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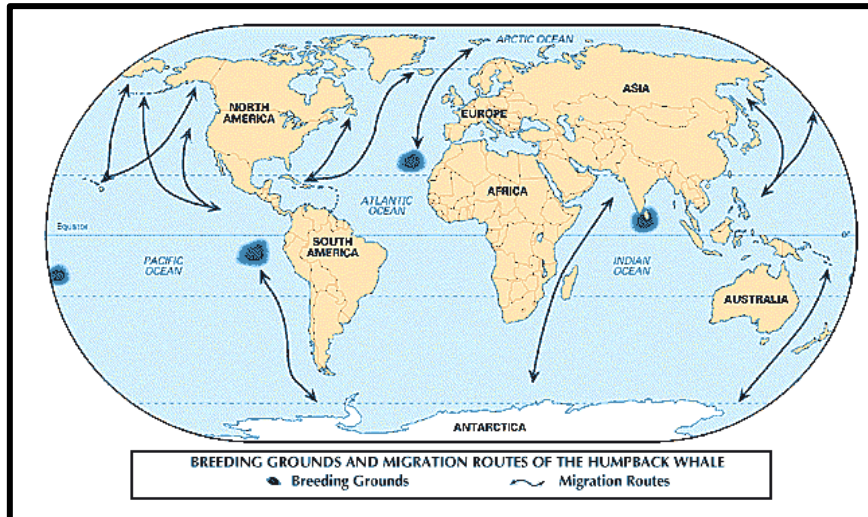
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Topic 1. HUMPBACK WHALES MIGRATION TO AUSTRALIA'S COASTS FROM ANTARCTIC WATERS.

Important for Subject: Environment



Migaloo, the famous white humpback, has been missing since 2 years due to climate change. Migaloo: Migaloo is the most well-known humpback whale, and may be the last pure white adult humpback. Because he is entirely white, Migaloo is easily recognized as one of the most famous whales in the world.

- Because of his distinctive appearance, Migaloo is a symbol for the east coast humpback whale population in Australia.
- Migaloo is a prominent whale.
- The annual search for Migaloo provides an opportunity to connect people with the ocean in the colder months and to learn more about how important a role whales have in ecosystems.
- Migaloo is also a symbol of the link whales make between extreme environments, the Antarctic and the tropical tropics.
- Both are susceptible to climate change.
- Factors that affect Migaloo: In Australia, humpbacks were taken off the endangered species list earlier this year.
- This was because their populations had rebounded significantly following whaling. Climate change is a new threat.
- Rising sea surface temperatures could make breeding areas for humpback whales too hot.

- The variations in whale migration are highlighted by Migaloo's appearance (or lack thereof).
- Migaloo's choice of where and when to swim can also be affected by environmental conditions like currents and temperature.
- There are many factors that can influence Migaloo's behaviour.
- These include social factors such as interactions with whales (including the ability to move between pods), or biological needs (such as the desire to reproduce north).
- Migaloo and the other whales are constantly in danger from humans, including entanglement with fishing gear and collisions with ships.
- There are also natural threats such as predation from killer whales.
- There is hope that Migaloo will be seen again this year, as the annual migration lasts until October or November.

Topic 2. RECORD HIGH TEMPERATURES AND DEVASTATING WILDFIRES IN EUROPE

Important for Subject: Environment



Spain, Germany and Greece are facing the worst effects of Europe's unprecedented heat wave. Temperatures rose to record levels even before the official start. Wildfires have devastated all three countries.

How can forests catch fire?

- Wildfires are large fires that start unpredictably in combustible areas such as dry forests and bush. They can often burn uncontrollably for large areas and long periods of time.
- Natural factors, such as prolonged hot and dry weather, lightning strikes, or human negligence, can set off a forest fire.
- To grow and spread wildfires, they need a "fire triangle" consisting of heat, fuel, oxygen and fuel.
- They can be extinguished if at least one of these three elements has been removed.
- The speed at which wildfires spread depends on weather, wind, fuel and topography.
- This is one of the main reasons why they cause such destruction.
- California, Australia and Brazil have experienced devastating wildfires due to high temperatures and droughts.
- The most susceptible to fire are slopes that face the sun, and those that retain more heat.
- **Forest fires in Europe:** The European Forest Fire Information System, (EFFIS) reported that 2021 was Europe's second-worst fire season since 2000 when the EFFIS began keeping records about wildfires.
- 2018 saw record fires across Europe, particularly in the northern and central regions. The wildfires were fuelled by heatwaves and droughts in 2017-2018.

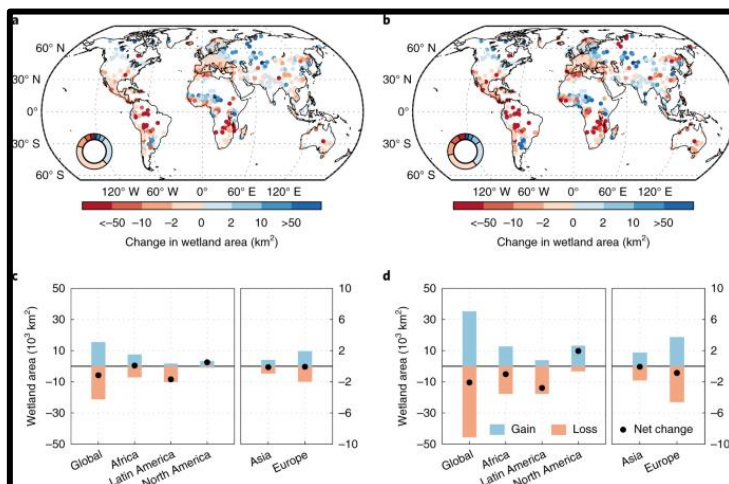
Climate change is causing the wildfires?

- According to climate change, heat waves are now 5-10 times more severe than they were a century ago.
- Climate change, caused by man, has led to extreme weather events like droughts and flooding, as well as higher temperatures.
- These weather disruptions disrupt the natural weather cycle.
- The mercury soared to 40 degrees Celsius in Europe's first heatwave of the year, temperatures which are not expected until July or August.
- May 2022 saw the highest levels of carbon dioxide in the Earth's atmosphere at 420ppm (parts/million), levels not seen in over 4 million years.
- Carbon dioxide traps heat and can cause heatwaves, droughts and fires.

- Climate change has been responsible for the wildfires that erupted in Germany, Spain, and Greece.

Topic 3. SUGGESTIONS TO INCLUDE WETLAND CONSERVATION IN UPCOMING BIODIVERSITY, CLIMATE CHANGE NEGOTIATIONS

Important for Subject: Environment



Experts recommended that wetland conservation targets by 2030 be discussed at the CoP15 (Convention on Biological Diversity to Be Held in Nairobi) as well as the Conference of Parties to UN Framework Convention on Climate Change (CoP27).

- It is crucial to include wetland conservation as part of climate change negotiations and biodiversity:** Wetlands are disappearing three-fold faster than forests.
- 40% of all animals and plants in the world live in wetlands.
- Each year, 200 new species are discovered in freshwater wetlands.
- They are responsible for storing almost one-third of the global soil carbon.
- CoP15 negotiations will be focused on meeting global biodiversity targets, which include ensuring that 30 percent of land and ocean are protected.
- Experts said that including wetlands in land and ocean targets does not recognize the unique characteristics of wetlands that interconnect with land and water.
- Definitions of wetlands According to the Ramsar Convention on Wetlands, wetlands are defined as "areas fen, marsh, peatland or water; whether natural or artificial with water that is either static or flowing, fresh or brackish, salt, or both, but not including river channels, paddy field, or other areas where commercial activity occurs.

- "According to the Union Ministry of Environment, Forest and Climate Change, the Wetlands (Conservation and Management) Rules, 2017, wetlands are defined as an "area of marsh, peatland, or water; natural or artificial, temporary or permanent with water that is fresh, brackish, salt, or both.
- However, this does not include paddy fields, river channels, human-made water bodies/ tanks specially constructed for drinking water purposes and structures designed for aquaculture, salt production, and irrigation recreation purposes."
- Because of their ability to filter pollutants out of the water they flow through, natural wetlands are often called "earth's kidneys".
- The hydrological cycle is vitally dependent on wetlands ecosystems.
- They are highly productive and support rich biodiversity.
- Many people depend on wetlands to provide their food and water, as well as their livelihood.
- Some wetlands play an important role in reducing the effects of climate change, such as floods and other extreme weather events.
- They are also one of the world's most important carbon stores, and their conservation can help reduce carbon emissions.

What are the dangers to wetlands?

- Around 87% of the world's natural wetlands have been lost since the 1700s, and 35% disappeared between the 1970s and 2000s.
- Over the past four decades, India has lost almost one-third its natural wetlands due to pollution, urbanization and agricultural expansion.
- The rate at which wetlands disappear is three times faster than that of forests, and it is expected to continue increasing.
- Reclamation and degradation of wetlands through drainage and landfill, polluting (discharges of domestic and industrial effluents and disposal of solid waste), hydrological alteration, water withdrawal and changes of inflow, and over-exploitation of natural resource, which can lead to loss of biodiversity and disruption of ecosystem services provided by the wetlands.

Is India pursuing a policy to preserve wetlands?

- India is a party to the Ramsar Convention on Wetlands (an intergovernmental treaty) that provides the framework and guidelines for national and international action for conservation and wise usage of wetlands.
- The legislation that protects wetlands is part of the natural environment.
- Indian Environment (Protection) Act 1986 provides protection and enhancement of the environment, including wetlands.
- The 2006 National Environment Policy recognizes the ecosystem services provided to wetlands and emphasizes the necessity to establish a regulatory mechanism to ensure that all wetlands are protected and managed in a way that preserves their ecological character and supports their integrated management.
- The Wetlands (Conservation and Management) Rules, 2017, which were notified by MoEF&CC under the Environment (Protection) Act, 1987, are specific to wetlands.
- These rules provide a regulatory framework to ensure the conservation and management of wetlands within India.
- The ministry released guidelines in early 2020 to assist state governments with implementing the rules.
- The country conducted a National Wetland Inventory and Assessment between 2006 and 2011.
- This was done using Indian remote sensing satellites.
- The national and state-level atlases of wetland inventories were then released.
- They contain spatial data for each State as well as UT.
- The central government assists state governments in implementing management plans for priority wetlands.
- Since 1986, the National Wetlands Conservation Programme is in operation.
- The National Plan for Conservation of Aquatic Ecosystems has been the name of this program since 2013.
- A scheme is run by the Ministry of Jal Shakti for repair, renovation, and restoration of water bodies.

Topic 4. MOEF&CC'S COMPLIANCE MODULE FOR ENVIRONMENTAL CLEARANCE

Important for Subject: Environment

Union Ministry of Environment, Forest and Climate Change (MoEF&CC), released a notification, outlining a compliance module that will be used for projects granted environmental clearance in accordance with the Environmental Impact Assessment Notification (EIA).

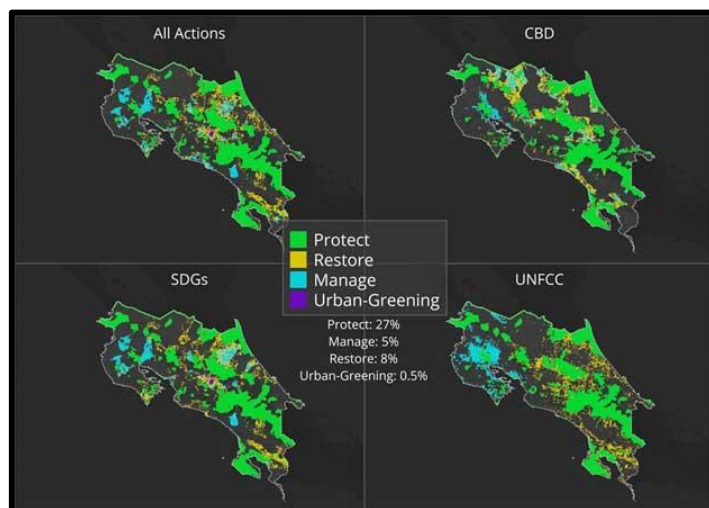
What is an Environmental Impact Assessment?

- EIA is a management tool that helps to identify the environmental, social, and economic consequences of a project prior to making a decision.
- It aims to maximize the use of natural resources in the context of sustainable development.
- EIA Notification 2006. The EIA Notification (2006) requires that all projects that are likely to cause pollution, displacement, or destruction of natural resources must be cleared according to standard and with the consent of various statutory agencies at both the state and central level.
- The notification requires that a compliance report be submitted each six months after the grant of environmental clearance.
- It will provide information about the project's compliance with the conditions.
- According to MoEF&CC notification project owners sometimes don't follow the deadline for submitting compliance reports under the EIA Notification 2006.
- The project proponent used to submit the compliance reports in hardcopy to regulatory agencies.
- Later, they would upload them on the MoEF&CC's environmental clearance portal, 'Parivesh'.
- **PARIVESH web portal** - Parivesh, a web-based, role-based workflow app, was developed to allow online submission and monitoring by the proposal submitters for seeking Environment, Wildlife, and CRZ Clearances from central, state, and district level authorities.
- It automates all aspects of the tracking of proposals, including online submission of new proposals, editing/updating details and displaying status at each stage.

- New Compliance module for environmental clearance.
- This module streamlines compliance and monitoring and eliminates delays in submitting compliance reports to regulatory agencies.
- To improve transparency and efficiency in compliance and monitoring, the ministry has made it mandatory that compliance reports be submitted online.
- The ministry made it possible to upload environmental conditions online.
- This will allow project developers to submit their compliance status.
- The portal allows project monitors to access compliance data.
- In its latest notification, the ministry made it mandatory that all applicants submit a self-declaration stating their status for each parameter.
- It was previously impossible to manually check so many incoming files.
- The proponent could not escape scrutiny.
- This provision prevents the submission of a compliance report without the necessary proof.

