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Topic 1. SUSTAINABLE SHRIMP CULTIVATION PROVIDES HOPE FOR MANGROVE RESTORATION IN SUNDARBANS

Important for subject: Environment

A new initiative to sustainably shrimp farming offers hope for Mangrove restoration in the Sundarbans.

- There were some concerns about the non-sustainable aquaculture, especially shrimp collection, following the cleaning of huge tracts of mangrove forest in Sunderbans.

Sustainable Aquaculture In Mangrove Ecosystem (SAIME):

- As part of the initiative farmers have begun the cultivation of shrimp for 20 hectares in Chaital located in the West Bengal's North 24 Parganas, and 10 hectares in Madhabpur within the adjoining South 24 Parganas.
- The community-based project of the sustainable cultivation of shrimp is developed in collaboration with NEWS as well as Global Nature Fund (GNF), Naturland Bangladesh Environment and Development Society (BEDS).
- A study program on the impact mangrove leaf litter the dynamics of nutrition in the SAIME lakes was initiated through collaboration with Centre for Excellence in Blue Economy (CoE-BE) of the Indian Institute of Science Education and Research (IISER), Kolkata.

Shrimp cultivation in the sundarbans:

- The Sundarbans forests covers around 10,000 sq. kilometers across India and Bangladesh and Bangladesh, of which 40 percent of it is in India.
- The Sundarbans are a group of low-lying islands located in the Bay of Bengal, spread across India and Bangladesh is famous for its distinctive mangrove forests.
- It has a place important as a tourist destination due to the breathtaking beauty that it affords and the famous and magnificent "Royal Bengal Tiger".
- The fishing industry, particularly shrimp cultivation, is one of the main occupations of people of Sundarbans which is a complex system of low-lying islands and rivers which experience an influx of tides twice per day.
- Shrimp cultivation is practiced on around 15 to 20000 acres of the distinctive

ecosystem of India.

- They also have native varieties of shrimp such as the black Tiger Shrimp (*P. monodon*) and giant freshwater prawns (*M. rosenbergii*).

What is the Significance of the Sundarban Delta?

- The Sundarbans are home to the largest mangrove forest anywhere in the globe. They are located on the river delta that connects the Ganges, Brahmaputra and Meghna rivers in the Bay of Bengal.
- Mangrove ecosystem is a specialized ecosystem that lies between sea and the land in the subtropical and tropical areas.
- Sundarban is the natural home of numerous kinds of mammals and a variety of species feed, breed and seek shelter within this eco-system.
- The area is home to a variety of unique and endangered wildlife species, including the estuarine-crocodile, the water monitor lizards Gangetic dolphin, and the olive ridley turtle.
- Sundarban was declared as a UNESCO World Heritage site in 1987 (India) and 1997 (Bangladesh).
- Sundarban Wetland, India was recognized as the 'Wetland with International Importance' under the Ramsar Convention in January of 2019.

Topic 2. INDIAN RHINOCEROS

Important for subject: Environment



Assam Chief Minister Has recently declared that there were there was no poaching of rhinos in the state of Assam in 2022.

More details about Indian Rhinoceros

- It is believed that the Indian rhinoceros (*Rhinoceros unicornis*) is only found inside the Brahmaputra valley, in parts of North Bengal, and parts of southern Nepal.
- It is equipped with one horn of black that could reach 60 centimetres in length, as well as a hard gray-brown hide that has skin folds that give the animal the distinctive armour-plated appearance.
- It is believed that the Indian rhino is classified as vulnerable on the IUCN Red List, it was previously listed in the category of endangered.
- It is classified as an Schedule I animal in the Wildlife Protection Act, 1972.
- As per the WWF according to the WWF, there are about 3700 Indian rhinos living in the wild today.
- The Assam's Kaziranga National Park alone contains 261 animals as per the census conducted in March 2022. There are over 250 rhinos living within the Orang, Pobitora, and Manas parks.

Why do Rhinos get poached?

- There have been rhino poaching in exchange for their horns, which are highly prized in certain cultures.
- Ground rhino horn has been used in traditional Chinese treatment to treat various illnesses, from hangovers to cancer, and also to treat aphrodisiac issues.
- The country of Vietnam the possession of an rhino horn is considered to be a status signification

What are the Conservation Efforts by India?

- The Ministry of Environment and Forests has announced the National Conservation Strategy for Indian One-Horned Rhino.
- Furthermore it was reported that the Assam government also established an Special Rhino Protection Force to ensure that there is a tight rein on rhino poaching as well as related activities in Kaziranga National Park (KNP).

- India, Bhutan, Nepal, Indonesia and Malaysia in order to preserve and protect rhinos have signed to the New Delhi Declaration on Asian Rhinos 2019.
- Through innovative programs such as Indian Rhino Vision 2020 the government has teamed up with national, international and local groups to protect rhinos.

Topic 3. HOW TERMITE BEHAVIOUR IS LINKED TO A WARMING WORLD

Important for subject: Environment

What was the research's findings?

- A study conducted recently has shown that termites break down wood at a faster rate under warmer conditions.
- For each 10 degree Celsius rise in temperature the rate of decomposition increases almost seven times.
- They termites that consume wood were able to live in dry and warm conditions, which is not the case for microbes which require water in order to thrive.

The study's details:

- The study showed that, as earth is warming termites are likely to expand across the globe.
- This may cause to a subsequent increase in global temperatures, because these small insects as they consume dead wood emit carbon into the atmosphere.
- It is clear that the movement of an animal as small as a termite could cause it to affect the rate at which wood, a carbon resource that covers the globe--is broken down.
- Twelve of the world's 13 most destructive termite species could expand substantially in their spread by 2050.

Termites:

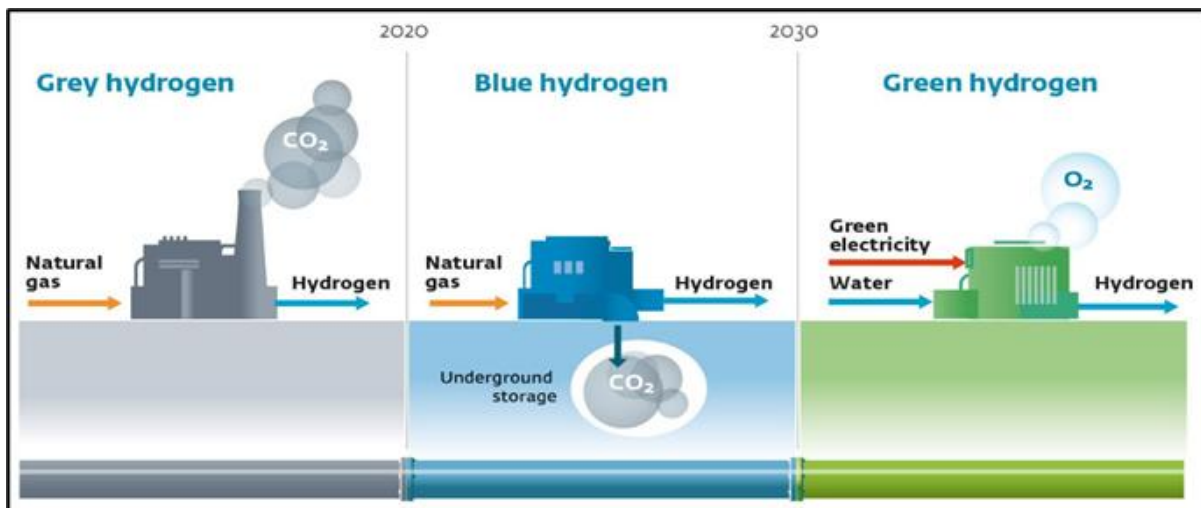
- There are more than three thousand kinds of termites around the globe including those that eat plant material or even the soil. The most prominent of them are termites that eat wood.
- They play an essential function in the global ecosystem i.e. decomposing dead wood.

What are they doing to increase global warming?

- Termites emit carbon dioxide from decaying timber as carbon dioxide and methane, two of the most significant greenhouse gases.
- Also it is possible that an rise in the population of termites and their rapid decomposition activity could result in an increase in greenhouse gases, resulting in a warmer planet.
- Other effects caused by global warming
- Unbalanced ecological health.
- The melting of polar ice can lead to a break within the food chain of Arctic region.

Topic 4. GREEN HYDROGEN MISSION GETS CABINET NOD, INITIAL OUTLAY RS 19,744 CRORE

Important for subject: Environment



In order to create India energy independent and reduce carbon emissions in important areas of the economy The Union Cabinet on Wednesday approved the National Green Hydrogen Mission (NGHM) which has an initial investment of Rs 19,744 crore.

More details on the announcements:

- The goal is to generate an investment of 8.25 lakhs by 2030 and to create more than 6 lakh new jobs.
- A little over 50 million tonnes (million tons of metric tonnes) annually of CO₂ emissions is anticipated to be reduced in 2030.

About the National Green Hydrogen Mission (NGHM):

- Launched on 15 Aug, 2021.
- The Ministry of New and Renewable Energy (MNRE) will develop the guidelines for the scheme for its implementation.
- This mission is to encourage the growth of green hydrogen production capacity that is at five MMT (Million Metric Tonnes) annually, with the renewable energy capacity to 100 GW in 2030.

Benefits of the Mission:

The Mission will provide a variety of advantages, including:

- the creation of export opportunities in the field of Green Hydrogen and its derivatives;
- the decarbonisation of the mobility, industrial and the energy sector;
- decrease in dependence on imports of fossil fuels and feed stocks;
- the development of manufacturing capabilities in the indigenous community;
- creating employment opportunities creating employment opportunities
- the development of cutting-edge technologies.

