

Environmental impact:

- Large-scale hydroelectric dams have a negative impact on local communities and ecosystems They cause displacement of people and lead to the loss of habitats for fish and other wildlife.
- Concerns over the possibility of conflicts over water resources within the region.
- Dam construction can alter river flow that can result in variations in temperature of the water as well as the chemistry.
- It could cause erosion, landslides, or sedimentation.
- Dams also affect the patterns of migration for the fish along with others aquatic species and can affect native wildlife in the area, particularly if the dam's construction results in the habitat loss.

HPPs in the Himalayas

1. Subansiri Lower Hydroelectric Project in Arunachal Pradesh
2. Teesta Low Dam Hydroelectric Project in Sikkim
3. Arun III Hydroelectric Project Nepal
4. West Seti Hydroelectric Project, Nepal
5. Chukha Hydropower Project, Bhutan
6. Tala Hydropower Project, Bhutan

Alternative to HPPs:

- Micro Hydro is micro-scale hydroelectric power generation system that usually produces up to 100 kilowatts (kW) of energy.
- The systems make use of the energy from falling water to turn a motor, which, in turn produces electricity.
- They are able to be utilized in a variety of ways, such as the powering of businesses, homes as well as small communities.

Benefits of Micro hydro-systems:

- Less expensive
- Are located in inaccessible zones
- Energy source that is reliable to communities
- Smaller environmental footprint
- Micro hydro systems are classified into two major kinds namely run-of-river and storage.
- The Run-of river system make use of naturally flowing water within the river or stream to produce electricity.
- However, storage systems use reservoirs to store water, then release it whenever required to create electricity.

The way forward

- Micro-hydro systems are designed to reduce the ecological negative impacts and offer renewable energy solutions.
- It's also important to keep in mind that even small-scale hydropower projects can have a significant negative impact on the environment and local communities.
- A comprehensive analysis is required to determine the impact potential before beginning the project.

Topic 33. PM CARES FUND ADMINISTERED LIKE PM'S NATIONAL RELIEF FUND, HC TOLD

Important for subject: Government Schemes

The Prime Minister's Office (PMO) has advised to the Delhi High Court that the PM CARES Fund is administered following the same pattern similar to the PM's National Relief Fund (PMNRF) because both are headed by the PM.

- The PMO has maintained it is the PM Cares Fund that was established in the year 2020 in the aftermath of the COVID epidemic, cannot be considered to be a state-owned fund as the contributions to it are not deposited directly into the Consolidated Fund of India.
- The PMO also added it is the PM CARES Fund has been set up as an "Public Charitable Trust," and the information of third parties can't be shared with regardless of the nature.
- Petitions have been filed in courts of India asking an order to make the PM CARES Fund a "State" in accordance with the Constitution and to also declare PM CARES an "public authority" under the Right to Information (RTI) Act.

About PM CARES Fund:

- The Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM CARES Fund) launched on March 28, 2020 following the COVID-19 pandemic that hit India.
- It was developed to combat the virus, as well as to contain and relieve efforts to combat the corona virus outbreak, as well as other events that are similar to pandemics in the near future.
- It is officially registered as a Public Charitable Trust.

Objectives:

- Assistance and relief to all affected people in the event of a natural disaster, catastrophe or public health emergency, or any other emergency which could be caused by human-made or natural.
- The creation and upgradation of any medical facilities or research facilities, as well as

funding the development or upgrading of any necessary infrastructure healthcare assistance or any other type of assistance.

Composition of the Trust:

- Prime Minister is the ex-officio Chairman of the PM CARES Fund.
- Minister of Defence, Minister of Home Affairs and Minister of Finance, Government of India are ex-officio Trustees of the Fund.
- The Trust Deed of the Fund gives the Chairman of the Board of Trustees i.e. the Prime Minister The ability to nominate three trustees on the Board of Trustees.

Contributions:

- The fund consists entirely of voluntary contributions from individuals/organizations and does not get any budgetary support.
- The donations for the Fund may come from any individual or groups including companies, charities, institutions, associations, etc.
- PM CARES Fund allows the option of micro donation you can give just as little as 10 Rs in PM CARES Fund. PM CARES Fund.
- Donations to the PM CARES Fund would qualify for benefits 80G for 100% exempted under the Income Tax Act.
- Donations to the PM CARES Fund will also be counted as Corporate Social Responsibility (CSR) expenditure under the Companies Act, 2013.
- It also has an exemption in the FCRA. This allows PM CARES Fund to accept donations and contributions from both individuals as well as organizations that are based in other countries.

Topic 34. ACCELERATOR FUND FOR AGRI-STARTUPS

Important for subject: Government Schemes

The government plans to set up an accelerator fund for agricultural start-ups budget

- The government plans to establish Accelerator Funds for Agri-Startups to boost digital infrastructure in rural regions and encourage companies in this area.
- The fund will focus on finding cost-effective solutions to solve the issues of many issues faced by farmers through the introduction of cutting-edge technology and

increasing production.

Agriculture Accelerator Fund:

- The fund will be established in order to enhance the number of agriculture-related startups in rural areas.
- The principal goal of this fund is offer affordable and innovative solutions that are affordable and innovative.
- The focus will be on the farmers and the issues they face
- Young entrepreneurs are incentivised to establish agri-startups by using these funding
- Businesses that are focused in low-cost solutions will be given priority
- Additionally, startups in technology which have the goal of increasing the output of agriculture will be given priority

Topic 35. CDSCO BARS GLOBAL PHARMA HEALTHCARE FROM MAKING EYE LUBRICANT

Important for subject: Polity

The Central Drugs Standard Control Organisation (CDSCO) has given the the Tamil Nadu-based Global Pharma Healthcare to stop manufacturing all products that fall under the category of ophthalmic preparations until the end in an examination.

- The announcement came just days upon that the U.S. Centres for Disease Control and Prevention (CDC) connected the eye drops of the company to 55 adverse events that occurred in the U.S.
- CDC have warned about the eye drops provided from the manufacturer to the distributors Aru Pharma/EzriCare and Delsam Pharma in the U.S. were connected to adverse events that include eye infections as well as permanent loss of sight and even death due to an infection of the bloodstream.
- Raw material called carboxymethyl cellulose sodium was used for manufacturing the eye lubricant.
- It is a company that removed the eye drops from the market, was added to the FDA's alert for imports list due to the alleged failure to respond to a request for records.

Central Drugs Standard Control Organisation (CDSCO):

- The Central Drugs Standard Control Organisation (CDSCO) is part of the Directorate General of Health Services, Ministry of Health & Family Welfare.
- It is the National Regulatory Authority (NRA) of India.
- CDSCO serves as an official of the Central Drug Authority for discharging duties which are the responsibility of the Central Government under the Drugs and Cosmetics Act.
- It controls the safety, effectiveness and quality of medical devices in the context of the Drugs and Cosmetics Act, 1940.
- Headquarters - New Delhi.

The major purposes from CDSCO:

- In the context of the Drugs as well as Cosmetics Act, CDSCO is accountable for the approval of drugs, conducting clinical trials, setting the guidelines for drugs, monitoring the quality of drugs imported within the country, and coordination of the work of the state drug control authorities.

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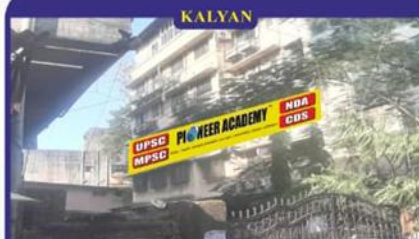
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