Topic 5. GAPS IN POST-2020 GLOBAL BIODIVERSITY FRAMEWORK

Important for Subject: Environment



An international group of ecologists, policy experts and environmental scientists have stated that the Post-2020 Global Biodiversity Framework draft fails to address the full range of chemical pollutants that are threatening ecosystems worldwide.

- Draft of Post-2020 Global Biodiversity Framework.
- The draft agreement is too narrowly focused on nutrients, pesticides, and plastics.
- Many chemicals of high concern or importance are not included in the equation,

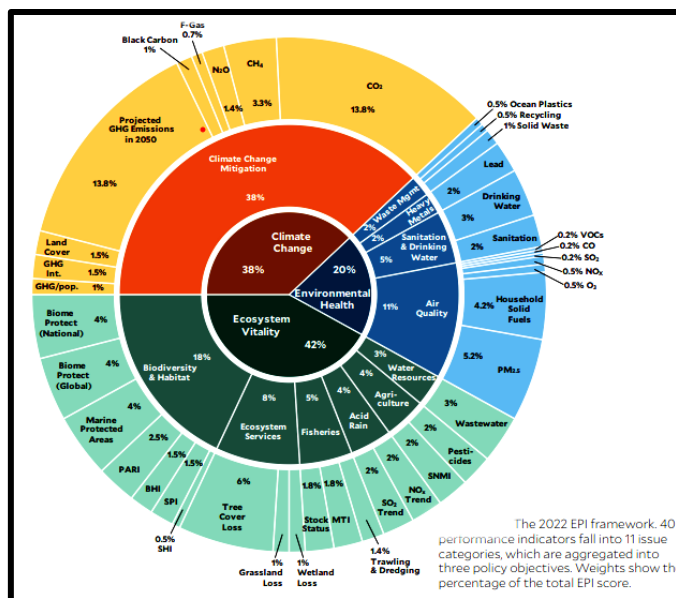
including persistent and toxic substances like mercury and per and poly fluoroalkyl substances (PFAS) as well as pharmaceuticals.

- 21 targets are included in the draft framework that will be reviewed June 21-26.
- Target 7 includes only nutrients, pesticides, and plastic waste.
- The July 2021 draft stated that the goal is to reduce pollution from all sources to levels that do not harm biodiversity and ecosystem functions.
- Experts also said that the modified text was released in March 2022 following the meeting in Geneva.
- This criticism was made at a time when China seems to be dragging its feet in finalising the CoP15 date.
- China is one the 17 mega-biodiversity nations in the world and hosts nearly 10% of all the plant species.
- China is the current president of the CoP, but has yet to announce the date.
- Experts worry that the delay could be harmful to global biodiversity.
- The meeting's first portion was held virtually in October 2021.
- According to a June 3rd study, 44 percent of Earth's surface area must be preserved in order to preserve biodiversity.
- More than a decade ago, the current global goal was to preserve at least 17 per cent of terrestrial areas via protected areas and other site-based methods for improving biodiversity and ecosystems.
- In target 3, the post 2020 framework stated that countries should conserve 30% of their land.
- The International Food Policy Research Institute published a March report that showed how important it is to protect biodiversity for food availability.
- Global biodiversity, food security, and climate mitigation goals would be achieved by 2050 if we shift our diets, increase crop and livestock productivity, as well as limit agricultural land expansion.
- **Post-2020 Global Biodiversity Framework for CoP15:** In 2020, the 15th meeting of the Conference of the Parties to the UN Convention on Biological Diversity (CoP15), was scheduled to take place in Kunming, China, but was delayed by the global pandemic.
- **The draft framework for post 2020 aims to achieve the following goals:** To protect

biodiversity at all levels (genetics, species and ecosystems), sustainability and human well-being in the use and fair and equitable distribution of benefits.

Topic 6. ENVIRONMENTAL PERFORMANCE INDEX (EPI)

Important for Subject: Environment



India is ranked last of all 180 countries in the latest Environmental Performance Index (EPI).

- **Environment Performance Index:** This biennial index was created by the World Economic Forum, in collaboration with Yale Center for Environmental Law and Policy and Columbia University Center for International Earth Science Information Network.
- It is called the Environmental Sustainability Index (EPI).
- EPI uses 40 performance indicators that cover 11 issue categories to rank 180 countries in terms of climate change performance, ecosystem health, and sustainability.
- These indicators give a measure of the country's progress towards achieving their environmental policy goals.
- India is ranked 180th after Bangladesh, Vietnam, Myanmar, and Bangladesh. Together, these five countries are the worst performing for environmental health.
- EPI also found India to be weak in rule of law and control over corruption, as well as government effectiveness.
- EPI Issues India would do much better if it was assessed over a decade and given a

penalty for their stock of CO₂.

- The EPI focuses on the performance of countries on air quality, environmental conservation, and waste management.

Government response:

- The Union Government rejected the EPI scores and ranking as they were based on "unfounded assumption", "surmises", and "unscientific methodologies."
- India is being pressured to increase its ambition and commitment to the 1.5deg Centigrade target for temperature rise under Paris Agreement.
- This goal goes beyond the less strict 2degC.
- India scores higher in sub-metrics like growth rates for black carbon and methane, as well as greenhouse gas emissions, based on their intensity, per capita volumes, than it does overall.
- The Index ranks India low in projected greenhouse gas emissions (GHGs) for the mid-century.
- This is a goal for Net Zero emissions.
- According to the EPI report, China, India and the United States are likely to account for more than 50% of global residual greenhouse gases emissions.
- Low PARI score and claims India has protested that India's new State of Forest Report (ISFR 2021) was not included in the biodiversity metric.
- India scores very low in Ecosystem Vitality variables such as Marine Protected Areas (0.3% of 100) and Protected Areas Representativeness Index (0.5), Terrestrial Biome Protection, (TBM - National (1.2), and TBM-Global (2.1). At 62, wetland loss prevention ranks among the highest scores in India.
- The low PARI score is a result of the many biomes in India.
- This puts pressure on government to defend claims that EPI scores for biodiversity and health are flawed due to insufficient habitat and species data collection.
- **Air quality, biome protection:** While the rank and scores could be debated, it is clear that India's air is among the worst. The data for 2019, which shows that economic activity was not restricted by COVID-19 in 2019, show that 1.67 million people died from pollution-related causes during 2019.
- Recent literature and commentary in The Lancet Planetary Health have reiterated this

point, stating that while India has developed tools and regulatory powers to reduce pollution sources, there is no central system that can drive pollution control efforts and make substantial improvements.

- Way forward the national case for luxury urban emissions would be stronger if it was aimed at poorer Indians.
- The prevailing high fuel prices and vehicular taxes, which account for 13% of the country's emissions, could only drive change and create a green commons.
- This would include clean public transport and cycling as well as pedestrianization.
- While the national goal of Net Zero emissions by 2070 is a longer-term target, other areas could benefit from policies that avoid a carbon lock in effect.
- There is scope to reduce emissions from buildings and embedded carbon in steel and cement.
- India should adopt a strict dashboard approach to indicators.
- This would be based on the proposals made by Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi during their exploration of the development beyond GDP.
- This will generate data that is reliable, identify the true beneficiaries of policies, prevent serious environmental deficits, and ensure inter-generational equality in the use natural resources.
- It can also reduce pollution.
- External assessments may not be as accurate as they are.

Topic 7. WETLANDS

Important for Subject: Environment



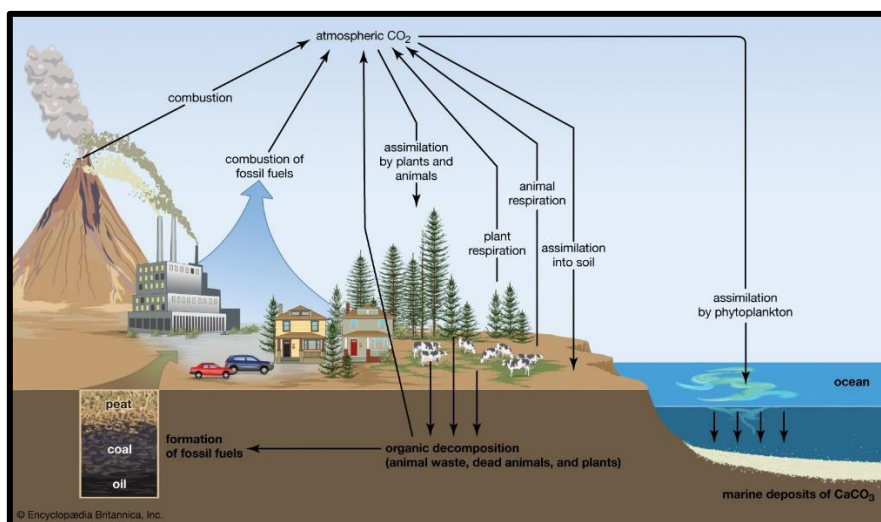
Wetlands help stabilise CO₂, GHG concentrations. Climate change and Wetlands Conservation and wise use both of the inland and coastal wetlands is a powerful response to

climate change.

- By reducing CO₂, CH₄, N₂O, and Green House Gases (GHG), wetlands can help stabilize CO₂, CH₄, and N₂O concentrations.
- They also reduce climate- and land-use-mediated GHG emissions and increase the potential to actively capture CO₂ from the atmosphere and sequester it.
- The coastal blue carbon is absorbed by mangroves, salt marshes, and seagrasses through photosynthesis and stored within wet anaerobic soils.
- The largest carbon reserve in the world is believed to be peatlands.
- India's pledges to reduce its carbon emissions at the Glasgow summit can be helped by wetlands.
- These include net-zero emission by 2070, reducing carbon dioxide emissions by one million tonnes, and reducing the economic carbon intensity to below 45 percent.
- Many wetlands can also contribute to GHG emissions.
- The recent Concerns Wetlands Change Atlas published by the Space Application Center shows a decline in natural coastal wetlands.
- It has been shown that wetlands are less able to withstand floods, droughts and storm surges.
- Wetland degradation can pose a threat to lives, as shown by the floods that occurred in Kashmir Valley in 2014 and Chennai December 2015.
- Excessive pollutants (Industrial effluents and domestic waste, as well as agricultural runoff, etc.)
- They are dumped in wetlands above their recycling capacity.
- **India's Ramsar Sites Protection Measures** - India has identified 49 Ramsar sites Wetlands International National Wetlands Conservation Programme.
- The Environment Ministry supports the implementation of management plans for more than 250 wetlands in schemes like National Plan for Conservation of Aquatic Ecosystems and Coral Reefs and Integrated Development of Wildlife Habitats.

Topic 8. CARBON SINKS

Important for Subject: Environment



India is committed to generating an additional 2.5-3 Billion tonnes of carbon dioxide equivalent by increasing forest and tree cover. This is India's Paris Agreement goal.

What is a carbon sink?

- Carbon sinks are products and places that store and sequester carbon in organic and inorganic compounds.
- A carbon sink is simply anything that absorbs more carbon in the atmosphere than it emits through natural or artificial processes.

What are the natural and artificial carbon sinks?

- The natural carbon sinks are either terrestrial (soil, forests, and grasslands) or aquatic (the ocean).
- The oceans are currently the largest carbon reservoirs on the planet.
- To combat rising carbon levels in the atmosphere, artificial carbon sinks have been suggested.
- One idea is to use engineered timber, instead of steel or cement, to transform rapidly growing areas into carbon sinks.

How can oceans function as carbon sinks?

- The Ocean is the largest carbon sink and reservoir.

- It stores carbon in many forms.
- Dissolved inorganic carbon (DIC) is the most abundant form.
- Over millennia, this carbon entered the oceans through seawater interaction with sediments, weathering, gas exchange with the atmosphere, and outgassing from Earth's interior (for instance, volcanic vents).
- The CO₂ is usually dissolved in seawater where it forms bicarbonate and carbonate (HCO₃⁺) ions.
- The ocean's intermediate and deep oceans are the largest five carbon reservoirs.
- The actions of biological carbon pump, which are mainly found in the ocean's surface layers, also make oceans carbon sinks.
- Photosynthesis is the process by which phytoplankton converts CO₂ from air into biomass.

What are terrestrial systems that act as carbon sinks and how do they work?

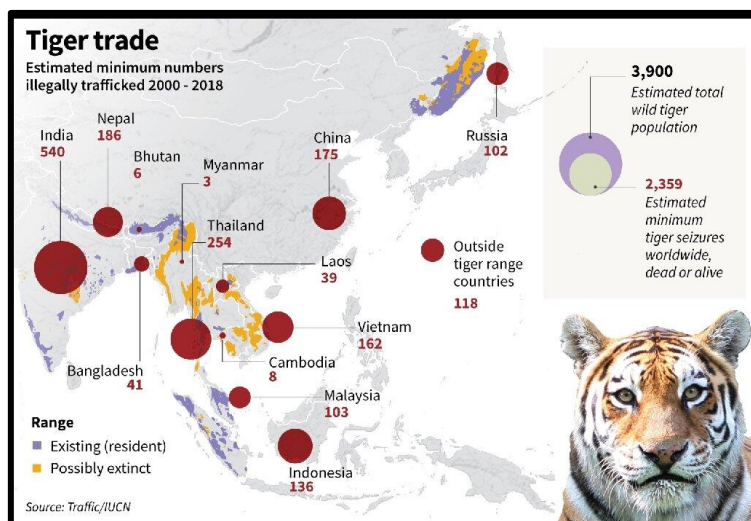
- Although terrestrial systems, such as soil, vegetation, permafrost and fossil fuel reserves, are important carbon sinks, their carbon stocks are still a lot lower than the oceans'.
- Photosynthesis is the process by which plants capture CO₂ from the atmosphere and store it in organic molecules.
- Important terrestrial carbon sinks include grasslands, peatlands, and forests.