Green Hydrogen

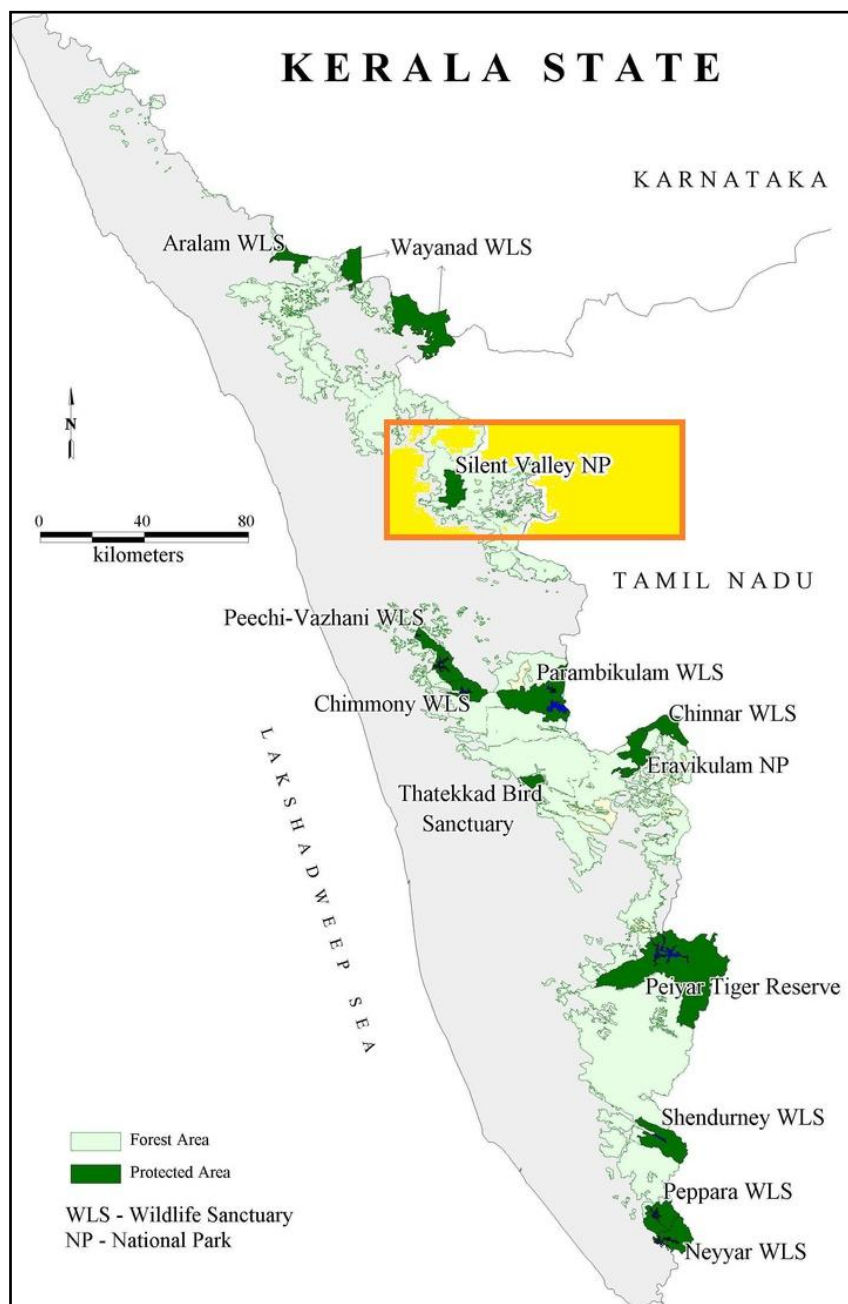
- Hydrogen produced by splitting water using an electrolysis process It can also be used as fuel.
- If the devices which do electrolyzers run on renewable power sources, the product is referred to as green hydrogen.
- Fertiliser, refining, and steel units are currently consuming grey hydrogen, which is made from fossil fuels.
- India is also planning to construct electrolyzers with capacities of 60 gigawatts to 100 gigawatts in order to create green hydrogen.
- Principal Activities to be conducted within the Mission
 - Constructing infrastructure and volumes
 - Demonstrations on specific applications
 - Goal-oriented Research & Development
 - Facilitative policy help
 - A solid regulatory and standardization framework for hydrogen technology

Types of Hydrogen Fuel:

1. Grey Hydrogen: Produced by using Natural Gas without carbon sequestration
2. Brown Hydrogen: Made by using Coal with carbon sequestration.
3. Blue Hydrogen: Made from Natural Gas with carbon sequestration.
4. Green Hydrogen: Made using Renewable Energy.

Topic 5. SILENT VALLEY BIRD SPECIES GOES UP TO 175

Important for subject: Environment



A bird count conducted in Silent Valley National Park in the latter part of December has revealed more than 141 species of which 17 were brand new. As of now 175 species of bird were observed at Silent Valley.

Information about the survey

- The survey was conducted in conjunction with Kerala Natural History Society.
- The first survey took place in the final week of December 1990.
- There were 139 birds that were identified during a survey conducted during 2006; the total number of species was increased to 142 at the time of the latest survey conducted in 2014.
- Brown wood owl Banded bay cuckoo Malabar white-throated kingfisher Indian nightjar Jungle nightjar and a large cuckoo shrike included among 17 different species that were recently discovered within the Silent Valley.
- Birds such as the Crimson-backed Sunbird and yellow-browed bulbul Black bulbul Indian white-eye, and Indian swiftlet were plentiful throughout Silent Valley.

Endemic birds observed in the survey include:

- Nilgiri laughingthrush Nilgiri flowerpecker, Brown-cheeked Fulvetta black-and-orange flycatcher, grey-headed canary-flycatcher Greenish warbler Common Chiffchaff, Tytler's Leaf warbler Shaheen falcon Nilgiri wood pigeon and Malabar singing thrush.

About the Silent Valley National Park:

- Silent Valley national park is one of the stunning natural wonders of Kerala.
- It is part of the essential component of the Nilgiri Biosphere Reserve and is situated within the Nilgiri hills.
- Its Park national is among the most protected and unspoiled zones of the rain forest and evergreen tropical moist forest within the South Western Ghats.
- Silent Valley National Park Silent Valley National Park comes under the Western Ghats World Heritage Site.
- UNESCO has declared certain areas of Western Ghats as World Heritage site in 2007.

- All of the park's land is enclosed by an buffer zone to safeguard the fauna and flora. The buffer zone covers an area of 148 square. Km.
- Silent Valley National Park is located in the The New Amarambalam reserve Forest, Karimpuzha Wildlife Sanctuary and Nedumkayam Rainforest located in the Nilambur Talukof Malappuram district.
- On the other hand, the national park shares borders by Mukurthi National Park of Nilgiris district and Attappadi Reserved Forest in Mannarkkad Taluk of Palakkad district.
- It is the only remaining rain forest in Kerala.
- It was designated to be a reserve forest in 1914.
- In 1984, it was declared National Park.
- Sairandhrivanam translated as Sairandhri's Forest is the local name of the Silent Valley region.
- Draupadi Draupadi, the Pandavas wife was disguised as Sairandhri the queen's maid called Sudeshna when her family was exiled according to the epic Mahabharatha.
- During monsoons Silent Valley receives a significant amount in rain but the amount of rain varies due to the region's varied geographical.

FLORA:

- The valleys of the park comprise an eco-region comprising humid and subtropical tropical broadleaf forest.
- The South Western Ghats montane rain forest region encompasses hilly terrain over 1,000m. Above 1,500m evergreen forests provide space to stunted forests, also known as sholas. They are combined with open grassland.
- The valley's fauna includes approximately 1000 flowering plants as well as 108 orchid species. 100 Ferns and fern allies 250 liverworts, 75 of lichens and around 200 algae.
- The Western Ghats are home to the majority of these species of plants.

FAUNA:

- A variety of endangered species like the lion-tailed macaque gaur, leopard, panther, wild boar Indian Civet and Sambhar are found at Silent Valley Park.

Topic 6. PLASTIC TREATY WAS NOT A SUCCESS

Important for subject: Environment

On the 2nd of December 2022, negotiators in charge for negotiating a worldwide treaty to stop plastic pollution by 2024, concluded their first meeting ever at Punta Del Este Uruguay.

Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options:

- Report issued in the Organization for Economic Cooperation and Development (OECD).

Highlights of HTML0:

- The amount of plastic waste generated worldwide could more than triple by 2060 about half of it ending in landfills, while less than half of it being recycled.
- The report states that in the absence of a drastic action to limit demand, improve the life of products, and improve recycling and waste management, plastic pollution will rise along with an nearly threefold increase in plastic usage caused by the increasing population and incomes.
- It is estimated that nearly two-thirds of the plastic waste generated in 2060 will come from items like packaging, low-cost items and textiles.
- Growth is most rapid in emerging and developing countries located in Africa as well as Asia, although OECD countries will still generate larger quantities of waste plastic per individual (238 kg annually per year on an the average) by 2060 as compared to non-OECD countries (77 kilograms).

Strategies to lessen the environmental impact on plastics as well as encourage more sustainable use of them must include:

- Taxes on plastics, which includes packaging made of plastic
- Rewards for repairing and reusing plastic objects
- Recycling targets for new plastic products
- Extended producer accountability (EPR) EPR schemes
- Better waste management infrastructure
- The rate of litter collection has increased

- Global Initiatives To Combat plastic pollution
- The legal effort has been initiated at both national and international levels to tackle marine pollution.

The most important ones are:

- The 1972 Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter (or the London Convention)
- The 1996 Protocol to the London Convention (the London Protocol)
- In 1978, the Protocol of 1978 to International Convention for the Prevention of Pollution from Ships (MARPOL).
- The United Nations Environment Program (UNEP) examines marine debris made of plastic and its capacity to carry harmful substances is one of the most significant new environmental problems that is threatening the planet.
- In 2015, at the G7 summit held in Bavaria, Germany, the risks of microplastics were highlighted in the Leaders"Declaration.
- GLP (GLP): It is a joint initiative between the International Maritime Organization (IMO) and the Food and Agriculture Organization of the United Nations (FAO) and initially funded by Norway's Government of Norway.

Clean Seas Campaign:

- The United Nations Environment Programme launched the Clean Seas Campaign in 2017
- Goal: The aim was to ignite the world to change the tide of plastics by decreasing the use of dangerous, non-responsible and harmful plastics such as single-use plastics, and eliminating intentionally added microplastics.
- Steps made by India:
- India has begun the path to stop the pollution caused by plastic by taking sensible and efficient measures with the use of EPR for plastics packaging and also imposing a ban on plastics that are used only once with low utility and significant littering potential.
- The Plastic Waste Management Rules, 2016, specifically state it is the responsibility of Urban localities (ULBs) must ban less than 50 micron-thick plastic bags and prohibit the use of recycled plastics to pack drinks, food items or other edible items.