What India plans to do to offset its carbon emissions by using carbon sinks?

- India's NDC (nationally decided contributions) goal under Paris Agreement is to create an additional 2.5-3 Billion tonnes of CO₂e by increasing forest cover and tree cover.
- This will be achieved by 2030.
- A 2021 report by TERI (The Energy Research Institute) states that India must double its forest cover before 2030.
- This report emphasizes the importance of blue carbon initiatives (carbon storage capacity in coastal and maritime ecosystems), integrated approaches for sustainable forest management and the agroforestry industry to reach the NDC goals.

Topic 9. THE ILLEGAL TIGER-FARMING BUSINESS

Important for Subject: Environment



Parts of Asia are seeing a rise in illegal tiger farming.

- **Conservation efforts for Tigers and the associated problems:** While the Year of the Tiger is celebrated in 2022, human beings continue to pose a threat to the long-term survival of the wild tigers by buying, selling, and killing them and their prey.
- It's an important year for tigers, with the second Global Tiger Summit taking place in September and important international meetings about biodiversity and endangered species.
- According to a 2007 CITES resolution, tigers should only be bred for conservation purposes.
- Some Asian countries, such as Thailand, Laos and Vietnam, are not adhering to this decision.
- Although illegal, tigers can be farmed for their parts (pigs and chickens) in Laos.
- It is also allowed to continue in China, Vietnam, Thailand, and Vietnam.
- Laos has committed to stop breeding tigers and convert their tiger farms into zoos.
- However, CITES has not done much to enforce it.
- This could be accomplished through sanctions.
- The 2nd Global Tiger Summit, which will be held in Vladivostok (Russia) on September 5, is the State of Tigers in India and worldwide.
- The first summit in 2010 saw tiger range countries commit to double their numbers by the Year of the Tiger, the Chinese Zodiac's 2022.

- Parties to CITES (the convention on global wildlife trade), will meet in Panama in November 2022.
- They were signed by 184 countries, including Laos and China.
- Some populations have seen mixed results with some declining, some stable, and some increasing.
- Although tigers in South Asia have been relatively well protected, there is still significant poaching in Southeast Asia.
- India accounts for 70% of the world's tiger population.
- According to the Wildlife Protection Society of India, (WPSI), tigers in India are growing in certain areas due to their exceptional resilience and better enforcement of laws.
- While law enforcement has successfully dismantled many criminal trafficking gangs and the WPSI recorded 56 poaching deaths and seizure deaths in 2021 (the highest since 2001),

Topic 10. SINGLE-USE PLASTIC BAN IN INDIA

Important for Subject: Environment



The Centre has created a list of single-use plastic products that will be banned starting July 1. The ban was announced by the Ministry for Environment, Forest and Climate Change in a gazette notification. Now, the Centre has created a list of banned items starting next month.

What is single-use plastic, you ask?

- This refers to single-use plastic, which is used once and then discarded.
- The highest percentage of single-use plastic is manufactured and used.
- This includes packaging, bottles, soap, detergents, cosmetics, polythene bags (shampoo, shampoos, and makeups), plastic bags, face masks.
- Coffee cups, plastic bags, plastic bags, plastic bags, trash bags, food packaging, etc.
- One of Australia's philanthropic foundations, the Minderoo Foundation, reported that

single-use plastics make up a third of all plastic globally.

- 98% of plastic is made from fossil fuels.
- Based on the current production trajectory, single-use plastic could contribute between 5-10% to greenhouse gas emissions by 2050.
- According to the report, India is ranked 94 in the list of top 100 countries that produce single-use plastic waste.
- The top three are Australia, Singapore and Oman.
- India produces 11.8 million tonnes of single-use plastic waste annually and imports 2.9 MMT.
- India's net production is 5.6 MMT and per capita is 4kg.

What items are being banned?

- The Central Pollution Control Board (CPCB), has announced a ban on earbuds, balloon sticks, candy and ice cream sticks, cutlery items such as plates, cups and glasses, forks and spoons; sweet boxes; invitations cards; cigarette packs; PVC banners under 100 microns and polystyrene decorations.
- In September 2021, the Ministry banned all polythene bags below 75 microns.
- This was an increase from the 50 microns previously.
- The Plastic Waste Management Rules (2016) also ban sachets made from plastic material to store, pack or sell gutkha, pan masala, and tobacco.

These items are banned for what reason?

- The "difficulty in collection and recycling" was the basis for choosing the first single-use plastic items to be banned.
- Plastic isn't the enemy, it is that plastic exists in the world.
- If plastic is left in the environment for a long time without decaying, it can turn into micro plastics.
- This first enters our food and then our bodies, which can be very harmful.
- These items are hard to collect because they are often small or thrown away directly into the environment.
- This makes it difficult to recycle, unlike larger items.
- Packaging accounts for the largest amount of single-use plastic.

- This category includes everything from toothpaste, shaving cream, and frozen foods.

How will the ban be enforced?

- The Centre's CPCB will monitor the ban, as well as the State Pollution Control Boards (SPCBs), which will regularly report to the Centre.
- SPCBs, Pollution Control Committees were given directions to modify or revoke consents to operate under the Air/Water Act for industries that produce single-use plastic products.
- The local authorities were directed to issue new commercial licenses under the condition that SUP items are not sold on their premises.
- Existing commercial licences will also be cancelled if these items are being sold.
- CPCB issued one-time certificates for 200 producers of compostable plastic, and the BIS met standards for biodegradable material.
- The Environment Protection Act 1986 allows for either a maximum of 5 years imprisonment or an Rs 1 lakh penalty, or both.
- The SPCB can ask for Environmental Damage Compensation.
- Additionally, municipal laws regarding plastic waste are available with their own penal codes.

What are the other countries doing about single-use plastics?

- An agreement was signed by 124 countries that are parties to the United Nations Environment Assembly (India included) to address plastic pollution.
- It will be legally binding in the future for all signatories.
- In 2002, Bangladesh was the first country to ban thin plastic bags.
- In July 2019, New Zealand was the second country to ban plastic bags.
- China implemented a phased ban on plastic bags in 2020.

Topic 11. MICROPLASTICS IN ANTARCTICA

Important for Subject: Environment



Newly fallen snow in Antarctica has been found to contain microplastics for the first time.

What is micro plastics?

- Micro plastics, which are small plastic particles less than 5mm in size, are much smaller than a grain rice.
- There are two types. Micro plastics that are small and purposely made for commercial use are called primary micro plastics.
- They can be found in cosmetics, nudles-plastic pellets used to make industrial products, or in synthetic textile fibres such as nylon.
- Secondary micro plastics can be formed by the degrading of larger plastic items such as bottles, fishing nets, and plastic bags. This happens due to exposure to radiation, such as the sun, wind, and ocean waves.

How did they get to Antarctica?

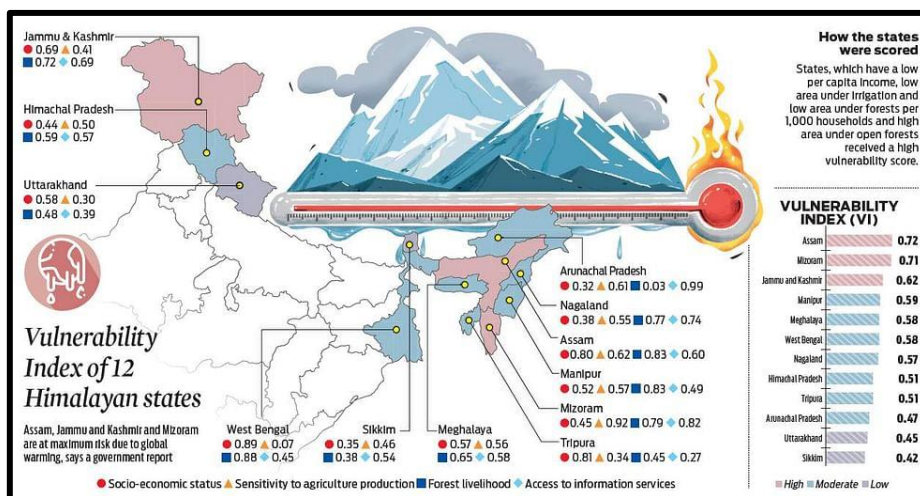
- On average, there were 29 micro plastic particles per litre of snow melted.
- Because of their low density and light weight, these particles could have travelled more than 6,000 kilometers by air.
- It is possible that Antarctica's human presence created a micro plastic footprint.
- The most common of the 13 types of plastics found was polyethylene Terephthalate (PET), which is a plastic that is used in everyday products like plastic bottles and packaging. 79% of all samples contained PET.
- Local research stations are the most likely source of airborne micro plastic due to the

clothing of staff, the broken pieces of plastic equipment, and the mismanaged waste.

- The micro plastics found in samples taken from local bases camps (Scott Base, McMurdo Station on Ross Island) were nearly three times more concentrated than those taken from remote locations.
- According to the report, way finding flags made from synthetic polyamide fabric, which are used to identify safe routes for travel might also emit micro plastics.
- This discovery is troubling.
- This shows that micro plastics are spreading so widely that even remote and uninhabited areas of the globe are infested.
- These particles could pose a serious threat to Antarctica's unique ecosystem.
- They are not biodegradable, and they can build up in the environment.
- They can cause severe health problems in animals and plants.
- Micro plastics can be toxic to animals and plants.
- Micro plastics can also contribute to climate change's negative impact.
- The melting of ice sheets and glaciers is already rapid.
- According to the report, micro plastics found in snow and ice can accelerate melting of the cryosphere, regions where water remains in solid form like the North and South Poles.
- Micro plastics of darker colours, which made up 55% of all samples, are more dangerous than those of lighter colours.
- They are more likely to absorb sunlight and retain heat, and are more prevalent in the air and land.
- As snow travels through the atmosphere, it bonds to pollutants and other airborne particles, which then accumulate on Earth's surface.
- This phenomenon is known as "scavenging", and scientists believe it is an important way micro plastics can travel to pollute water and land.
- They can also be carried by snow, rain, and wind and could lead to possible inhalation by wildlife and humans.

Topic 12. GLOBAL WARMING AND THE HIMALAYAS

Important for Subject: Environment



Global warming is causing underground phenomena that are threatening the Himalayas.

Impact of global heating in Himalayan ecosystem: Permafrost Thaw is one of the changes in the Himalayan mountain cryosphere.

- This is causing irreparable damage and loss to the valley.
- The Himalayan region can suffer huge economic losses from permafrost melting, as the cryosphere is at the source of many rivers from South Asia.
- It also influences many activities such as irrigation and fisheries and hydropower.
- Evidence has been found that permafrost melting in the Tibetan Plateau has caused changes in vegetation, groundwater storage, wetlands and ponds.
- It causes slope instability and landslides.

What is Permafrost?

- Permafrost is covered by "the active layer", a layer of seasonally frozen or thawing ground.
- Permafrost is a layer of seasonally frozen and thawed ground that can range in thickness from 3 feet to 4900 feet.
- It contains carbon-based remains from plants and animals that were frozen before they could decompose.
- One million kilometres of Siberia and Canada are home to pockets of Yedoma, which is thick permafrost deposits from the last Ice Age.
- Permafrost, which is considered the largest terrestrial carbon sink, has an estimated

current reservoir of as high as 1600 billion tons of carbon.

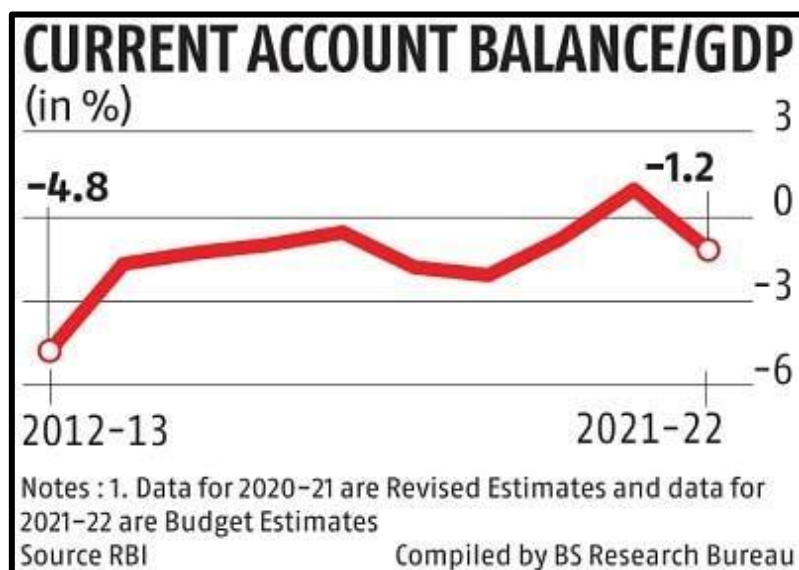
- This is more than the amount of carbon stored in the soils of the planet.
- Scientists worry that the IPCC's recommendation to limit global warming to 1.5 degrees Celsius might not be enough to prevent permafrost thawing.
- **Permafrost melting:** Global warming is still the main driver, but changes in temperature, snow cover and vegetation, as well as soil moisture and environmental disturbances like e.
- Wildfire, human activities such as building infrastructure, farming, and the thermal properties of soil material (such as organic layer thickness) play an important role. 8.
- **WTO - trade agreement** Subject: International relations Section: International organisation
- WTO is near to reaching a trade deal, but with very limited commitments.
- 12th Ministerial Conference, WTO, Geneva.
- The World Trade Organisation is close to negotiating a trade agreement at its 12th Ministerial Conference, Geneva.
- This comes seven years after the 2015 pact in Nairobi.
- There are limited commitments in areas such as TRIPS waiver for Covid-19 vaccinations, procurement by World Food Programme, and a moratorium on electronic commerce.
- India's key demands of getting a permanent solution on tackling subsidy limits for public stock holding programmes and allowing exports from public stocks on government-to-government basis for humanitarian causes and food aid, have, however, been set aside for a decision at the next Ministerial Conference, which is likely in two years' time.
- **E-commerce:** Members of the Ministerial Conference are likely to extend the moratorium on customs duties for e-commerce.
- They will agree to not impose duties until that conference, which is scheduled for December 2023.
- A temporary waiver of certain TRIPS provisions is included in the package, but it is only for vaccines.
- This is expected to last for five years.
- India demanded that the waiver be extended to therapeutics and diagnostics, but this

will be resolved at a later time.