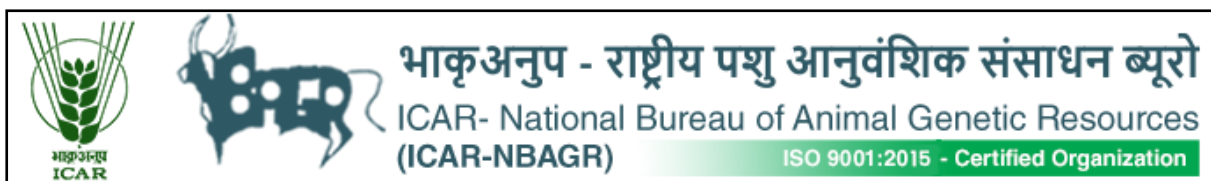
- The Rules also mandate local authorities to offer separate collections, storage and treatment of plastic waste in their regions.
- It has also set itself an ambitious goal to eliminate single-use plastics by 2022.
- India is an MARPOL signatory (International Convention on the Prevention of Pollution from the Sea).
- The Centre has also released new guidelines for producers of brands, brand owners, and importers of plastics, making it mandatory to recycle . It has outlined a plan to integrate the huge informal sector, involved in recycling plastics, within a more formal circular economy.

The "India Plastic Challenge - Hackathon 2021

- It's a competition that's unique that calls on entrepreneurs and start-ups as well as students of Higher Education Institutions (HEIs) to create new solutions to reduce the impact of plastic pollution and find alternative alternatives for single-use plastics.
1. Swachh Bharat Mission
 2. India Plastics Pact
 3. Project REPLAN
 4. Un-Plastic Collective
 5. GoLitter Partnerships Project

Topic 7. INDIA NOW HAS 212 INDIGENOUS LIVESTOCK BREEDS AFTER ICAR-NBAGR REGISTERS 10 NEW ONES

Important for subject: Environment



In the past year in the last year, it was reported that the Indian Council of Agricultural Research (ICAR) has been able to register 10 breeds of livestock species that include buffalo, cattle goat, pig and buffalo. This brings the entire number of indigenous breeds up to the number of 212 at the time of January 4, 2023.

ICAR-National Bureau of Animal Genetic Resources (NBAGR)

- It was founded on September 21st, 1984 in Bangalore as twin institutes, namely ICAR the National Bureau of Animal Genetic Resources and National Institute of Animal Genetics before moving to Karnal in the year 1985.
- The two institutes merged to form one entity under the shape of ICAR National Bureau of Animal Genetic Resources (ICAR-NBAGR) in 1995.
- The premier institute is committed to fulfill its mission of identifying, evaluating the characterization, conservation, and utilization of genetic resources of the nation.

Registration of breeds that are new:

- The registration and identification of indigenous breeds only began after the year 2010.
- Breeds that aren't officially registered or recognized are known as non-descript breeds..
- The registration was handled by the ICAR National Bureau of Animal Genetic Resources (NBAGR).
- The registration process includes an identification and survey of the breeds by visiting their native habitats.
- Since the year 2010 since 2010, this has been the third-highest growth in the registration of indigenous breeds, after 15 new breeds in 2018-19 and 13 breeds that were new for 2019-2020 were registered.
- In 2010 there were just 129 indigenous breeds that were registered known as "extant breeds."
- Registration aids in breeding conservation and promotes the breed because state governments can receive money specifically for these breeds.

The New Breeds:

- The 10 breeds of new breeds were three new breeds of cattle (Kathani, Sanchori, Masilum) and an indigenous buffalo (Purnathadi) as well as three different goat species (Sojat, Karauli, Gujari) and three breeds of pigs (Banda, Manipuri Black, Wak Chambil). Purnathadi buffalo
- The region is within The Vidarbha area of Maharashtra.
- The number of Kathani which is which is a dual-purpose cattle is also spread across

the region.

- It is a good candidate for excellent draft capability and is well suited for the marshy areas to cultivate paddy.

Masilum

- It is a tiny but robust and well-built cattle from Meghalaya.
- It is well-adapted to the ecosystem of the hill It is taken care of in members of the Khasi as well as the Jaintia communities for sporting events manure, social-cultural events and festivals.
- Sanchori is located inside the Jalore district in Rajasthan.
- In the goat world, all three breeds that are new come originated from different areas of Rajasthan.
- Of the new breeds of pigs, Manipuri Black is a native of Manipur, Banda is from Jharkhand and Wak Chambil originates of in the Garo mountains of Meghalaya.

The significance of breeds indigenous to the area:

- Indigenous breeds are more for climate resilience.
- They are also more tolerant of heat They also have stronger immunity and resistance to disease.
- However, there is a decreasing trend for some indigenous livestock species, including cattle.
- The 20th Livestock Census, while the number of crossbred and exotic cattle was up 29.3 percent, as when compared with the 2012 Census The population of native cattle decreased by six percent.

Topic 8. CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS: ECOLOGICAL CONNECTIVITY

Important for subject: Environment

What is Ecological Connectivity?

- Definition: Ecological connectivity is the free movement of species and the natural processes that maintain existence on Earth.
- Connectivity to the environment is an important aspect of the natural world.

- It is vital to ecosystems to function properly, is vital to the existence of wild animals and plant species, and is vital for ensuring genetic diversity and adapting to changing climates in all ecosystems and scales of spatial.

Why Is Ecological Connectivity Important?

- It is an essential instrument for planning government in achieving what is known as the 2030 Agenda for Sustainable Development to meet the goals of development, environmental and economic objectives.
- Conservation of connectivity (maintaining the quality of connectivity, or improving or restoring connection) is an immediate reaction to the fragmentation and destruction of habitats, plants and species loss on Earth.

The ecological connectivity of the assessment of IPBES:

- The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) in the year 2019 confirmed that the maintenance and design of connectivity is vital to the operation for many ecosystem systems as well as processes. It also highlighted the importance of integrating connectivity into the development of economic growth is crucial to achieving goals of the 2030 Agenda.

Report Findings:

- 9.3-11.7 percent of the protected zones are thought to be properly connected. The coverage of protected areas for species distribution is not sufficient. For instance, just 9 per percent of species that migrate are covered adequately by protected areas at all stages of their annual cycle.
- The status of conservation for species that migrate and the resilience and ecological connectivity of their ecosystems is deteriorating;
- Protected areas management strategies could be more effective if they were to take more into consideration functional and spatial connectivity in addition to other aspects.

Connectivity to the environment and sustainable development objectives:

- SDGs Relation to Ecological connectivity

SDG 9

- One of the primary causes of habitat destruction.
- The development and implementation of infrastructures must take into account their ecological footprints, while preserving the connection between different components that comprise the land.

SDG 11

- The interconnectedness to urban areas' green space boosts their ecological function and the ecosystem services that go along with it.

SDG 12

- Connectivity is a key component of biodiversity and ecosystems that help to support the productivity of agriculture, fisheries, along with other ecosystem resources which are essential the food, livelihoods, and economic benefits.

SDG 13

- Connectivity enhances the ability that ecosystems have to adjust to the climate change their distribution is predicted to shift due to global warming. If species can move around and follow more favorable environments and climates and adapt better to changes in climate.

SDG 14

- Connectivity between the marine protected zones is crucial to ensure that there are no inconsistencies between management within and outside the national boundaries and is an essential aspect to ensure the persistence of biodiversity.

SDG 15

- When it comes to defining conservation strategies connectivity is essential for creation and management of protected area networks or other tools for managing areas and also to assess the ecological need to have corridors that connect different areas.

Ecological connectivity and multilateral environment agreements (MEAs):

- MEAs Ecological Connectivity
- Convention on Migratory Species (CMS)
- For the CMS context, the notion of ecological connectivity can also include:
- Systems that allow for constant and predictable movements of animals between and within zones that may be or not be contiguous;

- Conservation objectives are defined with regard to the entire migration systems, and the function of the process itself, not only the condition of habitats or populations.

Convention on Biological Diversity (CBD)

In the context of CBD ecological connectivity is crucial to the fulfillment of all three CBD goals:

- Conservation of biodiversity through the sustainable utilization of its components; and equally distributed distribution of the benefits that result from of the use of genetic resources, which includes the right accessibility to the genetic resources as well as through appropriate transfers technology relevant to the issue, taking in consideration the rights of those resources and technologies, as well as through appropriate financing.

Ramsar Convention on Wetland

- For the purposes of Ramsar ecological connectivity is hydrological connectivity on the river basin/river catchment scale
- The restoration of wetland ecosystems has been scaled-up connected to the UN Decade on Ecosystem Restoration 2021-2030.
- United Nations Convention to Combat Desertification (UNCCD)

Within the context of the UNCCD ecological connectivity refers to:

- Strategies to reach the goals of the goal of achieving Land Degradation Neutrality (maintaining or increasing the quantity and quality of the land resources required to sustain ecosystem functions and the provision of services to improve food security).

United Nations Framework Convention on Climate Change (UNFCCC)

- In the context of UNFCCC Ecological connectivity is a term used in the context of the UNFCCC. It includes:
- A component of internationally coordinated solutions based on nature as a holistic and vital component of global effort for mitigation of climate change adaption, resilience and mitigation.
- United Nations Educational, Scientific and Cultural Organization (UNESCO)

- In the context of UNESCO ecological connectivity is connectivity to habitats or ecological systems as part of the criteria for the designation of serial locations that have a world-class value under the World Heritage Convention; connectivity between various components of the landscape Biosphere Reserves.
- **Migratory Species and Connectivity:** Connectivity is key for the identification and planning of the spatial structure of networks of sites (protected areas and other sites) managed for conservation purposes which support this functional need.
- The Strategic Plan for Migratory Species 2015-2023 requires incorporating the migration system approach into conservation strategies that give the fullest attention not only to species, populations and habitats but also the entire range of migration routes as well as the workings of the process of migration.
- Goal: To promote actions to improve the conservation situation of migratory species as well as their habitats, as well as to protect the ecological robustness, connectivity, and integrity of the migration systems.
- Goal 9 The international and the regional actions and cooperation among States to ensure the protection and efficient management of species that migrate is a reflection of a migration system approach where all States responsible for the species in question participate with these activities in a coordinated manner.
- Goal 10 The critical habitats, as well as areas for migratory species are mapped and integrated into area-based conservation actions to preserve their integrity, quality and resilience. They also function as per the requirements of Aichi Target 11, supported when needed by ecologically sensitive land-use planning and management of landscapes on a greater scale.
- Connectivity in the Post-2020 Global Biodiversity Framework
- COP13 adopted that the Gandhinagar Declaration on CMS and The Post-2020 Global Biodiversity Framework that outlines what are the CMS Priorities to the Framework, and highlighted the most important messages that resulted by the COP13 High-Level Session that specifically focused on the need for connectivity for the post 2020 framework.

Connectivity in Other Relevant Processes and Events:

- Outside of beyond the Post-2020 Global Biodiversity Framework, connectivity is also being discussed in other processes and occasions:

1. 7th plenary session of the IPBES (2019)
2. United Nations High level summit on Biodiversity (2020)
3. IUCN World Conservation Congress (2021)
4. UNFCCC CoP26 (2021)
5. The 75th session UNGA (2021)

Connectivity and Ecosystem Restoration:

- The improvement on the ecological continuum is required to reduce the effects of land use changes as well as climate changes.
- The UN Decade for Ecosystem Restoration 2020-2030 will focus on scaling the process of restoring damaged and degraded ecosystems as a tried and tested method to tackle climate change and increase food security water supply, and biodiversity.
- Ecological connectivity and Ecosystem Restoration are inextricably linked: retaining or restoring connectivity is vital to secure resilient, healthy and sustainable ecosystems.
- Restoring habitat that has been degraded is an essential tool for managing to improve connectivity in the landscape.

Topic 9. RUPEE DEPRECIATION

Important for subject: Economy

In the course of the year, the rupee sank to a lowest in the range of 83.2 for every dollar.

- The rupee was among the most volatile Asian exchange rate in the year 2022 with a drop by about 10 percent in value against dollars.
- As compared to rupee, the appreciation of the different Asian currencies was not as significant.
- The same time-Chinese Yuan, Philippine Peso and Indonesian Rupiah dropped by 9 percent. South Korean Won and Malaysian Ringgit decreased by 7 and 6 per cent respectively.

Cause:

- A sharp rise in dollardue due to US Federal Reserve monetary policy tightening (rise in the fund rate)to check inflation.

- This resulted in a greater interest rate difference between US as well as India, and investors pulled their funds out of the Indian market, and began making investments into the US market in order to profit of higher interest rates and resulting in a depreciation of the rupee.
- In 2022 Foreign fund managers (FPIs) took out in the amount of 1.34 1 lakh from Indian markets - the biggest annual net outflow.
- Russian attack on Ukraine accentuated it. FPI withdrawals, along with the slowdown in global economic growth making the flow of funds more difficult.

Currency depreciation

- It's an decrease in value for the currency in the system of floating exchange rates.
- In the case of a floating exchange rate system markets forces (based on supply and demand of an exchange rate) determine the worth of the currency.
- Depreciation in the rupee is the result of rupee is now less valuable compared to the dollar.
- For instance: USD 1 used to be equivalent to Rs. 70. Currently, USD 1 equals the equivalent of Rs. 75, which means that the rupee has declined in relation to the dollar i.e. it takes more rupees buy the equivalent of a dollar.
- A currency appreciates in relation in foreign exchange when quantity of money on the market grows while demand for it decreases.

Deficit in balance of payments

- Diminishing net exportt i.e. Export-Import.
- Net capital outflow i.e. capital outflow - capital inflow.
- The fall in the relative rate of interest for India (comparatively higher rate of interest in the foreign capital markets leads in a capital flow)
- Prices for crude oil are higher and the higher price globally of any imported product which would result in an increase in the cost of imports.
- Wars/Pandemics that causes disruptions to supply chains and uncertainty about consumer investment expectations. As an example, recent Ukraine War.
- The currencies of the emerging market peers.
- The higher amount of foreign exchange denominated foreign debtsit will drive up

demand for foreign currency in comparison to the domestic currency.

Impact

Losers:

- People who import from outside.
- People seeking foreign education.
- People who travel across the world.
- Investors from abroad.
- Patients seeking medical care outside of the country.

Gainers:

- Exporters of India.
- Remittances are received through Non Resident Indians (NRI).
- Foreign tourists visit India for less.
- Non-governmental organizations that receive foreign aid.
- Foreign investors invest in India.
- Students from other countries are studying in India.

Positive While the currency that is weaker can encourage exports, it also means that the cost of exports decreases for countries that have currency has devalued.

Negative:

- The risk is of importing inflation and could hinder the central bank keep the interest rate at a record low for a longer period.
- The weakness of the currency can make imports more expensive.
- It is going to be more expensive for students who study at foreign universities since it is when they pay in dollars for charges.
- A declining rupee could be unsettling for those who plan an overseas trip.
- Exporters who import capital goods could experience a decline in margins.
- The repayment of debts from outside becomes expensive.

Topic 10. CORPORATE TAX

Important for subject: Economy



Corporate Tax = Net Profit Obtained as Per Specific Country's Tax Rules × Corporate Tax Rate as Applicable




The ratio of corporate tax to GDP surpasses 3 percent after just two years in FY'22. The ratio of corporate tax to GDP is higher than 3 percent after FY'22.

- It's a sign of an overall increase in the profits from India Inc propelled by an increasing demand for both goods and services.
- The tax collections of corporations are still not quite at the level of its five-year record at 3.51 per cent of the GDP in 2018-19.
- The corporate tax also referred to as corporate tax or company tax is a direct tax that is imposed by a government on the capital or income of companies or similar legal entities.
- Corporate tax is a tax that is charged on the earnings of multinational and foreign corporations that were established in India.
- It is levied on the private and public corporations that are registered by the Companies Act of 2013.
- It is the rate that tax is levied is in accordance with the regulations in the Income Tax Act, 1961.
- The the Minimum Alternate Tax (MAT) does not apply to these businesses.
- The Minimum Alternate Tax is a method to encompass all businesses that are that are in the loop of income tax.
- The MAT guarantees that no business with a healthy financial condition and

significant earnings can be able to defer having to pay tax on income, even after filing for exemptions.

- Taxes are assessed on the company's taxable earnings which is comprised of revenues less the cost of selling goods general and administrative costs such as marketing and selling depreciation, research and development, and other operating expenses.
- Therefore, it is added to the net profits or net income corporate companies earn through their business.
- Corporate tax is a cost of a business imposed by the government, which is the primary source of income. Likewise, the income tax can be described as a kind of tax that is imposed by the government the income of an individual like salary and wages.

Rates:

- The Taxation Laws (Amendment) Bill 2019 brought about a reduction in the corporate tax base rate, which is down from 30% to 22 percent in the case of established businesses.
- The corporate tax rate of 22 percent without exemptions, and the effective corporation tax rate following surcharges and cess is 25.17 percent for businesses that are in operation.
- For companies with a new manufacturing facility that were founded post 1st October 2019 but before the 31st of March in 2023 (The time frame was extended for a further year until March 2024) the corporate base tax rate was reduced from 25 percent to 15%.
- The tax effective for newly formed businesses will have a rate of 17.01 percent, which includes the surcharge and cess.
- Corporate tax rates for the new year for India are significantly smaller than USA (27 percent), Japan (30.62%), Brazil (34%) and Germany (30 percent) in addition to the newly formed businesses, their tax rates are comparable to Singapore (17 percent)
- India Inc. is a term commonly that is used by Indian media to denote that sector which is formal to the country.
- It comprised seven percent of the population in 2000, and made up 60 percent of the nominal GDP of the nation.

Topic 11. DEMONETISATION DECISION GETS SUPREME COURT SEAL

Important for subject: Economy

The Supreme Court upheld the government's 2016 decision to demonetise the currency notes worth the denominations of Rs. 500 or Rs. 1,000 with 4:4 majority.

More information about the latest news:

- In the majority 4:4 decision from the bench of five judges comprising Justices S Abdul Nazeer B R Gavai, A S Bopanna, V Ramasubramanian, as well as Justice B V Nagarathna, it was concluded that the notification issued by the Centre on the 8th of November, 2016 was valid and met that test of proportionality.
- The court ruled that the central government's decision came following RBI board's consent which provides a built-in safeguard against center's powers.
- Additionally the difficulties faced by the citizens following the demonetization of just six years earlier can't be used as a basis to overturn the decision.
- In the case of the creation of a new time frame for the return of the currency that was demonetised, the majority verdict stated that it was not possible to have the knowledge to formulate such an idea.

How can you define demonetization?

- Demonetization is the procedure by which the nation's currency value of money loses legally-enforceable legality.
- It's a massive change in the economy which involves the removal of the legal tender condition of a currency.

Demonetisation in the past in India

- Demonetisation in India was introduced twice prior to 2016 i.e:
- 1946, the RBI demonetized its notes. 1946, RBI demonetized 1000- - and 1000010-rupee notes.
- The year the year 1978 the the government stopped demonetizing 1,000, 5000 in addition to 10000-rupee notes to stop the spread of black money.

The reason why demonetization was questioned:

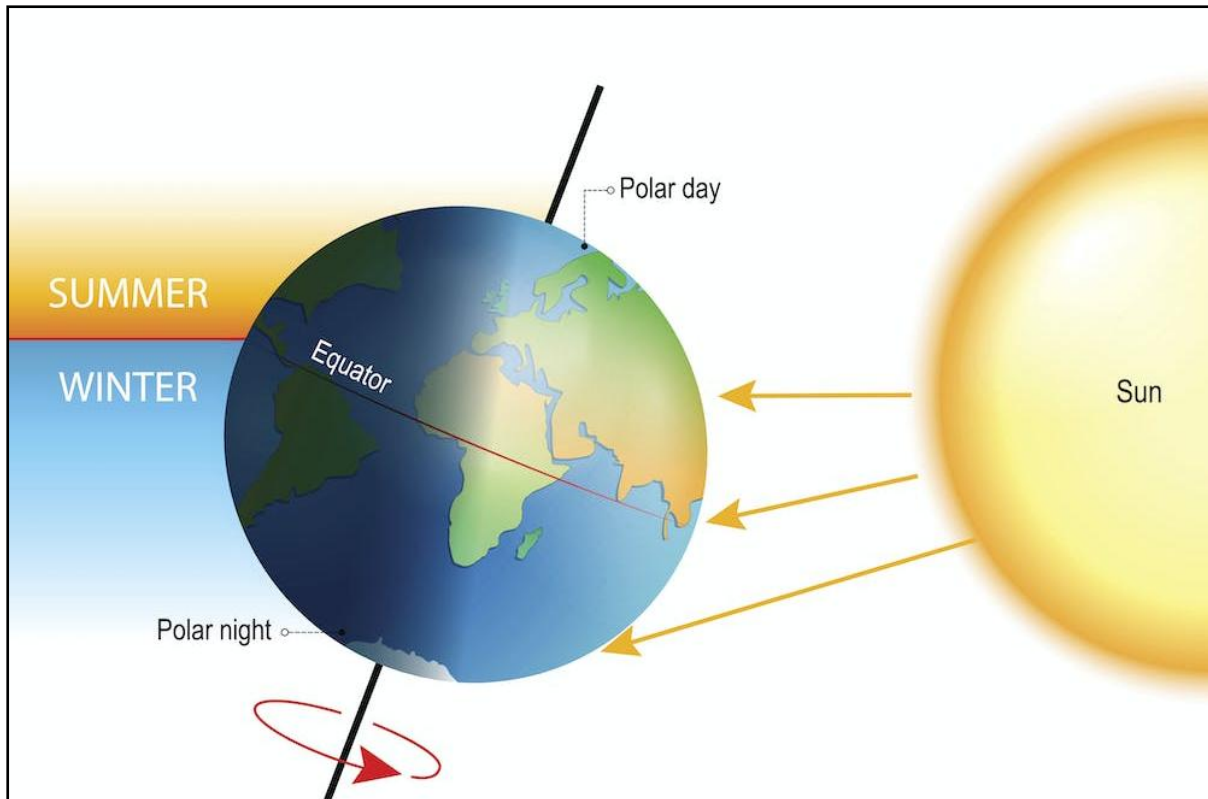
- A total of 58 petitions were submitted regarding the different issues of demonetization.
- The issue was mainly centered about the procedure outlined under the section 26(2) in the RBI Act, 1934, that appears to have not been observed.
- As per the provisions of Section 26(2) from the RBI Act, 1934 the Parliament should have debated the law regarding demonetization.
- The process shouldn't be accomplished through an announcement in the gazette.
- Furthermore, they also claimed that the notice of demonetisation was susceptible to being dismissed if the notification is found to be in violation of tests of proportionality.
- The four elements of the test for proportionality to be met are: legitimate motive in connection with the objective and necessity; whether the choice was taken is proportional and proportional or balanced.
- The report also argued that the whole decision-making process was in error in law, since the idea should have originated from the RBI Board, not from the Centre.