- **Fisheries subsidies:** There will be no restrictions on the availability of subsidies to fishers who fish within India's territory.
- This was a demand from India.
- Each member is free to provide subsidies for items like boats, nets and fishing equipment without restrictions.
- For illegal or unregulated fishing, however, the subsidy cuts will likely be extended for two years.
- India doesn't engage in unregulated or illegal fishing, nor does it fish in the high seas.
- **Export restrictions:** WFP members are expected to agree to exempt food procurement from export restrictions.
- However, a clause could be added that would allow for restrictions to be placed if there is a threat to domestic food security.

Topic 13. INDIA'S EMERGING TWIN DEFICIT PROBLEM

Important for Subject: Economy



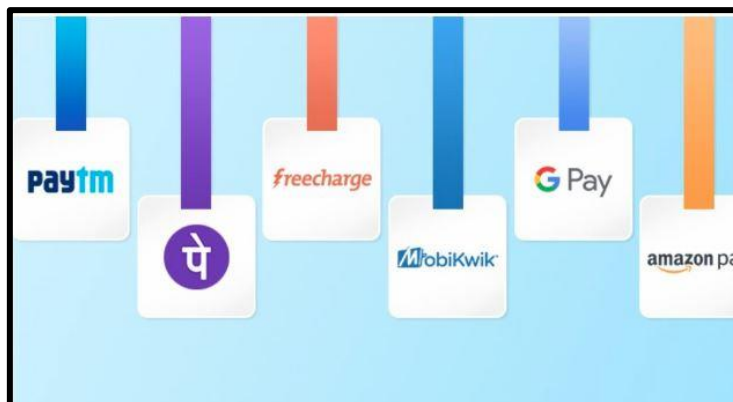
The possibility of widespread stagflation is real. A report from the Finance Ministry states that India is not at high risk of stagflation due to its prudent stabilization strategies. The report, however, highlights two areas of concern for India's economy, the current account deficit (or the fiscal deficit) and the current account deficit.

What is a twin deficit?

- It is the sum of a country's current and future account deficits, as well as its fiscal deficit.
- Fiscal deficit is the amount of money the government must borrow to cover the gap between its revenues and expenditures in any given year.
- Fiscal deficit is the sum of total expenditure and total revenue.
- To reduce revenue expenditure.
- This is the amount of money the government spends to meet its daily expenses.
- Rationalizing revenue expenditure is important for growth-supportive capex as well as to avoid fiscal slippages.
- Capital expenditure, also known as Capex, is money that is used to create productive assets like roads, buildings, ports, etc.
- **Current account deficit:** The current account refers to two sub-parts.
- Import and export of goods are the "trade accounts". The "invisibles" account is the import and export of goods.
- A country with a trade deficit is one that has more foreign currency or goods going out than coming in.
- A deficit is when more money is leaving the country than is coming in through trade in physical goods.
- However, the same country can also be earning a surplus from the invisibles accounts.
- This is because higher CAD means that more dollars or foreign currencies are being sought than the rupees.
- A weaker rupee will cause future imports to be more expensive.
- Foreign portfolio investors (FPI), who are influenced by higher interest rates in western economies, especially the US, continue to withdraw money from Indian markets to support the rupee.
- This will further hurt the rupee.
- Fiscal slippage is simply any deviation from what was expected.
- If the government has set a goal to keep the fiscal deficit below 3.3% percent GDP, then it is called fiscal slippage.
- However, if it exceeds that limit, it is called fiscal slippage.

Topic 14. RBI PUTS A STOP TO CREDIT LINES ON NON-BANK PREPAID INSTRUMENTS

Important for Subject: Economy



The Reserve Bank of India has disallowed non-bank prepaid wallets from loading credit lines.

What are prepaid payment instrument (PPIs), you ask?

- It's a payment instrument that allows you to buy goods and services.
- Credit lines are pre-determined borrowing limits that allow individuals or businesses to access credit at any given time.
- The customer can tap into it until the limit is exhausted.
- This is a flexible loan, not a loan with a fixed amount.
- Companies such as Paytm and Amazon Pay offer post-paid wallets that have small credit lines.

Why has the RBI made this announcement?

- The regulator is pushing to tighten controls in the interests of consumer safety, with credit products increasingly entering the market.
- Payment and Settlement Systems Act of 2007 (PSS Act).
- Section 2(1)(i) of the PSS Act 2007, defines a payment method as one that allows payment to be made between a payer and beneficiary. It does not include stock exchanges.
- The Act does not prohibit foreign entities operating payment systems in India.
- All domestic and foreign entities must obtain a license approval or authorization from

RBI before they can start payment system operations in India.

Topic 15. RBI MAY MANDATE DOMESTIC PROCESSING OF PAYMENT TRANSACTIONS

Important for Subject: Economy

Given the new geopolitical threats, there are options to ring fence domestic payment system.

What are the current guidelines for processing payment transactions?

- Current regulations state that, although payments can be processed outside India, data must be kept only in India.
- The entire end-to-end transaction details must be included in the data.
- If processing takes place abroad, the data must be removed from Indian systems and returned to India within one business day.
- Many multinational payment companies may not be able to comply with the RBI's requirement for domestic processing of transactions.
- If they are required to do so, they will have to make additional investments in India.
- The RBI wants to streamline the current system which is based on ISO 20022 standards, in order to meet domestic needs.
- It will also be streamlined with an internationally recognized standard for cross-border funds transfers.
- Bilateral or multilateral agreements will be made to explore the possibility of expanding RTGS for transactions in major trade currencies like dollar, pound and euro.
- These arrangements could provide traders with real-time funds in foreign currencies and help India become a global leader in payments.
- Payments Vision 2025 aims to make India a world-class payment hub.
- One of the most important forward-looking initiatives is the global outreach of UPI, RTGS, NEFT and Rupay cards with internationalization, where bilateral treaties with nations especially covering the dollar, pound and euro will hugely benefit Indian residents
- NEFT is a system for one-to-one fund transfers. People can transfer money electronically from any bank branch to any person who holds an account with another bank branch that participates in the payment system.

- Fund transfers via NEFT do not occur on a real-time basis.
- Instead, the fund transfer settles in 23 hourly batches.
- **RTGS (Real-Time Gross Settlement):** This payment system allows the beneficiary to have the money credited in their account in real time and on a net basis.
- The RTGS system can be used for large-value transactions that require immediate clearing Unified Payments Interface.
- It is a mobile-based, instant real-time payment system to transfer funds between bank accounts.
- It allows bank account holders of different banks to send or receive money using their Aadhaar unique ID number, mobile number, and virtual payment address.
- They don't need to enter any bank account details. Popular UPI apps include PhonePe and Google Pay.

Topic 16. DECKS CLEARED FOR 5G SPECTRUM AUCTIONS

Important for Subject: Economy

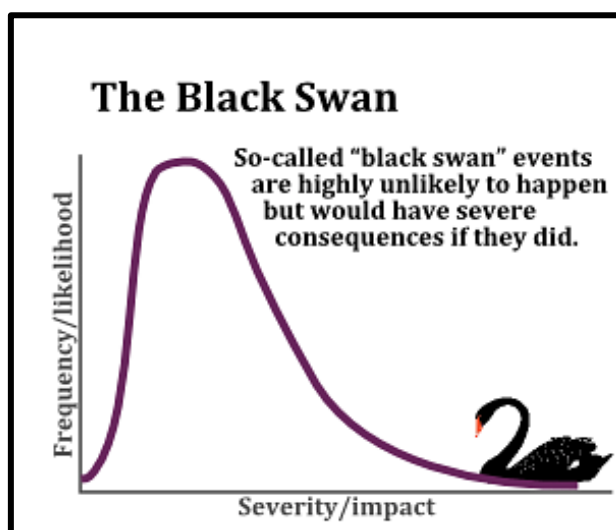
The auctions begin on July 26, and will include 72,097.85MHz spectrum with a 20-year validity.

- **There will be spectrum for sale in different frequency bands:** low (600 MHz), 700 MHz and 800 MHz; 900 MHz to 1,800 MHz; 2,100 MHz to 2,300 MHz), middle (3,300MHz), high (26GHz) TRAI plans to auction Telecom Regulatory Authority of India had previously set a 39% cut in the floor price, or reserve, for 5G spectrum sales for mobile services.
- The base price of the 5G spectrum was Rs 5.lakh crore.
- Accordingly, the value of the sale is about Rs 5.lakh crore.
- The reserve price for airwaves was to be reduced by 90 percent from the 2018 levels, as requested by Telco's.
- On April 11, TRAI recommended a base price at Rs 317 crore per unit for the premium 3.3-3.67 GHz bands and Rs 3,297 crore per MHz for 700 MHz spectrum.
- TSPs will use the spectrum in the middle and high bands to launch 5G-based services that can provide speeds and capacities up to 10 times greater than current 4G services.
- The successful bidders will not be required to pay upfront.

- This is the first time.
- The payments for spectrum can be made in 20 equal annual instalments that are paid in advance at each year's beginning.
- This will reduce cash flow requirements and lower costs of doing business.
- After 10 years, the bidders have the option to surrender the spectrum with no future liability on the balance installments.
- Recent telecom sector reforms such as zero spectrum usage fees (SUC) will benefit the spectrum auction. S
- UC currently ranges between 3 and 5% of adjusted gross revenue (AGR).
- Operators will appreciate the zero percent SUC, which depends on the year of acquisition. This will allow for a quicker roll-out of 5G.

Topic 17. 'BLACK SWAN' EVENT MAY TRIGGER AROUND RS 7.8-LAKH-CR OUTFLOW

Important for Subject: Economy



A recent RBI report states that a black Swan event could lead to huge capital outflows

What is the Black Swan?

- Nassim Nicholas Taleb is a Wall Street trader who developed the black swan theory in his book "The Black Swan: The Implication of the Highly Improbable".
- A black swan refers to an unpredicted event that is not expected and can have potentially devastating consequences.
- Black Swan events are rare and have severe consequences.

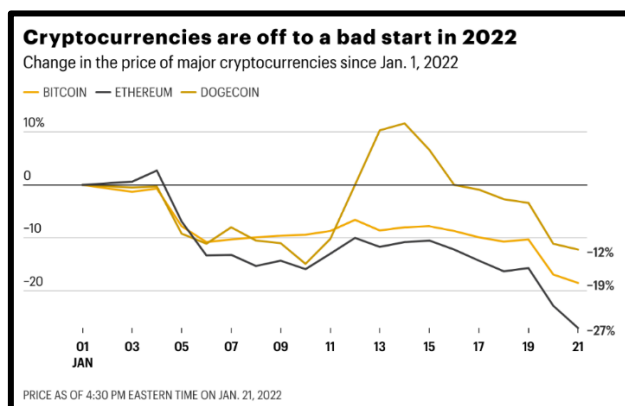
- They also tend to be a result of the insistence that they were evident in hindsight.
- It is so rare that it is impossible to predict when it might happen. It is explained as though it were predictable.
- There are no limits to the ways a Black Swan event could manifest itself.
- It could be anything, from a natural catastrophe to a war or a financial crash to the spread of a virus.

Is the Covid-19 Pandemic a black Swan event?

- Taleb doesn't agree with those who consider it one.
- He said that the outbreak was a "white Swan" and stated that it was predictable and that companies and governments should be prepared for it.
- Although it is impossible to predict the exact timing of any pandemic, the likelihood of one occurring and having a significant impact on the systems of the world was well documented.

Topic 18. CRASHING CRYPTO MARKET

Important for Subject: Economy



Monetary Policy Bitcoin, and other cryptocurrencies, have crashed since their all-time high in November last year.

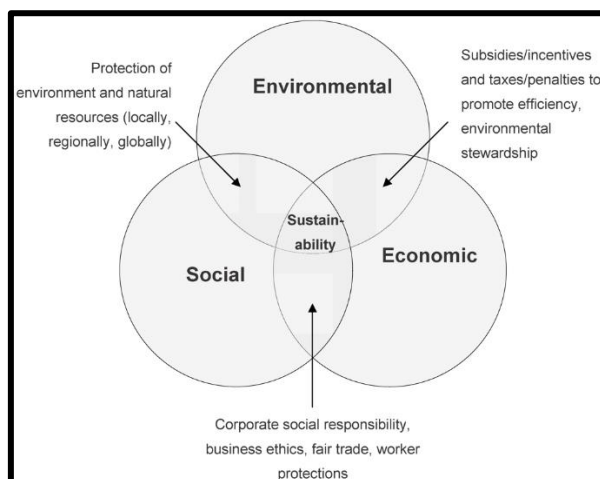
- Bitcoin lost over two-thirds its value since November 2017, when it reached a peak at \$69,000. It is currently trading around \$22,000.
- Ethereum, another popular cryptocurrency, has fallen almost 80% since its peak.
- The overall market capitalization of cryptocurrency has fallen below \$1 trillion for the first-time since January 2021.
- There are no signs that the crash will reverse, but it seems like there has been a

decline in investor enthusiasm, with trading volumes on Indian cryptocurrency exchanges falling by 90% from their peak.