What is the test for proportionality?

- A Test of Proportionality means that the administrative actions must not be more extreme than it is necessary in order to get the desired result. It is a test that requires a few things like the following:
- A state action must be accompanied by an legislative directive
- The law must demonstrate that the purpose of its law is based on an objective that is legitimate for the government.
- The action must be proportionate. Such state actions, regardless of its form and the extent it takes, must be essential for a democracy. Furthermore, the action must not have no alternative or less intrusive options that can be used to accomplish the same goal.
- Proportionality is to be followed by the repeal of laws that are too extreme or inordinate.

Topic 12. HOW THE EARTH'S TILT CREATES SHORT, COLD JANUARY DAYS

Important for subject: Geography



What do the Earth's orbit affect our daytime and temperature?

- For this time that it takes to for the Earth to turn around its axis each point on the Earth's surface is facing towards the Sun for a portion of the time, and to the side of it a portion of the duration.
- This is the reason for the daily fluctuations in sun and temperature.

It is important to note that there are two more important elements:

- It is true that the Earth is a sphere, although it's not an exact sphere.
- Its axis is tilted by 23.5 degrees in relation to its orbit through the Sun.
- This is why light hits directly on its equator and hits at the North or South poles at an angle.

Why is it that it's often colder in January despite the fact that we're getting more light?

- Earth absorbs sunlight and emits it back into atmosphere.

- The radiation that comes back from Earth warms the atmosphere.
- Therefore, as long as this part of the earth gets less sunlight in comparison to the warmth it releases it, the region will continue becoming colder.
- This is especially true on the land, which loses heat more quickly than water.
- While the Earth revolves it circulates air through the air around it.
- In winter, the air is sourced from colder areas and this further lowers the temperature.

How fast do we lose daylight prior to the solstice but get it back later?

- It all depends on where we live.
- The closer we get to the poles the more rapid the rate of daylight changing is.
- For a specific location it isn't continuous throughout the year.
- It is believed that the rate of daylight changes is the slowest at solstices and December in winter.
- June in summer and fastest during the equinoxes between mid-March and mid-September.
- The change happens as the area of Earth that receives direct sun shifts between 23.5 Latitude N and then 23.5 S latitude.

What's going on within the southern hemisphere this moment?

- The summer is in full swing in the area, and it is amidst the highest amount of sunshine.
- Due to the fact that there is less water and less land on the south of the hemisphere they are less prone to extreme climate incidents (both in terms of numbers and intensity) as compared to north western hemisphere.

Topic 13. PERFECT STORM: WHAT IS THE FUJIWHARA EFFECT?

Important for subject: Geography

Supercyclone Hinnamnor as well as tropical storm Gardo are battling each other, and Hinnamnor consumes Gardo and makes its final landfall on the South Korea region, a phenomenon called "the Fujiwhara effect."

The fusion of two storms

- When two storms in the ocean occur in the same area the wind flow patterns begin

becoming one at higher and mid levels.

- This combination of winds creates an connection to two storms. 2 storms similar to an elongated segment that allows them to begin in a way that influences one another.
- In this instance, Hinnamnor's intensity reduced, while Gardo disappeared.
- In a warmer planet there is a chance that an union between two big enough tropical stormsover one of the world's oceans could result in the creation of an mega storm, causing devastation along coasts.

Recent storm merger

- In recent years, numerous storms have been close to being affected by Fujiwhara-like effects. Fujiwhara effect.
- Within a week of when Hinnamnor was able to engulf Gardo two hurricanes - Danielle and Earl--formed in tandem on the North Atlantic Ocean, sparking fears of the Fujiwhara impact.
- In the same period another storm-- Kay -- also formed on the Eastern Pacific Ocean.
- In the year 2020, hurricanes Marco and Laura were forming back their original locations in the area in the Gulf of Mexico and created an opportunity for the Fujiwhara result.

The FUJIWHARA effect

- The FUJIWHARA impact is the result of any interaction between tropical storms that created at the same time within the same region of the ocean with their eye centers at a distance less than 1,400 kilometers,with the intensity of which could differ between an adrias (wind speed less than 64 km/h) and an extreme typhoon (wind speed of over 209 km/h).
- The interaction may result in modifications in the track or intensity of both storm systems.
- In rare instances in rare instances, there are occasions when two systems can be combined, especially when they have similar dimensions and intensity, to make a bigger storm.
- The Fujiwhara effect can be described as five possible ways to achieve you can experience the Fujiwhara effects can be observed.

- One of the first is an the elastic interplay that is where that direction in which storms alters it is also the most frequent situation.
- They are also cases that are not easy to evaluate and require more thorough examination.
- Second, the Second is the partial stretching out that is when a small portion of the storm's smaller part is gone to the atmosphere.
- Third third is a full stretching out where this smaller one is disappearing into the atmosphere.
- The stretching out doesn't occur for storms with similar strength.
- The fourth kind is an partial merge wherein smaller storms merge into larger ones smaller storm is merged into the larger one.
- Five is total merger that occurs between two storms with similar force.
- When there is a merger of two tropical cyclones, winds flow together to make a swirl of wind in the air.
- It is believed that the Fujiwhara effects was discovered through Sakuhei Fujiwhara, an Japanese meteorologist, whose first article acknowledging the Fujiwhara instances came out in 1921..
- The first time we've seen the effect occurred during 1964, in the west of Pacific Ocean when typhoons Marie and Kathy combined.

Does the frequency in the Fujiwhara effect growing?

- Research has shown that it's. Between 2013 and 2017 there were 10 instances related to Fujiwhara effect. Fujiwhara effect, with mostly weak interactions, within the northwest region of the Pacific Ocean.
- As the oceans warm and there's an increase in the quantity of stronger cyclones, the likelihood for the Fujiwhara impact could increase significantly like it has already done.
- There's been a 35% rise in the intensity of typhoons which have struck Taiwan between 1977 between 1977 and 2016.
- This was due to the 0.4 to 0.7degC increase in sea surface temperature over the last forty years of the northwestern Pacific.
- It demonstrates the extent to which the global climate is the main reason

for increasing the strength of cyclones and increasing the chance of the Fujiwhara effects.

UNPREDICTABLE PATH

- The existence caused by The Fujiwhara Effect makes the cyclones more unpredictable because of their rapid increase in intensity, and the transport more rain, and introducing new methods of moving through warmer oceans.
- In the situation of the typhoons Parma as well as Melor of 2009 the situation was quite complicated for forecasters to monitor the intensity or movement of either storm particularly
- Parma will also provide the public with early warnings due to Parma, and provide early warnings due to Fujiwhara relationship between both storms.
- Then, in April of 2021 an event similar to this took place on the Indian Ocean, when cyclone Seroja was able to interact with the cyclone Odette near the shores in Western Australia gaining strength and traveling in uncharted directions.
- Seroja was an unusual storm due to the fact that the northern part in Australia is susceptible to cyclones whereas the southern part of the coast affected by cyclone is not subject to storm activity.

Topic 14. AMID CHINESE FORAYS INTO INDIAN OCEAN, RAJNATH VISITS ANDAMAN

Important for subject: Geography

Defence minister Rajnath Singal's visit to the command of the military strategic in the Andaman and Nicobar archipelago starting on Thursday has an increased significance due to the growing Chinese ventures to China's Indian Ocean Region (IOR).

Strategic importance in the context of Andaman as well as Nicobar Archipelago:

- The military's command on the Andaman and Nicobar archipelago assists India keep an eye on important chokepoints as well as the sea communication lines (SLOC) in the Bay of Bengal -- the Malacca Strait, Sunda Strait and Ombai-Wetar Straits -- from which the majority of world shipping traffic passes through.
- In 2001, the 21-year-old military command is now an Integrated Theatre Command.

- The combination of the assets of all three of the services (the Army, Navy, and Air Force) under one commander to protect the security of a particular geographical area is known as integrated theater command.
- ANC Joint Operations Centre (JOC), also known as the nerve center to coordinate planning, surveillance, operation conduct and logistical support.
- Indira Point at Campbell Bay is the southernmost point of the Great Nicobar Islands - located separate from Indonesia by the 163-km long Six Degree Channel that all maritime traffic that flows from the Malacca Strait to the West is routed.
- It is believed that this comprises the bulk of Chinese shipping, which makes it an important strategic place for India.
- Campbell Bay airfield Campbell Bay airfield helps India by coordinating regular surveillance activities throughout the Indian Ocean.
- It's also planned to be a major hub for trans-shipment for India and the countries around it.