- The reason Investors are fleeing cryptocurrency may be difficult to pinpoint.
- This is in line with the falling prices of stocks and assets as central banks like the U.S. Federal Reserve tighten monetary policy to combat price rise.
- Others think that the crash could also be the end of the bubble that drove the price of cryptocurrency to unprecedented heights.

Topic 19. SUSTAINABLE SWITCH: 'GIVE US ONE SET OF RULES,' PLEAD FIRMS

Important for Subject: Economy



Investors and companies are complaining about the innumerable sustainability rules. They are asking regulators for harmonisation of corporate governance (ESG), environmental, social, and corporate governance standards.

What's the problem?

- The Basel Committee on Banking Supervision, supported by the U.N., seeks to raise minimum standards for companies that pledge to reduce greenhouse gas emissions.
- Three draft sets of disclosure rules from the European Union and the US Securities and Exchange Commission are currently available for public consultation.
- A new International Sustainability Standards Board (ISSB) is supported by the G20.

What do investors and companies want?

- We Mean Business, a coalition of over 7,000 companies worldwide, wants regulators

unify their terminology and definitions.

- This will allow investors and companies to compare firms and lower reporting costs.
- **The Basel Committee on Banking Supervision:** It is the global standard-setting body for prudential regulation of banks.
- It also provides a forum for regular cooperation on matters related to banking supervision.
- Its 45 members include central banks and supervisors of bank supervisors from all 28 countries.

Topic 20. ANTI-DEFECTION LAW

Important for Subject: Polity



The Anti-Defection Law punishes MPs/MLAs who leave one party to make way for another.

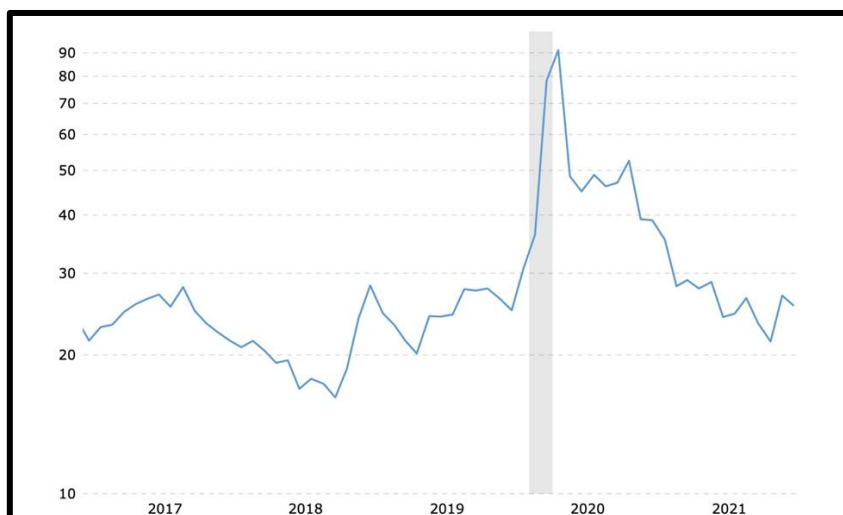
- It was added to the Constitution in 1985 as the Tenth Schedule.
- It was designed to stabilize governments and discourage legislators from switching parties.
- The Anti-Defection Act (also known as the Tenth Schedule) was added to the Constitution by the 52nd Amendment Act of 1985.
- It sets out the rules for the disqualification of elected representatives on the ground of defection to another party.
- It was created in response to multiple state governments being toppled by party hopping MLAs following the 1967 general elections.
- It allows MP/MLAs to merge (i.e. It allows a group of MP/MLAs to join (i.e., merge with) another party without imposing a penalty for defection.
- It does not penalise parties that encourage or accept defecting legislators.
- According to the 1985 Act, a "defection" by at least one-third of elected members of a party was considered a "merger".
- The 91st Constitutional Amendment Act of 2003 changed this. To make a merger valid, at least two-thirds must be in favour of it.

- Members who are disqualified by the law may run for election from any political party to a seat in the House.
- Questions concerning disqualification for reasons of defection can be referred to the Chairman of such House or to the Speaker, who is subject to "Judicial review".
- The law doesn't provide any time limit for the presiding officers to rule on a case of defection.
- **Grounds for Disqualification:** An elected member who has voluntarily given up membership in a political party.
- He votes in or abstains to vote in such House against any direction given by his party or anyone authorized to do so without prior permission.
- His party or authorized person must not condone his decision to abstain from voting within 15 days.
- Any independent elected member who joins any political parties. Nominated members join any political party within six months.
- **Issues Range of Provisions:** This provision did not apply to money bills or confidence motions (which are quasi confidence motions).
- It is applicable to all House votes, including those on any Bill or other issue.
- It also applies to the Rajya Sabha (or MLA), which have no influence on the government's stability.
- An MP (or MLA), is not allowed to vote on any issue.
- The MP is no longer a representative of the constituency or a national legislator, but they are now an agent for the party.
- **Eroding legislatures:** The MP is no longer a delegate of the constituency or a national legislator, but merely a number that can be counted by the party for any vote it supports or against.
- The drafting committee believed India needed a government that held it accountable, even if that meant losing stability.
- The accountability mechanism is weakened by the anti-defection bill.
- **Inducing instability:** The political system has found a way to overthrow governments. Resignations can be used to reduce the number of members.
- To ensure that no defector can be elected to any ministerial post, the Constitution was amended.
- The way around this is to resign and not vote against the party.
- Sometimes, the Speaker, usually from the ruling party has delayed a decision regarding the disqualification.

- Strange situations have resulted in members of the main Opposition party being appointed Ministers.
- This has been attempted to be rectified by the Supreme Court, which ruled that the Speaker must make the decision within three months.
- However, it is unclear what would happen if the Speaker did not.

Topic 21. GOLD REFINING GAINS GROUND AS PRICES SURGE

Important for Subject: Polity

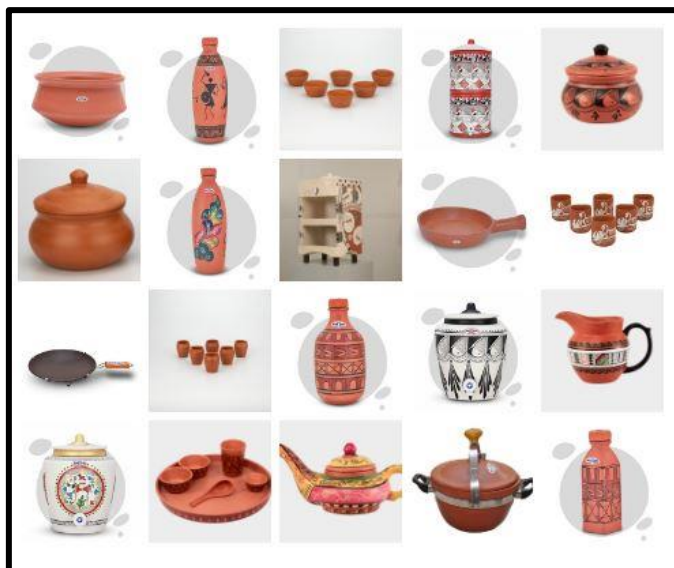


Parliament India is now the fourth-largest global gold recycler, with its organized refining capacity growing to 1,800 tonnes compared to 300 tonnes in 2013.

- An additional 300-500 tonnes is accounted for by the informal sector.
- As the government tightened pollution regulations, the scale of unorganized refining has declined.
- Many local melting shops have been closed.
- India is responsible for around eight percent of global scrap supplies.
- Indian organised refining has grown due to the import duty differential for dore (unrefined) gold over refined bullion.
- From 7 percent in 2013, to 22 percent in 2021, the share of gold dore has risen in total imports.
- In recent years, the growth of Indian refining has slowed due to the Goods and Services Tax (GST), which eliminated the advantage enjoyed EFZs (excise-free zone) and resulted in a reduction in new capacity within these zones.

Topic 22. FIRST GRASSROOTS INNOVATION-BASED STANDARDS FORMULATED BY BUREAU OF INDIAN STANDARDS (BIS)

Important for Subject: Polity



Shri Mansukh Bhai Prajapati from Wankaner in Gujarat has established the first standard for grassroots innovation for clay cooling cabinet Mitticool.

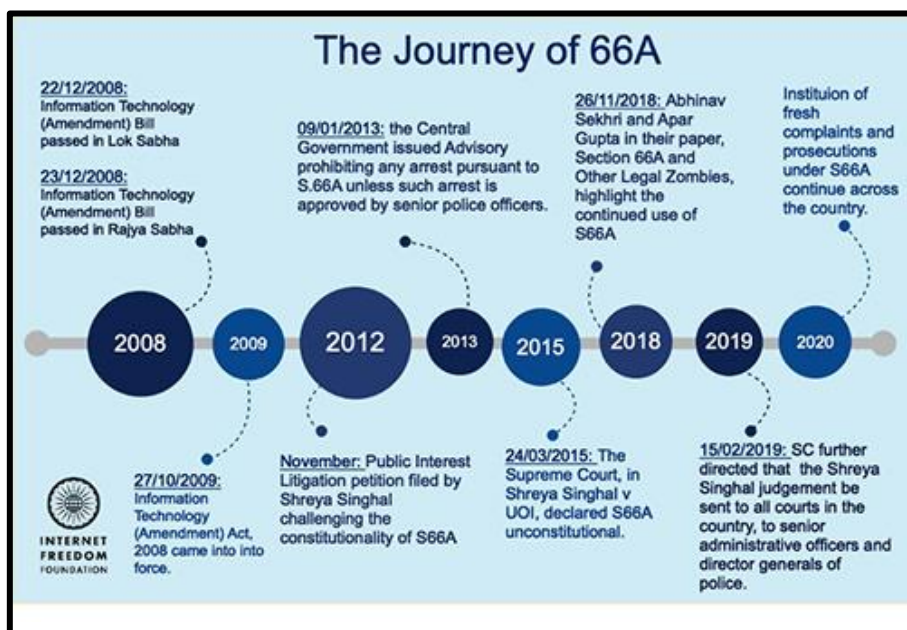
- **What is the IS-17693:** 2022 Nonelectric Cooling Cabinet Made from Clay or Mitticool Refrigerator
- It's the first standard to be rooted in grassroots innovation, Mitticool Refrigerator. Bureau of Indian Standards (BIS), created an Indian Standard for Mitticool Refrigerator.
- This standard describes the requirements for a cooling cabinet made from clay that operates on the principle evaporative cooling.
- It is intended to help grassroots innovation March hand-in-hand with formal sector innovations.
- **The Mitticool Refrigerator's Impact:** Mitticool Refrigerator played an important role in the revival of pottery culture, heritage, and tradition; connecting people back home in better, healthier ways.
- It encourages sustainable consumption, economically empowers the indigent community, and works towards green and cool Earth, economic development, and employment generation.
- **It contributes to rural women's upliftment and financial independence Bureau of**

Indian Standards: This is the National Standards Body of India, which is under the Department of Consumer Affairs, Ministry of Consumer Food & Public Distribution.

- It was established by the Bureau of Indian Standards Act, 2016, which took effect on 12 Oct 2017.
- Its primary function is to promote the standardization, marking, and quality certification activities for goods.

Topic 23. RESURRECTING A DEAD LAW

Important for Subject: Polity



India submitted a formal submission regarding criminalizing offensive messages as part of ongoing negotiations at the United Nations to create an international treaty against cybercrime.

- This submission uses language similar to that used in Section 66A, Information Technology Act 2000.
- What is Section 66A? The amendment to the IT Act 2000 was introduced by the UPA government, in 2008.
- It gave the government the power to arrest and jail individuals for allegedly "offensive or menacing" online postings.
- Section 66A allowed police to make arrests for what they could, according to their subjective discretion, interpret as "offensive or menacing" or to cause inconvenience.
- A conviction could land you up to three years in prison.

- It was unclear what constitutes "offensive" that was the problem.
- Given its broad connotation, the word could have many interpretations.

What was the Supreme Court's verdict on this provision?

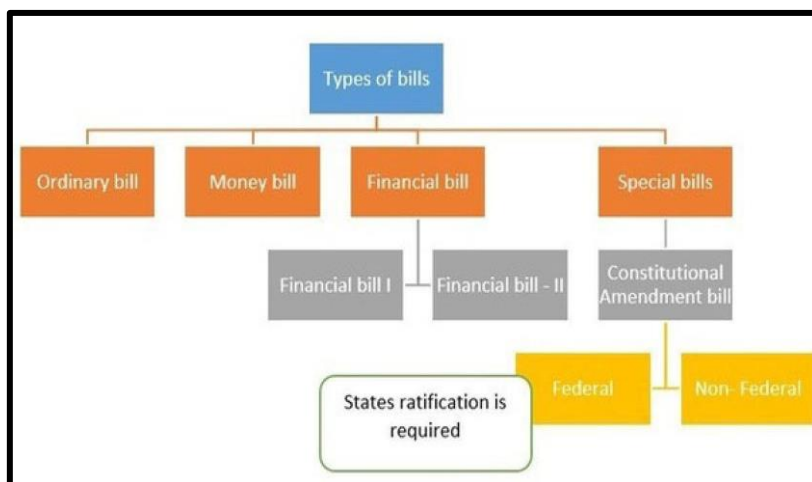
- Shreya Singal v. Union of India in 2015 ruled that Section 66A was unconstitutional because it violated Article 19(1) (a).
- Article 19(2) gives the state the power of imposing "reasonable restrictions" on exercising this right.

Is an international treaty binding?

- The Indian proposal would have an immediate effect on India's legal system if it is accepted.
- India is a dualist country.
- If international law is not specifically converted into domestic law by Parliament, it will be required to pass legislation to implement international law.
- This is in contrast to the theory of monism where international law is automatically incorporated into the national legal system without Parliament having to enact an enabling legislation.
- The executive will be able to arrest people for "offensive message" allegations.
- But this is more than a legal issue.
- Alarming, the Indian government had proposed to include a clause in an international treaty that was rejected by its own apex court because it violated fundamental rights.
- This is not a good sign for India's constitutionally protected fundamental freedoms.
- **Background:** The Convention on Cybercrime (also known as the Budapest Convention on Cybercrime/the Budapest Convention) is an international treaty that aims to combat Internet and computer crime (cybercrime).
- It harmonises national laws and improves investigative techniques.
- It also encourages cooperation between nations.

Topic 24. BILLS IN COMMITTEE STAGE

Important for Subject: Polity



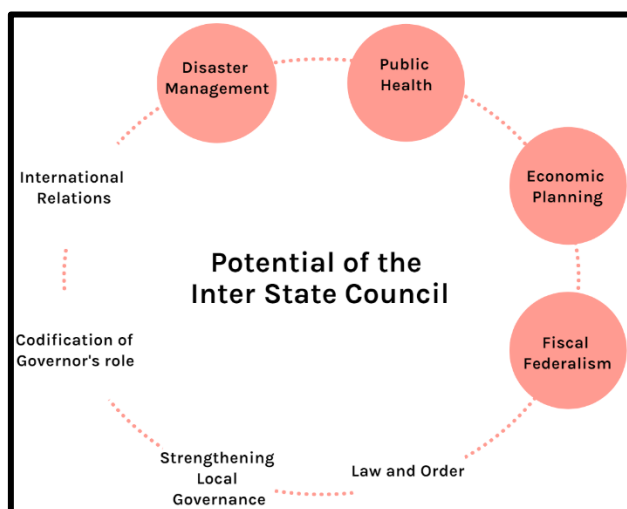
In a recent interview, Lok Sabha Speaker stated that it is the government who decides whether to send Bills on to Standing Committees.

- In recent years, Parliament functioned well during the pandemic.
- Despite a reduction in sitting time, the Lok Sabha achieved 167% productivity, which was a new record. The Opposition complains that not enough Bills have been sent to the parliamentary committees.
- **Procedure to pass a bill:** Each ordinary bill must go through five stages in Parliament before it can be placed on the Statute Book.
- **Committee Stage:** It is a common practice to refer the bill directly to a committee of the House.
- This committee reviews the bill clause by clause.
- The committee can amend the bill's provisions but not its principles.
- After the discussion and scrutiny, the committee reports back the bill to the House.
- **The Parliamentary Standing Committee:** There are two types of parliamentary committees.
- They are called Ad Hoc and Standing Committees.
- While the former are permanent and are constituted annually or periodically, they work on a continuous basis.
- The latter are temporary and cease to be in existence when the task is completed.
- The Constitution of India mentions these committees at various places but does not make any specific provisions about their composition, tenure, and functions.

- These matters are dealt with by the rules of both Houses.
- **A parliamentary committee is one that:** Is elected or appointed by the House, or nominated and approved by the Speaker / Chairman.
- Has a secretariat provided to it by the Lok Sabha / Rajya Sabha.
- There are 24 DRSCs - 16 from Lok Sabha and eight from Rajya Sabha. Each committee includes 21 members from Lok Sabha, and 10 Rajya Sabha.
- **The role:** Due to the sheer volume of legislative work and time constraints, it is impossible for MPs not to scrutinise and discuss all bills in the House.
- The Parliamentary committees can be either created for a particular bill (select Committee) or permanent (standing Committees that are reconstituted each year) and allow for scrutiny.
- They also have the potential to tap subject experts from other stakeholders in an environment in which MPs are not bound or restricted by party whips or positions.

Topic 25. INTER-STATE COUNCIL

Important for Subject: Polity



M K Stalin, Tamil Nadu Chief Minister, wrote to Prime Minister Narendra Modi asking for at least three meetings to be held each year of the Inter-State Council to "strengthen cooperation federalism".

What is Inter-State Council?

- It was created "to support Centre State and Inter-State coordination, and cooperation in India".
- The Constitution's Article 263 states that the President can create an Inter-State

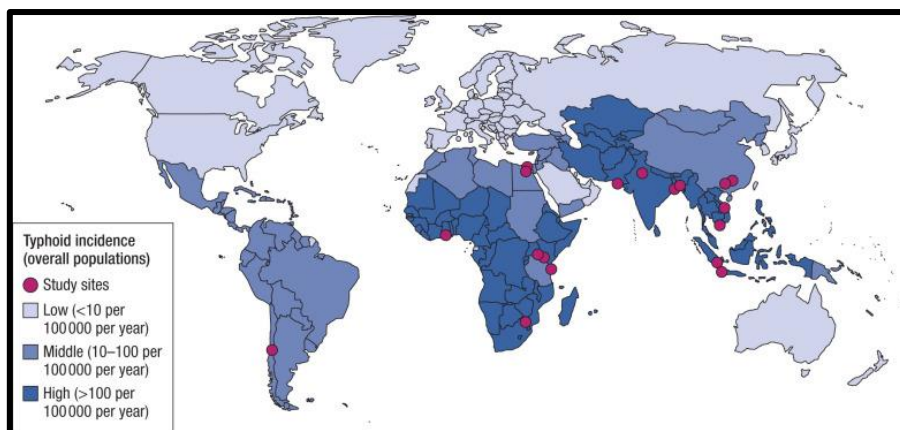
Council if there is a need.

- The Council was created to facilitate discussions between different governments.
- The Sarkaria Commission recommended that the Council be established as a permanent body in 1988. In 1990, the President issued an Order creating the Council.
- The Council's main functions include advising and inquiring into disputes between states, discussing topics in which two states or the Union share a common interest, making recommendations for better coordination of action and policy, and investigating and discussing such subjects.
- The Council's chairman is the Prime Minister.
- Other members of the Council include Chief Ministers from all states and UTs that have legislative assemblies and Administrators from other UTs.
- It also includes six Ministers of Cabinet rank from the Centre's Council of Ministers.
- These ministers are nominated and elected by the Prime Minister.
- A Standing Committee of the Council is also available.
- It was established in 1996 to facilitate continuous consultation and the processing of matters that are submitted for consideration by the Council.
- It is composed of (i) the Union Home Minister as Chairman (iii), Five Union Cabinet Ministers, (iii), Nine Chief Ministers.
- The Council is supported by an inter-state council secretariat.
- The Secretariat, which was established in 1991, is headed by a Secretary to the Government of India.
- It has been the secretariat for the Zonal Councils since 2011. Problems with Inter-State Council.
- The Council has not met regularly in six years.
- There has also been no meeting since July 2016.
- The body was established in 1990 and has only met 11 times.
- However, its procedures state that it should meet at most three times per year.
- Last month, the council was reconstituted.
- The body now has 10 Union ministers as permanent invitees.
- Amit Shah, the Home Minister, was elected Chairman of the Council's standing committee.
- The remaining members of the standing committee include Nirmala Sitharaman, the

Finance Minister, and Chief Ministers of Maharashtra and UP.

Topic 26. STUDY FLAGS EMERGENCE OF DRUG-RESISTANT TYPHOID STRAINS

Important for Subject: Science and Technology

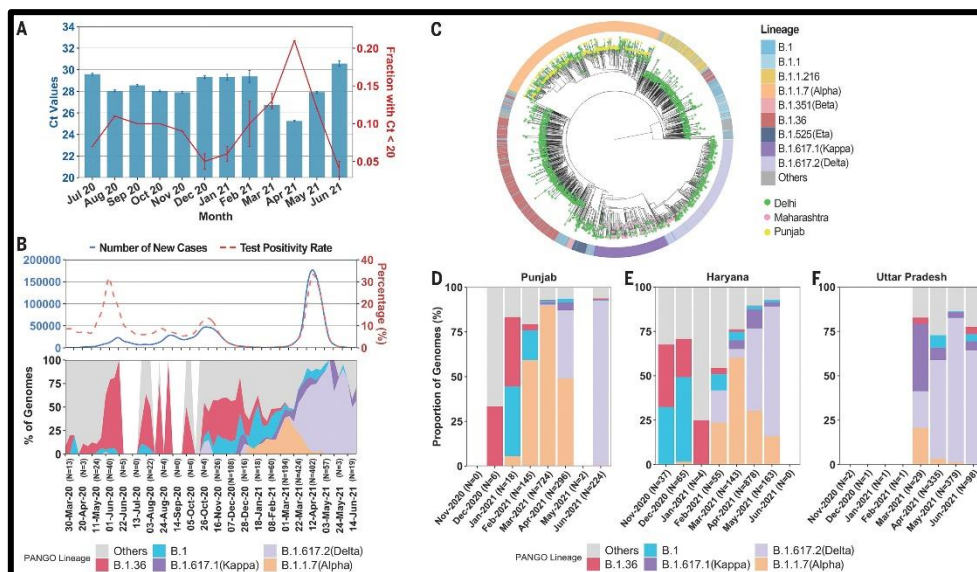


According to large-scale genome sequencing of *Salmonella Typhi* bacteria, resistance strains could threaten antibiotic effectiveness for Typhoid Fever. This was revealed in *The Lancet Microbe*.

- Typhoid fever this is a bacterial infection which can spread through the body and affect many organs.
- *Salmonella typhi* is the bacterium that causes it.
- It spreads through food and water contaminated with salmonella.
- **Multi-drug resistant (MDR), S Typhi:** A bacterium that is resistant to multiple antibiotics is called multidrug-resistant.
- Strains classified as MDR were those with genes that confer resistance to trimethoprim/sulfamethoxazole, ampicillin, and chloramphenicol.
- India may introduce new typhoid conjugate vaccinations to its national immunization program.
- **Background: Universal Immunization Programme (UIP / Mission Indradhanush):** This is one of the most cost-effective interventions in public health and is responsible for reducing vaccine preventable under-5 deaths.
- UIP provides free immunization against 12 vaccine-preventable diseases.

Topic 27. INSACOG TO LOOK AT GENOMIC SURVEILLANCE DATA FOR REASONS BEHIND BREAKTHROUGH INFECTIONS

Important for Subject: Science



The Indian SARS-CoV-2 Genomics Consortium, which is a Covid genome sequencing facility, will review data in order to investigate reasons for "breakthrough" infections and also look into the possibility of new virus sub-lineages or variants.

- People who had an Omicron infection in January may still be susceptible to the other subvariants of Omicron now emerging around the world, including BA.4 or BA.5, which led to a fifth wave in South Africa.
- This is now spreading to Europe.
- **Breakthrough infection:** Infected people who contract Covid-19 even though they have had a vaccine shot are called "breakthrough cases".
- This means that the vaccine has not protected them sufficiently.
- Officials in India said that there are now BA.
- 4- and BA.5 strains.
- They also have the BA.2 variant which has slightly more transmissibility than the other Omicron sub lineages.
- SARS-CoV-2 virus evolves continuously due to changes in the genetic code, either through genetic mutations or viral replication.

What is a "lineage"?

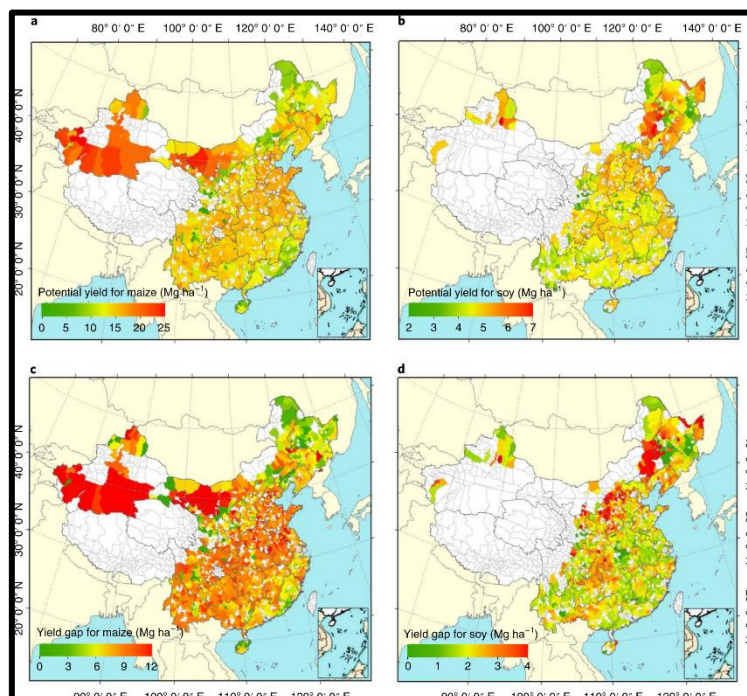
- A lineage is a group of genetically related virus variants that are derived from the same ancestor.

What is a variant?

- Variant is a variant that has one or more mutations that distinguish it from other SARSCoV-2 variants.
- There are three classes of SARSCoV-2 variants.
- It houses all the labs that are responsible for monitoring coronavirus variants.
- This network of 28 national labs -- jointly established by the Health Ministry and the Department of Biotechnology, the Council of Scientific and Industrial Research and the Indian Council of Medical Research -- has been analysing samples from across the country since the emergence of the alpha variant (B.1.1.7) (UK) in 2007.
- INSACOG, a Pan-India network of multi-laboratory and multi-agency laboratories, monitors genomic variations in SARS-CoV-2 through a sentinel sequencing effort.

Topic 28. GENETICALLY MODIFIED MAIZE AND SOY

Important for Subject: Science and technology



China will adopt genetically modified soy and maize. Genetically modified soy and maize
The Chinese National Crop Variety Approval Committee approved the pathway for cultivating genetically modified (GM), crops in the country.