Major Sea Lanes of Communications (SLOCs)

Malacca strait:

- **Physical Geography:**
- Connects the Andaman Sea (Indian Ocean) and the South China Sea (Pacific Ocean).
- It runs through Thailand's Indonesian Island of Sumatra in the West, and Peninsular (West) Malaysia and extreme southern Thailand to the east.
- **Strategic Importance:**
- The shortest sea route connecting East Asia, the Middle East and East Asia, helping to reduce the cost and time of transport between Asia and Europe. Middle East and Europe.
- In this corridor about 60 percent of the world's maritime trade flows pass through it, and is the primary source of oil to two major Asian consumers that are China and Japan. People's Republic of China and Japan.
- The Andaman and Nicobar Command (ANC) was created in 2001 to protect Indian strategic interests within Southeast Asia and the Strait of Malacca by accelerating the deployment of military assets to the islands.

Sunda Strait:

- It connects with the Java Sea (Pacific Ocean) with the Indian Ocean (south).
- Sunda Strait, Indonesian Selat Sunda is a channel between 16 and 70 miles (26-110 km) wide, separating the island of Java (east) as well as Sumatra.
- The Sunda Strait is an important connection between to the Indian Ocean with eastern Asia.
- The strait is located with a roughly east-west/north-west orientation with a maximum size that is 24 kilometers (15 miles) towards its northeastern point in between Cape Tua on Sumatra and Cape Pujat on Java.
- It's very deep in its western part However, when it narrows towards the east, it gets more shallow, with a total maximum depth of 20 meters (65 feet) in certain areas of the eastern portion.
- It's notoriously difficult to navigate due to the shallowness, extremely large tidal currents, sandbanks and artificial obstructions like oil platforms offshore of Java. Java coast.
- The strait's shallowness, narrowness and the absence of precise charting makes it ineffective for modern, massive vessels, which largely make use of Malacca's Strait of Malacca instead.

Ombai-Wetar Straits

- Ombai Strait is an international strait in Southeast Asia.
- It divides The Alor Archipelago from the islands of Wetar, Atauro, and Timor within Timor in Lesser Sunda Islands.
- The strait also forms the western part of two international straits; the other is Wetar Strait; the two Straits are connected to connect the Pacific Ocean with the Indian Ocean.
- East Timor is bounded by the Timor Sea to the southeast and to the southeast, Wetar Strait to the north and Ombai Strait to the north, Ombai Strait to the northwest and the western Timor (part of the Indonesian province of East Nusa Tenggara) to the southwest.

Topic 15. HOW WILL THE FREE FOODGRAIN SCHEME WORK OUT?

Important for subject: Government schemes

The Centre has decided to provide 5 kg of food grains a month to the 81 crore people who are beneficiaries of the National Food Security Act (NFSA) in the year 2023 instead of charging the beneficiaries a subsidised sum of Rs3 per kg of rice or Rs2 for a kg of wheat, or one kilogram of cereals that are coarse, as is the case currently.

What will be the effect of this new measure on the bill for food subsidy?

- In the years prior to Covid in the pre-Covid years, the cost of food subsidies due to the NFSA was about two lakh crore.
- In the the covid-19 year (2020-2022)the amount has been increased by a whopping amount.
- The government must invest an additional up to 16,000 crore to provide free food grains in the NFSA for the duration of a year.
- But, the Centre can save approximately 2 lakh crores of rupees by putting an end to the PMGKAY scheme.

What is this saying in terms of stocks of foodgrains?

- The annual requirement for foodgrains to the NFSA is approximately 525 lakh tonnes and it was the PMGKAY needed an additional of 480 lakh tonnes.
- The distinction is due to how the smallest families falling to the Antyodaya Anna Yojana category received 35 kilograms per family each monthly under NFSA and received just 5 kg for each person in the PMGKAY.

What impact will this have on the those who are affected?

- The Right to Food Campaign estimates that families with low incomes will have to pay between Rs750 and Rs900 per month to get the current the ration entitlement.

Scheme

- 2013-19
- 2020-22 (Covid years)

2023 National Food Security Act (NFSA)

- Rs3/kg Rice,
- Wheat at Rs.2/kg
- Fine grain, Rs1/kg
- Rs3/kg Rice,
- The price is Rs2/kg for wheat.
- Fine grain, Rs1/kg Free

Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)

- N/A
- Five kg of free food to be stopped 5/16
- All grains
- 5 kg per person who is poor
- 5 kg under NFSA
- 5 kg under PMGKAY
- Total= 10 kg
- 5 kg under NFSA (free)

What is Pradhan Mantri GareebKalyaanAnnadata Yojana (PM-GKAY)?

- PMGKAY can be element of the Pradhan Mantri Garib Kalyan Package (PMGKP)to help those in need fight against Covid-19.
- The program aims to provide every person protected under the National Food Security Act 2013 with an additional 5kg grain (wheat or rice) at no cost as well as five kilograms of foodgrains that are subsidised already distributed by the Public Distribution System (PDS).
- The first time it was announced was to cover it to be a three-month time frame(April May, June and April 2020), covering 80 million ration cardholders. Later it was extended to September 2022.
- The nodal Ministry for it is called the Ministry of Finance.
- The advantages of the free rations can be accessed via portability for any immigrant worker or beneficiary who is covered under the One Nation One Ration Card (ONORC) planfrom over 5 lakh ration stores across the nation.

- cost: The overall expenditure of PMGKAY is around 3.91 lakh crore. 3.91 lakh crore across each phase.
- Issues The people who benefit from the National Food Security Act are from the census that was taken in (2011). The number of people insecure about food has grown over time and many remain unaccounted for.

Issues:

- Pricey:It's very expensive for the government to support and also increases the demand for an abundance of inexpensive grains. The year 2022 is the one in which India was forced to restrict exports of wheat as well as rice due to weather that was unpredictable and affecting harvests, putting the price of food, and also causing a rumble in global agricultural markets.
- Increase Fiscal Deficit It could be danger to the goal of the government to reduce the deficit to 6.4 percent of the Gross Domestic Product.
- **The rate of inflation:** The choice of the programme could affect the rate of inflation. The price of wheat and rice, which comprise around 10 percent of India's retail inflation, are experiencing an increase due to the less production in the midst of an extreme heat wave and a unpredictable monsoon.

National Food Security Act (NFSA), 2013

- It was announced on the 10th September 2013.
- **Objective:** To ensure nutrition and food security within the human cycle of life and to ensure access to sufficient quantities of high-quality food products at an affordable cost for individuals to live their lives in dignity.
- **coverage:** 75 percent of population in rural areas and up to 50 percent of urban residents to receive subsidised foodgrains under Targeted Public Distribution System (TPDS).
- In total, NFSA caters to 67 percent of the population.
- **Eligibility:**
 - Priority households to be covered under the TPDS in accordance with guidelines issued from the State government.
 - Households who are covered under the current Antyodaya Anna Yojana.

- **Provisions:**
- 5 kg of foodgrains per person for a month at Rs. 3.02/1 for each Kg for wheat/rice/coarse grain.
- The current AAY household continues to get 35 KGs in food grain per family each month.
- Benefits for maternity and meal allowances that is at least Rs. 6000 to pregnant women and lactating mothers during pregnancy as well as six months after child's birth. Children up to 14 years old.
- Benefits for food security to recipients in the event of a shortage of eligible foodgrains or meals.
- Establishing grievance redressal procedures at the state and district level.

Topic 16. HIGHER EDUCATION FINANCING AGENCY

Important for subject: Government schemes

Recently recently, the Union Ministry of Education has disclosed the financial the specific loan programs to students pursuing higher education.

- Recently The Union Ministry of Education has revealed the specifics of the funding the specific loan programs to students pursuing higher education.
- In a statement that was shared by The Indian Express, the Union Ministry of Education attributed the deficit to Covid-19 that was announced in 2020. It also attributed an alteration to the pattern of funding that same year, which led to the gap in the loan.

What is Higher Education Financing Agency?

- Higher Education Financing Agency (HEFA) is an alliance between MoE Government of India and Canara Bank for financing creation of capital assets at top education institutions in India as part of the rising 2022.
- HEFA was registered in Section 8 as Not-for-profit under the Companies Act 2013 as a Union Govt company and as non-deposit taking Systemsically Important (NBFC-ND-SI) with the RBI.
- HEFA was incorporated on the 31st May 2017 is an joint venture between MoE, GOI and Canara Bankwith an agreed equity share of 90.91% and 09.09%. percentage of

90.91 percent and 09.09 percent respectively

- The principal goal of HEFA is to help develop of India's top-ranked universities like the IIT's and IIT's IISCs, NIT's, AIIMS to the top institutions in the world through improvements in their infrastructure and academic quality.
- HEFA is especially interested in funding the construction of infrastructure for education, research and development infrastructure and thus allowing the institutions to be among the top worldwide.

Topic 17. WOMEN BREAK NEW GROUND IN MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME

Important for subject: Polity

The percentage of women who are enrolled with the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has reached a record high of ten during the current fiscal year.

More news about HTML0:

- According to the most up-to-date statistics 57.8 percent of workers who participated in the scheme in 2013 were women. This was their highest participation rate since 2012-13.
- In the 15 States (Kerala, Bihar, Tamil Nadu, Maharashtra, Rajasthan, Andhra Pradesh, Madhya Pradesh, Karnataka, Chhattisgarh, Telangana, Odisha, Jharkhand, Assam, Gujarat and Uttar Pradesh) being surveyed 14 states showed an increase in participation by women, with the exception of Kerala.
- The decline of women's participation in Kerala the state of Kerala minuscule. Over the last five years across Kerala along with Tamil Nadu, women's share of that MGNREGA workforce has fluctuated between 85-90 percent.
- The female workforce in Bihar increased by 3.7 percent this year as Up witnessed an increase of 3.3 percentage points increase.
- However, U.P. has participation in MGNREGS about 37 percent.

About MGNREGA:

- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), also

called Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is an Indian legislation passed on the 25th of August, 2005.

- MGNREGA MGNREGA offers the legal guarantee of 100 days of work during each financial year for adults in every rural family willing to work in public areas that require manual labor that is not skilled, with the minimum wage statutory.
- The Ministry of Rural Development (MRD), Govt of India oversees the complete implementation of the scheme in conjunction with government officials of the states.
- The act was passed in order to increase the buying capacity of rural population, mostly untrained or semi-skilled those living below the poverty within rural India.
- Around one-third of the workers must be women.
- Adults in rural households must submit their name, date of birth and address along with a photo at the Gram Panchayat.
- The Gram Panchayat registers households upon request and then issues a card for employment.
- Job card job card has the information of an adult who is enrolled as well as his/her photograph.
- The registered applicant can make an application to work in writing (for minimum 14 working days continuously) in either Panchayat or Program Officer.
- It is expected that the panchayat/program officer will approve the application and issue a date-stamped acknowledgement of application. The the letter confirming work will be addressed to the applicant and can be displayed at the Panchayat office.
- The job will be given within 5 km. If it exceeds 5 km, an extra amount is paid.