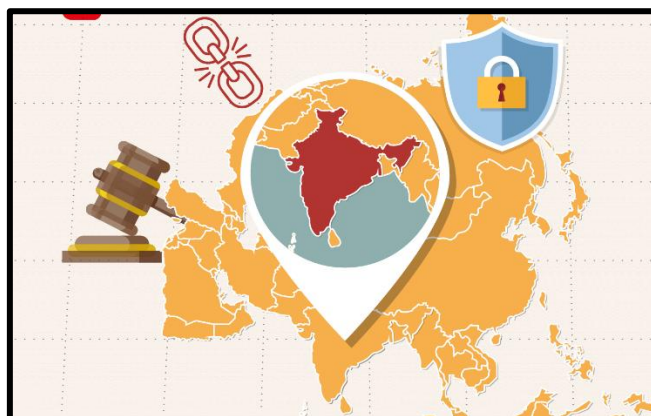
- China will approve more genetically modified maize varieties.
- China currently imports soybean and genetically modified maize, but bans domestic cultivation.
- A change in regulations could lead to an increase in yields.
- This aligns with China's goal to become self-sufficient in essential grain and oil seeds over the next few years.
- **Impact on other countries:**
- This will have an effect on the long-term development of the South African agricultural sector.
- China's dependence on imports could decrease if maize and soybean yields rise in the future.
- These lessons can be applied to Africa, which has largely resisted genetically modified crop cultivation.
- **South Africa is an exception:**
- The African continent is currently facing difficulties in meeting its annual food requirements.
- Technology should be explored to increase production.
- **Genetically modified crops (GM):** This is a plant with a unique combination of genetic material that was obtained by modern biotechnology.
- A GM crop may contain a gene that has been artificially inserted, instead of being inherited by pollination.
- Crossbreeding species from the same genus can give offspring the desired traits.
- Cross breeding can be difficult and take time.
- Often, traits of interest are not found in related species. India's only GM crop is Bt cotton.
- It contains alien genes from the soil bacteria *Bacillus Thuringiensis* (Bt), which allow the crop to produce a protein that is toxic to the pink bollworm, a pest.
- The Herbicide Tolerant Bt cotton (HtBt), on the other hand, is derived by the addition of a gene from another soil bacteria that allows the plant resistance to the common herbicide, glyphosate.
- Btbrinjal has a gene that allows it to resist attack by fruit and shoot borers.
- Genetic modification in DMH-11 mustard allows cross-pollination with a crop that

self-pollinates in nature. Genetically modified crops such as maize have many advantages.

- They produce higher yields, lower insecticide use and encourage more sustainable tillage practices.
- Consumers and the poultry and livestock sectors would benefit from a decrease in global soybean and maize prices.
- This is important, as the world has experienced an increase in food prices for the past two years.

Topic 29. VPN FIRMS WITHDRAWING SERVERS FROM INDIA

Important for Subject: Science and Technology



Surf shark and Express VPN, the top VPN companies, have announced that they will be moving their servers out of India. However, consumers might not notice any immediate changes.

- The three companies made it clear that Indian customers can still connect to their servers abroad to use their services. Customers do not experience any immediate effect.
- VPN is a virtual private network that you create when surfing the Internet.
- When you turn on your VPN connection, it creates a secure channel that acts as an intermediary between your device, and the destination website.
- The VPN server then sends your data to the destination.
- Your IP address is an online equivalent to a postal code.
- This means that websites cannot track you accurately.
- This private network increases online security and privacy.
- Directives from CERT-in CERT-in issued directives asking data centres, cloud

service providers and virtual private network service (VPN) providers to register and keep some metadata.

- As part of the CERT In directives, VPN companies were specifically instructed to store valid customer names, their physical addresses and e-mail IDs as well as phone numbers, along with the reason that a customer uses the VPN.

Topic 30. MEGALITH

Important for Subject: History



The Megalithic site, which dates back to 3,500 years old, is located in Narayan pet district of Telangana. The five-acre site, which dates back to 1500 BC, is dotted with approximately 80 tall stones (or niluvu Raallu, as the locals refer to them), and also includes 'alignment stone'.

- Menhir, a prehistoric name for an upright stone that was erected in prehistoric times, is sometimes called a "standing rock".
- There are two schools of thought about why menhirs were built.
- Some believe these stones are there to measure the time and capture the sun's movement. A
- Another site is located about 500m away and contains mounds of stones and boulders.
- The site is believed to be a burial ground.
- It also contains a 3-foot rectangular stone with a 'skychart' chiselled onto it.
- They might have built it to remember people or special occasions.

Topic 31. TRIBUTE PAID TO MAHARAJA GULAB SINGH ON HIS 200TH CORONATION DAY

Important for Subject: History



Gulab Singh Jamwal (1792-1857) was the founder and first Maharaja in the topa Rajput princely State of Jammu & Kashmir.

- **It was the second**-largest princely state under British Raj.
- Gulab Singh was a quiet man during the war which allowed the British to win.
- He even served as prime minister of Sikh Empire for the last 38 days.
- The Treaty of Amritsar (1846), formalized the British sale to Gulab Singh of 7,500,000 Nanak shahi Rupees of all lands in Kashmir which had been ceded by the Sikhs under the Treaty of Lahore.
- Prior to this, Raja Dhian Singh, who was the longest-serving prime minister of Sikh Empire between 1818 and 1843.
- Diwan Kirpa, the "Maharajah's private secretary" and the son Dewan Jwala Sahai (the Maharajah's Prime Minister), of the Diwans, Eminabad, wrote the first Gulabnama in Persian in the 19th Century.
- Maharaja Gulab Sing was not only a soldier and an able administrator, but also a secular man as there was total freedom of worship under his rule.

Topic 32. ANCIENT MONUMENTS ACT TO BE MADE FLEXIBLE

Important for Subject: History

The government is currently working to amend the Ancient Monuments and Archaeological Sites and Remains Act (1958). In 1958, the AMASR Act was amended.

- According to this amendment, a 100-meter radius around an ASI-protected memorial is "prohibited zone", which means that no construction is permitted there.
- The next 300-metre area is "regulated area", where permits are required before any structural changes can be made.
- Following controversies surrounding different monuments' development projects, the ministry wants to rationalize these prohibited/regulated zones.
- The amendment will give the ASI more power to remove obstructions from the regulated areas around monuments and make local authorities accountable.
- It is planned to also review the ASI-protected monuments list and remove some.
- The ASI will then transfer the responsibility for maintenance to the appropriate state archaeology department.
- A review will allow the ASI to acquire certain monuments of "national importance".
- As India hosts the G20 countries next year, some meetings will take place at ASI sites.
- Therefore, it is planned to also look at the areas surrounding these sites and build the infrastructure needed for high-profile meetings.

Topic 33. NMA TO WORK TOWARDS STRENGTHENING RUKMINI KRISHNA YATRA BETWEEN ARUNACHAL PRADESH AND GUJARAT

Important for Subject: History



National Monumental Authority (NMa), a plan to strengthen Arunachal's old cultural

connection with Gujarat through Rukmini & Bhagwan Krishna story Concept.

- NMA visited Bhishmak Nagar ruins Rukmini palace to tell the beautiful tale of Rukmini's marriage.
- This is still sung by Idu Mishmi tribe songs in Porbandar.

Why is it important?

- Arunachal Pradesh requires special attention to preserve its cultural memory.
- The oral history passed from one generation of Igus (traditional healers/priests) is rapidly disappearing.
- **National Monumental Authority:** National Monuments Authority, under the Ministry of Culture.
- The Constitution of India was established according to the provisions of The Ancient Monuments and Archaeological Sites and Remains AMASR Act, 2010, which was enacted March 2010.
- NMA's important function is to grant permissions to those who are interested in construction activities within the restricted and prohibited areas.
- Ek Bharat Shreshtha Bharat This was announced on 31 October 2015, to commemorate the 140th birthday of Sardar Vallabhbhai Patel.
- Ek Bharat Shreshtha Bharat's Objectives To celebrate India's Unity in Diversity and to strengthen and sustain the traditional emotional bonds among the citizens of our country; To encourage national integration through deep and structured engagements between Indian States and Union Territories over a year; To display the rich heritage, culture, customs, and traditions of each State to help people understand and appreciate India's diversity and foster a sense common identity.

Topic 34. INDIAN INTERESTS AT THE WTO MINISTERIAL CONFERENCE

Important for Subject: International Relations



The WTO's 12th Ministerial Conference (MC12) concluded on June 17. It secured agreements to relax patent regulations in order to achieve global vaccine equity, ensuring food security and providing subsidies for the fisheries industry. There were also continuing moratoriums applicable to e-commerce. They are collectively known as the "Geneva Package" by Ngozi Okonjo Iweala, Director General of WTO.

What is the WTO Ministerial Conference?

- The MC is the highest ranking WTO organisational chart. The MC meets every two years and is able to make decisions regarding all matters related to multilateral trade agreements.
- WTO is not like other organizations, such as the International Monetary Fund and World Bank.
- It does not have a board or organisational chief.
- All decisions made at the WTO are taken collectively by all member countries through various councils and committees.
- The conference was held in Geneva, Switzerland.

What were the debates at the MC about agriculture?

- India is particularly interested in the agreements.
- India, which is a major contributor to the World Food Programme (WFP), had previously stated that it has never imposed export restrictions on procurement under the program.
- India argued that a blanket exemption could hinder its efforts to ensure food security at home.
- It would need to maintain its WFP commitments, regardless of domestic needs.
- Negotiators reached an agreement that no member country would impose export restrictions or restrictions on food items purchased for humanitarian purposes by the WFP.
- However, the decision will not stop member countries from adopting measures to ensure domestic food security.
- The negotiators couldn't reach an agreement on issues like the permissible threshold in public stockholding for domestic food security and domestic support to agriculture,

cotton and market access.

- The agreements were based on the principle of providing food for those in greatest need, including in humanitarian emergencies.
- It encouraged members with surplus food to sell them on international markets, in accordance with WTO regulations.
- It also established a work program to develop measures to aid LDCs (Least Developed Countries) and NFIDCs, (Not Food Importing Developing Countries), to improve their food security and boost agricultural production.

What about agreements related to fisheries?

- India was able to reach an agreement to eliminate subsidies for illegal, unreported, and unregulated fishing.
- Only those stocks that are considered essential for their biological sustainability can receive subsidies.
- Overfishing is the practice of exploitation fishes at a rate faster than they can replenish themselves.
- Current levels are at 34% according to the UN Food and Agriculture Organization.
- A decline in fish stocks could lead to poverty and threaten communities who rely on these aquatic creatures for their livelihoods and food security.
- The agreements also stipulate that no restrictions would be placed on the amount of subsidies granted to or maintained by countries in the least developed or developing for fishing within their economic zones (EEZ).
- Current moratoriums on electronic transmitting extended Members agreed to extend the current moratorium to not impose customs duties on electronic transmission (ET), which was scheduled to occur in December 2023.
- The U.K., Australia, China, Japan, and the U.S. had all sought to extend the moratorium.
- India and South Africa were opposed. Broadly speaking, ETs are online deliveries that include music, eBooks, movies, software, and video games.
- Because they can be ordered online, but not delivered in person, they differ from other cross-border electronic commerce.
- The moratorium was proposed by proponents to ensure certainty and predictability,

especially in the context of the pandemic.

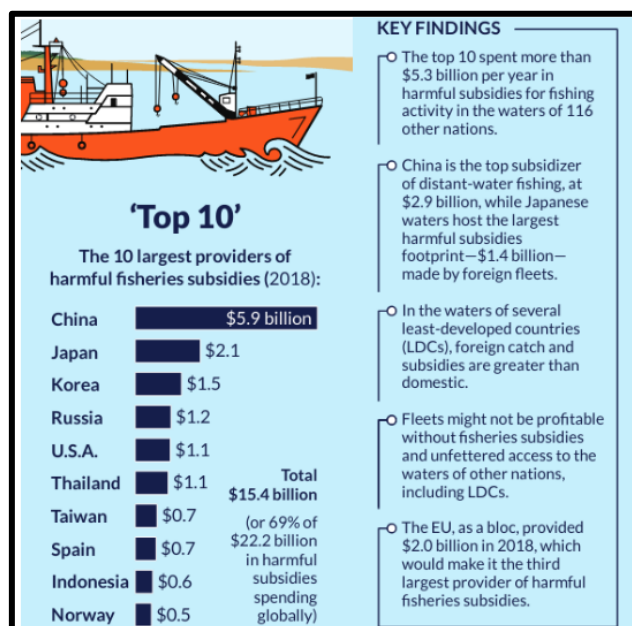
- South Africa and India, however, claimed that the moratorium would result in a loss worldwide of \$10 billion annually.
- This was 95% of the cost borne by developing nations.

What was the discussion on patent relaxations?

- The member countries reached an agreement on authorizing the use of the subject of a patent by a member nation to produce COVID-19 vaccines, without the consent or the rights holder.
- It also asks member nations to waive export restrictions and supply restrictions set out by WTO regulations for supplying domestic markets and member states with any number vaccines.
- Many LDCs have had to struggle to fight the nearly three-year-old pandemic.
- This is due to factors like a stressed balance, differing levels of development, financial capability, and different degrees of import dependence.

Topic 35. WTO TALKS ON FISHERIES SUBSIDIES

Important for Subject: International Relations



As a result, the WTO Ministerial Conference (MC12), in Geneva, has been extended one day - to June 16.

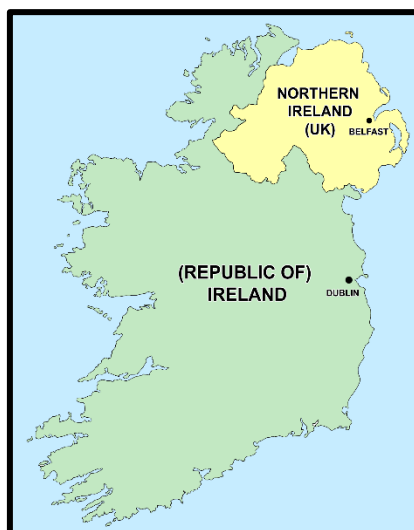
- Despite attempts to reach a consensus on key issues such as food security, TRIPS

waivers for Covid vaccines, medical tools, and a ban of harmful fisheries subsidy, it remained elusive.

- A dispute over fisheries subsidies has extended the 12th Ministerial Conference (MC12), of the World Trade Organization (WTO), in Geneva.
- Experts claim that the June 10 revision draft, which was to be negotiated, is unfair and will have an adverse effect on Indian and other developing country fishers.
- The developing countries want discipline in fisheries subsidies and protection of fisher folk through the use of Special and Differential Treatment (S&DT).
- The revised text is not balanced and does not favour the interests of fishers.
- Negotiations are progressing in accordance with the Sustainable Development Goal 14.6 mandate for 2017, which includes the three pillars illegal, unreported or unregulated (IUU), over fished stock and overcapacity and excessive fishing.
- The revised draft of the S&DT allows fishing-related activities in Least Developing Countries (LDCs), as well as low income, resource poor, and livelihood fishing, to be carried out up to 12 nautical mile for two years.
- However, developing countries requested exemptions of up to 200 nautical mile.
- **India's position:** India opposed the draft text to curb fisheries subsidies.
- It argued that rich countries could retain large amounts of their subsidies despite the fact they allowed their industrial fleets to exploit and plunder the ocean's wealth for the past several decades.
- India demanded a 25-year transition period for its fishers.
- This was because it believes that the policy space is essential for long-term sustainable growth and prosperity for low-income fishers.
- India, along with other G33 member countries, insists that permanent solutions for public stock holding are the most important priority in agriculture.
- However, developed nations aren't keen to deliver it at MC12.

Topic 36. THE CONTROVERSY AROUND THE NORTHERN IRELAND PROTOCOL

Important for Subject: International relations



The UK government announced that it will introduce a law to override the Brexit agreement on Northern Ireland.

What is the Northern Ireland Protocol?

- Since its inception at the beginning of 2021, the Northern Ireland Protocol - which was signed with the European Union (EU), in 2019, has caused tension.
- After the UK voted to leave the European Union in 2016, special trading arrangements were required for Northern Ireland.
- This is due to its only land border with the Republic of Ireland, which is an EU country.
- It was simple to move goods across the border before Brexit because both sides had the same EU trading rules.
- There were no paperwork or checks.
- A new system was required after Brexit.
- The EU has strict food rules.
- It requires border checks for certain goods, such as eggs and milk that arrive from non-EU nations.
- After Brexit, the UK and EU agreed that the protection of the 1998 Northern Ireland peace agreement - the Good Friday Agreement - was an absolute priority.
- Both sides signed the Northern Ireland Protocol, as part of the Brexit withdrawal deal.

- It is now part international law.
- Because it was signed on Good Friday (10 April 1998), the Belfast Agreement is also known by the Good Friday Agreement.
- It was a deal between the British, Irish and majority of the political parties in Northern Ireland on how Northern Ireland should be managed.
- It was intended to establish a new devolved government in Northern Ireland, where unionists and nationalists would share the power.

How does this protocol work?

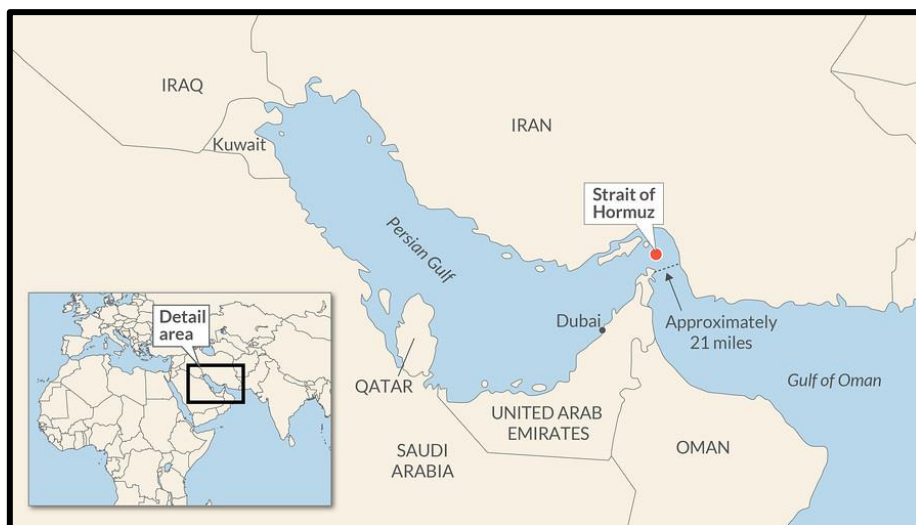
- The protocol stipulates that goods will not be checked at the Irish border.
- Instead, inspections and document checks will take place between Northern Ireland (England), Scotland, and Wales.
- These inspections take place at Northern Ireland's ports.
- It was also agreed that Northern Ireland would continue to follow EU product standards.

What is the UK's plan to do?

- The Brexit deal requires that certain goods be checked upon entry to Northern Ireland from Great Britain.
- **The current process is:** After being checked, the goods can be moved to the Republic of Ireland.
- **The UK's new plan:** The Northern Ireland Protocol Bill.
- This would allow the U.K. the ability to override the provisions of the Brexit agreement that relate to trading arrangements in Northern Ireland.
- The Green Lane allows goods destined for Northern Ireland to go unchecked. However, goods destined for Ireland or the EU are placed in the Red Lane, and are subject to be a thorough inspections are conducted.
- The Bill has been strongly opposed by MPs from Mr. Johnson's party, Irish legislators and EU officials.
- They claim that it would violate international law, harm the U.K. as a trading partner and create a trade war.

Topic 37. AMERICAN WARSHIP FIRED A WARNING FLARE AT AN IRGC SPEEDBOAT IN STRAIT OF HORMUZ

Important for Subject: Geography



Mapping Strait of Hormuz. The Strait of Hormuz runs between the Persian Gulf (Gulf of Oman) and the Gulf of Oman.

- It is the only sea route from the Persian Gulf to open ocean, and one of the most strategic choke points in the world.
- The Iran lies on the coast to the north, while the United Arab Emirates and Musandam (an exclave of Oman) lie to the south.
- It measures approximately 90 nautical miles (167km) in length, and its width can vary from 52 nautical miles (96.6 km) to 21 nautical mile (39 km).
- The Strait is a strategic location that allows for international trade and commerce.
- It holds about a third of the world's total liquefied natural gases, as well as almost 25% of global oil consumption.

Topic 38. STERLITE PLANT COPPER OF THOOTHUKUDI IN TAMIL NADU

Important for Subject: Geography



After the May 2018 police shooting that resulted in 13 deaths, Sterlite Copper of Thoothukudi (Tamil Nadu) has become a moral matter.

- **Complaints about the plant:**
- The company was operating for nearly 20 years and had been accused of violating many pollution regulations.
- There were also at least two allegations of excessive emission. Residents in Sterlite claim that there was a gas release at 3:00 a.m.
- Every morning when the plant was operational.
- They would feel short of breath and have a foul odor.
- Groundwater was so contaminated that cattle refused to drink it.
- The air is now cleaner.
- Businessmen complain that Sterlite didn't provide enough contracts and did not hire enough local workers.
- They were treated with disrespect by a high-handed management.
- Although Sterlite built community centres, water tanks, and toilets, it did not invest much in the education or health of the local residents.
- Sterlite's product Copper is a strategic metal.
- Energy, electronics and electrical equipment are all important applications.
- More nations are shifting to solar and wind.
- This will lead to new transmission lines and projects.
- Electric vehicles are on the rise.

- Copper demand is expected to increase globally and in India.
- Supply bottlenecks can be caused by imports.
- As a result, end consumers like electrical equipment manufacturers may pay a premium.
- Copper production is a strategic balance that ensures price stability and strategic balance.
- India became an importer after the Sterlite plant was closed.
- India would benefit from a copper smelter.
- Hindalco is the only major smelter located in India.
- **Copper:** Copper is a soft and malleable metal that has high electrical and thermal conductivity.
- Copper is one of few metals found in nature in a directly usable metallic form (native) and has wide industrial applications.
- These include defense, space program, railways, power cables mint, telecommunication cables and many other industries.
- India cannot produce copper ore on its own.
- India imports copper concentrates to supplement its domestic production.
- Domestic production, scrap recycling and imports all meet the domestic demand for copper and its alloys.
- Hindustan Copper Limited, a Public Sector Undertaking is the only integrated company that is involved with mining and beneficiation.
- It also smelts, refines, and casts refined copper.
- Vedanta Limited and Hindalco Industries Ltd are the largest copper producers in Private Sector, which mainly rely upon imported copper concentrates.
- These companies also own copper mines in foreign countries.
- According to NMI database, based on UNFC system, the total copper ore resources/reserves as of 1.4.2015 were estimated at 1.51 trillion tonnes.
- These include 207.77 million tonnes (13.74%), and the remaining 1.30 billion tonnes (86.25%) which fall under the 'reserves' category.
- Grade wise, there are no copper reserves that have a grade of 1.85% or higher.
- However, the reserves of 203.83 million tonnes are below 1% and below 1.85% Cu grades.

- 8.28 million tonnes (0.55%), comprise ore containing 1.85% Cu, while 657.92million tonnes (43.53%), resources are below 1% and below 1.85% Cu grades.
- 12.16 million tonnes is the total metal content, of which 2.73 million tonnes are reserves.
- The state of Rajasthan has the largest copper ore reserves at a total of 813 million tonnes.
- Jharkhand is next with 295 million tonnes (19.54%), and Madhya Pradesh (283 million tonnes (18.75%).
- Copper resources/reserves in Andhra Pradesh and Gujarat, Haryana and Maharashtra, Meghalaya and Nagaland, Sikkim and Tamil Nadu, Telangana and Uttarakhand accounted for 7.9% of total India resources.
- Emissions come from roasters, smelting ovens, and converters.
- Material handling operations can produce fugitive emissions.
- Particulate matter (SOx) can be produced by roasters, smelting ovens, and converters.
- Particulate matter is composed primarily of copper and iron oxides.
- However, other oxides such as arsenic and antimony, lead, mercury and zinc may also be present along with metallic sulfates and sulphuric acid mes.
- Particulate emissions also come from multiple hearth roasters, reverberatory furnaces, and other fuel combustion products.
- **A chance:** The way forward Although the economic and national interests case for a copper-smelter are strong, Vedanta and Thoothukudi need to bridge the trust gap between them if the smelter must be restarted.
- A framework could be created to ensure compliance with norms and harmony between government, company and people.
- Thoothukudi's Sterlite project offers a chance to advance in their national and local economic interests.
- This is an opportunity to have a corporate group act responsibly and bring people along as it runs its business.

PIONEER ACADEMY

PUNE



PUNE Address :
204/S, 304/S, 2nd & 3rd Flr., Pinnacle Prestige (Near Durvankur Hotel), Above Cosmos Bank, Tilak Road, Sadashiv Peth, Pune - 411 030
Mob : 91453 39324 / 25

THANE



THANE Address :
201/202/203/204, 2nd Flr., Lalzer Arcade, Raghoba Shankar Road, Chendani, Thane (W) - 400 601
Mob : 75060 10635

DADAR



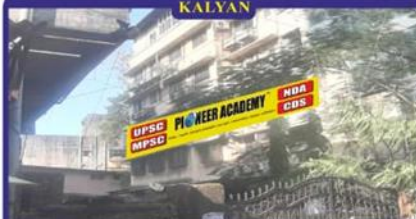
DADAR Address :
306/7/8, 3rd Flr., Blue Pearl Society, Senapati Bapat Road, Plot No. 14, Near Janata Cloth Market, Near Dadar Railway Station, Dadar (W), Mumbai - 400 028
Mob : 93241 69627 / 91375 41508

ANDHERI



ANDHERI Address :
3rd Flr., Syndicate Chamber, Above Vaibhav Restaurant, Next to Better Home Hotel, Opp. Andheri (E) - 400 601
Mob : 84518 55673 / 70302 92316

KALYAN



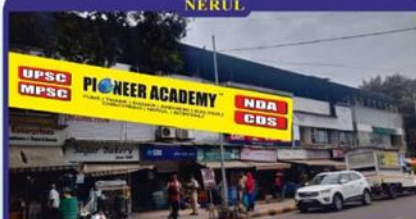
KALYAN Address:
2nd Flr., 2, Suyash Plaza, Opp. Railway Station, Near Deepak Hotel, Kalyan (W) - 421 301
Mob.: 81691 40960

PIMPRI-CHINCHWAD



PIMPRI CHINCHWAD Address:
3rd Flr., Kunal Plaza, Mumbai Pune Road, Chinchwad Station, Chinchwad, Pune - 411019
Mob.: 9975459324 / 9503459325

NERUL



NERUL ACADEMY
16, 20 & 21, 1st Flr., Om Surya complex, Opp. Nerul Railway station, Beside Abhodaya Bank, Sector 15, Nerul (E), Navi Mumbai - 400707
Mob.: 93212 87241 / 93212 89027

BORIVALI



BORIVALI ACADEMY
313/314, 3rd Flr., V Star Plaza, Chandavarkar Rd., Near Saraswat Bank, Sundar Nagar, Borivali (W), Mumbai - 400092
Mob.: 93212 49713 / 96533 04874

Email : pioneeracademypace@gmail.com
Website : www.pioneeracademypace.com / .in
Contact : + 91 75060 10635

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