Eligibility Criteria:

- You must be a Citizen of India to be eligible for MGNREGA benefits.
- The applicant must have reached the age of 18 the age to the date of applying.
- The applicant should be a part of a household in the local area (i.e. applications must be submitted with the local Gram Panchayat).
- The applicant must be willing to volunteer for untrained work.

The most important facts about HTML0:

- Individually-focused beneficiary-oriented works may be included on the card of the

Scheduled Castes as well as Scheduled Tribes, marginal or tiny farmers or land reforms, or beneficiaries of the Indira Awaas Yojana of the Government of India.

- In the first 15 days after submitting an application or the day that work is requested the applicant will be paid a wage given an applicant.
- Social Audits of MGNREGA work is obligatory, which lends to accountability and transparency.
- The Gram Sabha is the most important platform for wage earners to voice their concerns and voice their demands.
- The Gram Sabha and the Gram Panchayat which decides on the shelf of works within MGNREGA and determine their priorities.

Roles of Gram Panchayat:

1. Received applications for registration
2. Verifying the authenticity of registration applications
3. Households that register
4. Issuing Job Cards (JCs)
5. Received applications for employment
6. Issued receipts with a date for these work applications
7. Allotting work within 15 days of the submission date or as of the date work is requested for an application for advance.
8. The identification and planning of the works creating a shelf for projects and determining the order in which they should be placed.

Topic 18. GOVERNMENT PROPOSES POLICY ON ONLINE GAMING AND BAN ON ONLINE BETTING ADS ON SOCIAL MEDIA PLATFORM

Important for subject: Polity

Recently recently, The Central government has suggested amendments to the 'The IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, which will regulate the gambling online in India.

- The idea was is aimed at protecting players against harm that could result by games that require skill.
- About 40-45 percentof gamers within India are female This is why it is all the more

crucial to keep the gaming community secure.

- To control the gaming industry's online platforms as intermediaries for online gaming companies are required to perform additional due diligence, which includes:
 - KYC of users
 - Transparent withdrawal and reimbursement of funds
 - Fair distribution of the winnings
- Furthermore the online games must to be registered with a self-regulatory authority which is a self-regulatory body. Only games that have been approved by this body are able to legally function in India.
- Gaming companies must adhere to guidelines set for companies that are regulated by the Reserve Bank of India.
- The Ministry of Electronics and Information Technology is the central ministry to oversee games played online, except for the E-sports section where officials from the Department of Sports can assume the leadership.
- Other aspects of online gaming, such as advertisements, codes of ethics regarding the classification of content, etc. could be subject to regulation in the Information and Broadcasting Ministry.
- The Consumer Affairs Ministry can regulate the industry to prevent unfair trade practices.
- The body will include a self-regulating body that will comprise an Board of Directors that includes five members from various fields such as online gaming public policy, IT psychology, medicine, and psychology.
- There may be more than one self-regulatory organization.
- The body has to ensure that games that are registered don't contain any kind of that is in the best interest of the integrity and sovereignty of India
- Defense of India,
- State security
- friendship with states from other countries
- public ordinance
- encourages the commission of any cognizable offence in connection with the foregoing.
- In addition, the government has suggested to prohibit advertising for betting websites

through social networks such as Facebook, Instagram and YouTube.

- Platforms for social media will need to get confirmation from a self-regulating body to determine if the online gaming business is registered with it prior to hosting its ads

Topic 19. MHA PANEL TO EXPLORE WAYS TO PROTECT LADAKH CULTURE AND LANGUAGE

Important for subject: Art and Culture



Recently, the Ministry of Home Affairs had set up a high-powered panel to look at measures to protect Ladakh's distinctive language and culture.

- This committee is led by the Minister in State, Home Affairs Nityanand Rai.
- The 17-member commission includes Ladakh Lieutenant Governor RK Mathur.
- MP region-wide, JT Namgyal, Chairmen of the autonomous hill councils of Leh and Kargil and Joint Secretary JK and Ladakh Affairs, MHA among others.
- In accordance with the directive the committee was formed to look at ways to safeguard the unique culture of the region and its language, taking into account the geographical area and strategic significance.
- This committee is also expected to consider measures to protect of the land and

jobs for the inhabitants from Ladakh in addition to look at ways to promote inclusion and development as well as employment creation within the regional the empowerment by the Ladakh the Autonomous Hill Development Council Leh and Kargil.

More about Ladakh:

- Ladakh is the northernmost part of India and has a border with Tibet in the East as well as to the east, Indian State in Himachal Pradesh and the union territory of Jammu and Kashmir to the south as well as Gilgit-Baltistan in the West.
- The range runs from Siachen Glacier in the Karakoram range in the north, to the Great Himalayas to the south.
- It is the coldest desert of India.
- **Language Ladakhi:** The Ladakhi language is an Tibetic dialect spoken by Ladakh and is known as Bhoti as well as Bodhi.
- **Costume:** Men in Ladakh wear an oversized woolen robe that is called Goucha in their dialect while women wear a similar costume, which is known as Kuntop and Bok. Perak is a hat that is long and is also worn by men and females in Ladakh.
- **Music:** The Ladakh music Ladakh includes instruments such as the linyu (flute), damnyan (stringed instrument) pivang, khakong (sitar) daph (dafli) daman surna, piwang and (shehnai along with drums).
- **Dance:** The dances that are popular of Ladakh comprise those of Khatok Chenmo which is headed by a respected household member called Shondol .Some different dance styles are Kompa Tsum-tsak Jabro Chaams and The Chabs-Skyan Tses Raldi Tses and Alley Yaato.
- A very renowned dance styles in Ladakh is Chham also known as the dances with masks, which usually symbolize victory of goodness over evil.
- **Food:** Most of the dishes in Ladakh are made from local food items which include beans, pumpkins, beetroot, potatoes and barley. Rice mutton & chicken dishes are also made alongside the yak meat however this is typically only served during the winter months.
- Its influence on Tibetan culture can be seen in the most well-known food items of Ladakh which include thethuk skyu, momo, and thukpa.Gur the gur cha as well as the

cha Ngarmo are both popular dishes enjoyed by Ladakh's people of Ladakh, and the local liquor known as Chhang.

- Fairs and Festivals Ladakh is home to a number of festivals throughout the year, such as Hemis Tsechu and Losar. Some of the most famous festivals of Ladakh include:
- **Hemis Festival** Hemis Festival HTML0 Hemis Monastery has an annual festival named for it.
- **Losar Losar Losar** is also called Tibetan New Year, also known as Tibetan New Year is a major festival that is celebrated in Tibetan Buddhism.
- **Phyang Tsedup** Festival This festival is observed each month in the five months of the Tibetan lunar calendar.
- **Sindhu Darshan** Festival It is celebrated every the Guru Purnima along the bank of the Indus river.
- **Dosmoche** It is celebrated each year on the 12th day of the Tibetan calendar every year.
- **Saka Dawa Festival.**
- **Tak Tak Tok Festival** - It is one of the most important celebrations in Ladakh. It is celebrated in the the cave Gompa in Tak- Tok.
- **Matho Nagrang** Festival.
- Centers for culture: Buddhist monastery are usually located on isolated hills close to villages. They are the focal point for the belief of the spiritual Buddhist people.

A few monasteries and cultural centers of Ladakh include:

1. Thikse Monastery
 2. Lamayuru Monastery
 3. Hemis Monastery
 4. Stok Monastery
 5. Leh Palace
 6. Chemrey Monastery
 7. Shey Monastery
 8. Diskit Monastery
- **Arts & Crafts:** Ladakh has plenty of crafts and arts. Pattu, which is a rough material for clothing is made of wool, which is made locally by women using drop spindles,

and then weaved by weavers using portable looms

- Social Structure Women enjoy particular prominent standing within Ladakh, compared to the other regions of India. A common custom, called khang-bu or the small house is practiced. In it, the members of a family who are the elders after the oldest son is got married to a woman, stop their daily involvement in family affairs.

Topic 20. MEN ARE SLOWLY LOSING THEIR Y CHROMOSOME, BUT A NEW SEX GENE DISCOVERY IN SPINY RATS BRINGS HOPE FOR HUMANITY

Important for subject: Science and Technology

The gender of mammal and human baby animals is determined by the masculine-stipulating gene found on the Y Chromosome. But the human Y chromosome is in decline and could disappear in the next several million years which could lead to our demise unless we develop the sexual gene.

What is a chromosome?

- Chromosomes constitute cells that contain the gene material that is present in every cell. They are found within the nucleus of the Eukaryotic cell. They're a thread-like structure.
- Every the chromosomes of an cell that is eukaryotic contains DNA and the associated proteins called histone protein. They are responsible for hereditary traits that are passed down from parents to offspring, passing from one generation to the next.
- Humans are blessed with 22 sets of chromosomes numbered (autosomes) as well as two pairs of sexual the chromosomes (XX or XY), for a total of 46.
- Each pair of chromosomes has two of chromosomes that are one from each parent. This means that children get half their chromosomes from their mother, and the other half by their father.

The Y chromosome affects the sex of a human:

- In humans, just like the other mammal species, females have two X the chromosomes as well males have only one the X and a tiny one called the Y.
- The X was a reference to "unknown".

- The X is made up of around the 900 genes which perform all kinds of tasks that are not related to sexual.
- However, the Y has a few gene (about 55) and a lot of non-coding DNA simply repetitive DNA, which contains an essential gene that is responsible for kicking off men's development during the embryo.
- Around twelve weeks following conception the master gene activates other genes which regulate the growth of the testis.
- The testis embryonic produces testosterone and male hormones (testosterone and its derivatives) that ensure the baby's development as an adult male.
- This master sex gene has been recognized as being SRY (sex region on the Y) in the year 1990.
- It is activated by the genetic pathway which begins with an gene known as SOX9 which is the key to male identification in all vertebrates, however it's not on the sex the chromosomes.
- It's a disappearing
- For another animal, i.e. platypus, the numbers of both chromosomes X and Y are the same.
- This could mean that the Y Chromosome has been lost the active genes of 900 to 55 during all the time of 166 millions that both platypus and humans have evolved separately.
- This is a loss of around five genes every million years. If this is the rate, the remaining 55 genes will go in just 11 million years.
- Rodents that do not have a the Y chromosome
- Two rodent lineages have gone missing from the DNA chromosome Y and are alive.
- It's still unclear what the mole voles do to determine sexual sex, they do not have having the SRY gene.

What does this mean for the future of mankind?

- Certain snakes and lizards are female-only animals and produce eggs from their own genes, a process known as parthenogenesis.
- However, this isn't the case for mammals or humans since we possess at least 30 vital "imprinted" genes that operate only if they originate from the father through the

sperm.

- Chromosomal disorders (Numerical irregularities)
- Chromosomal disorder: (Structural abnormalities)

Topic 21. GOVERNMENT STARTS PROCESS TO BUY 100 MORE K9-VAJRAS

Important for subject: Defence

The Defence Ministry has started the process of procuring 100 additional K9-Vajra self-propelled tracked howitzers that were constructed by India through Larsen & Toubro (L&T) using technology that was transferred to South Korean defence major

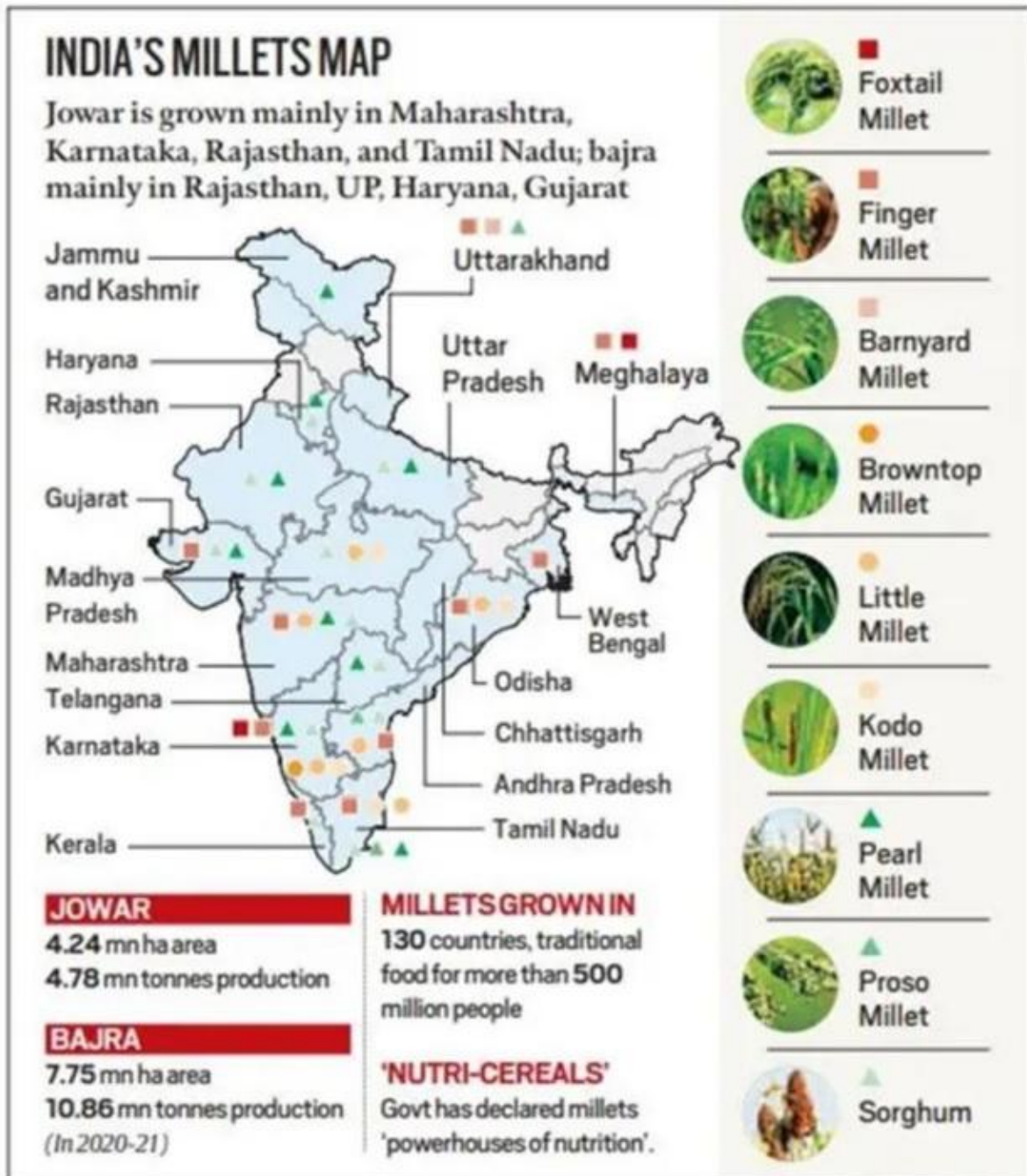
Hanwha Defense.

About K9-Vajra:

- The K9 VAJRA T 155mm 52 is an tracked , self-propelled gun (a short gun for firing rounds on high-speed trajectories with low velocity) It is a descendent of the K9 Thunder, the mainstay of the South Korean Army.
- It has a high rate of firing at long range and can be used to Indian as well as regular North Atlantic Treaty Organisation (NATO) ammunition.
- Its K9 Thunder platform is constructed of the all-welded steel armour material for protection.
- K9 gun K9 weapon was developed in the "Buy Global program of the Defence Procurement Procedure (DPP) where foreign companies are permitted to participate.
- In this particular instance, Hanwha Techwin from South Korea is the technology partner of L&T.

Topic 22. THE MILLET MANIFESTO

Important for subject: Agriculture



Recently recently, it was announced that the United Nations General Assembly declared 2023 as the International Year of Millets A proposal that was endorsed by the Government of India to encourage this "nutri-cereals."

What are Millets?

- Millets are a diverse collection consisting of tiny-seeded grasses which are grown all over the globe as cereal plants or grains to feed livestock and human food.
- The most important kinds of millets are Sorghum Pearl Millet, Ragi, Small Millet, Foxtail Millet, Barnyard Millet, Kodo Millet and others.
- Major producers include Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.
- Millets are an source of nutrition, which are better than wheat and rice in terms of vitamins, minerals and dietary fiber in addition to amino acid composition.
- In India Millets are an Kharif crop that requires lesser water as well as other agricultural inputs as compared to other staples similar to them.

How do I know the status of Millets In India?

- India, Nigeria and China are the most prolific producer of millets around the world, making up over 55 percent of the world's production.
- In India, pearl millet is the fourth most widely-cultivated food crop, following maize, wheat, rice and wheat.
- The major producers of millets are Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.

Conditions for the growth of Millet:

- Millet Name
- Description

Sorghum millet/Jowar

- Climate- Warm, arid.
- Rainfall- 45-100 cms.
- Temperature- 20-35 degrees Celsius.
- Soil - Sandy, loamy with good drainage. pH-6-7.5.
- The largest producer - Maharashtra.15/24

Finger millet/Ragi

- Climate: High altitude, extreme weather.
- Rainfall- 70-120cms.
- Temperature- 25-30 degrees Celsius.
- Soil- Red,black,sandy,loamy and lateritic;pH-4.5-8.
- Largest producer- Karnatak

Pearl millet/Bajra

- Climate- humid conditions, with no irrigation.
- Rainfall- 40-50cms .
- Temperature- 20-30 degrees Celsius.
- Soil Black cotton. Sandy loamy, upland gravelly with good drainage; pH-low.
- The largest producer in the world-Rajasthan.

Foxtail millet/Kangni

- Climate: Warm, dry Tropical region.
- Rainfall- 50-75 cms.
- Temperature- 15-30 degrees Celsius.
- Soil- Sandy, loam; pH-5.5-7
- The biggest producer is Andhra Pradesh.

Barnyard millet/Sanwa

- Climate - Tropical, subtropical High altitude.
- Rainfall-60-80cms.
- Temperature-18-27 degree Celsius.
- Soil- sandy, loam; pH-5.5-7.5.
- Largest producer-Himalayan hills.

Kodo millet/Kodon

- Climate-Warm, dry, and extremely drought-tolerant.
- Rainfall-50-60 cms.
- Temperature- 26-29 degrees Celsius.

- Soil-Gravelly, stony, hilly; pH-5.5-7.5.
- Largest producer-Madhya Pradesh

Proso millet/Chena

- Climate-Warm, arid,non-irrigated.
- Rainfall-20-50cms.
- Temperature-10-45 degree Celsius.
- Soil-Many types;pH-5.5-6.5.
- Largest producer- Madhya Pradesh.

Why do consumers and celebrities ignore millets?

Consumers:

- The process of rolling rotis is much easier using wheat flour than millet flour. This is due to gluten proteins, despite their disadvantages, make wheat dough more flexible and flexible.
- The breads that result are airy and soft, not the case with bajra and Jowar.

Farmers

- Lower yields per hectare (the national average is 1 ton for jowar. 1.5 tonnes of bajra, and 1.7 tonnes of ragi in contrast to 3.5 tonnes in wheat, and four tonnes to paddy disincentive.
- If they had access to a reliable irrigation, they could be tempted to switch to rice sugarcane, wheat or cotton

What steps are that are being taken in India to encourage millets?

- Millets are being promoted via information dissemination using technology high-quality seeds, millet hubs for seed as well as awareness raising. minimum support price , and the inclusion of PDS
- The Union Agriculture Ministry, in April declared millets "Nutri Cereals"considering the high nutritional value as well as .Moreover the year 2018 was declared as the year of national celebrations for Millets'
- The government increased the MSP of nutri-cereals.

- The Government of India, through the revamped National Food Security Mission Operational Guidelines (NFSM) has laid specific focus on 212 millet districts in 14 states to provide incentives to farmers for quality seed production/distribution, field-level demonstrations, training, primary processing clusters and research support.
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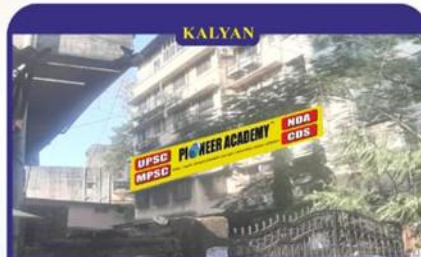
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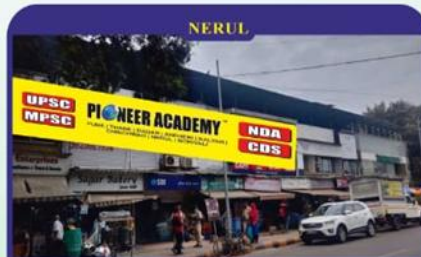
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