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Topic 1. WHAT THE SUCCESS OF GAGANYAAN COULD MEAN FOR INDIAN SCIENCE***Important for the subject: Science and technology***

India earlier this month revealed the names of the four Air Force officers selected for the Gaganyaan Mission, the country's maiden attempt at sending humans into Space.

- Scheduled for launch next year, it would have the first Indian astronauts in 40 years and the first ones to go on an Indian spacecraft.
- Just three countries – the United States, Russia and China – have executed human spaceflight missions till now.

Why India wants to have a stake in Space technologies

- Becoming an active participant in this new-age Space exploration would ensure access to rights, resources and new technologies.
- India could then build expertise and opportunities for these technologies' early adoption.
- Space programmes in the past have also resulted in hundreds of important spin-off technologies, including some breakthrough interventions in the health and medicine sector like Magnetic Resonance Imaging (MRI), heart implants, and advanced water filtration.

The need to avoid technology denial

- India has suffered in the past because of the technology denial policies of other countries, with access to technology often used as a blackmail measure.
- For example, in the 1990s, the US denied India cryogenic technology that is critical for powering rockets.
- It slowed down India's Space programme by almost two decades.
- After India conducted its nuclear tests in 1998, even basic parts, like certain kinds of transistors and semiconductors, were denied due to economic sanctions.
- The covid-19 pandemic came as another shock when it was realized that even basic items like Personal Protective Equipment (PPE) kits and medicines needed to be procured from abroad.

New science and technology projects announced by India:

- The government has announced separate missions on green hydrogen, quantum computing, and the latest one last week on artificial intelligence.
- India has joined some of the biggest international scientific projects like the Laser Interferometer Gravitational-Wave Observatory (LIGO) and the Square Kilometer Array, which would involve building several facilities within the country.

About Gaganyaan:

- Gaganyaan is an ISRO mission aiming to send Indian astronauts to low-Earth orbit using an Indian launch vehicle.
- It is a demonstration mission to test technologies essential for human spaceflight, showcasing India's capability in producing, qualifying, and utilizing these technologies.
- Future goals for ISRO include establishing an indigenous space station by 2035 and landing an Indian on the moon by 2040.
- ISRO plans to integrate these ambitious projects with future lunar explorations, starting with a joint mission with Japan for lunar rover landing and a mission to return lunar soil samples to Earth.
- The Indian government has expanded spaceflight and services responsibilities beyond ISRO to New Space India Ltd. (NSIL) for commercialization and the Indian National Space Promotion and Authorization Centre (IN-SPACe) for authorizing space activities.
- Additionally, ISRO has established the Human Space Flight Centre (HSFC) to coordinate the Gaganyaan mission.
- It also promised to launch a new scheme for promoting deep-tech capabilities in the defense sector.

Topic 2. WHY HAS INDIA DEVELOPED AN ATMOSPHERIC TESTBED NEAR BHOPAL?

Important for the subject: Science and technology



On March 12, the first phase of India's Atmospheric Research Testbed in Central India (ART-CI) was inaugurated at Silkheda in Sehore district, located about 50 km northwest of Bhopal in Madhya Pradesh.

- Funded by the Ministry of Earth Sciences (MoES), the facility will house 25 high-end meteorological instruments for studying vital cloud processes associated with the monsoons over central India's Monsoon Core Zone (MCZ).

What is the Atmospheric Research Testbed (ART)?

- The ART is an open-field, focused observational and analytical research programme at Silkheda.
- The facility aims to conduct ground-based observations of weather parameters like temperature, wind speeds, etc. and in-situ (on-site) observations of the transient synoptic systems – like low-pressure areas and depressions that form in the Bay of Bengal – during the southwest monsoon season from June to September.
- The setup at ART will also be used for calibrating and validating various satellite-based observations, part of weather predictions and forecasting.
- Spread over 100 acres, the ART has been developed by the Ministry of Earth Sciences for Rs 125 crore.
- The Indian Institute of Tropical Meteorology (IITM), Pune, is in charge of the operations.
- Under the first phase, remote sensing-based and in-situ measurements using 25 meteorological instruments have commenced.
- In the second phase, ART will deploy instruments such as a radar wind profiler and balloon-bound radiosonde, and soil moisture and temperature measuring equipment.

Why is having an Atmospheric Research Testbed important?

- At present, 45% of India's labor force is employed in the agriculture sector.
- Much of Indian agriculture is rainfed, as is cultivation along the Monsoon Core Zone (MCZ), which spans the central India region from Gujarat to West Bengal.
- The southwest monsoon season accounts for 70 percent of the country's annual average rainfall (880mm).
- Throughout India, the majority of Kharif cultivation is undertaken between July and August, which see an average monthly rainfall of 280.4mm and 254.9mm (1971–2020 average), respectively.
- During this four-month-long season, several rain-bearing synoptic systems, namely the low pressures or depressions, develop in the Bay of Bengal.
- Inherently, these systems move westwards/northwestwards over to the Indian mainland and pass through the MCZ, causing bountiful rainfall.

Why is it important to have data about monsoons over central India?

- Studies have correlated the all-India rainfall performance to the rainfall received over the central India region, highlighting its importance.
- The India Meteorological Department (IMD) issues rainfall forecasts for the country's four homogeneous regions – north, west, east and south peninsular India. It issued a special rainfall forecast for the MCZ, which is considered India's food bowl.
- Central India, therefore, acts as a natural laboratory for scientists and meteorologists to perform a hands-on study of the Indian monsoons.
- They can record data and make observations about the allied systems, clouds, and other associated physical and atmospheric parameters.
- Additionally, climate change is driving erratic rainfall patterns in the tropical regions, like India.
- It has also strengthened the low-pressure systems, which are aided by high temperatures. This results in very heavy rainfall recorded along their trajectory during the monsoons.
- Now, with ART, scientists will be able to generate and obtain long-term observations on cloud microphysics, precipitation, convection, and land-surface properties, among a host of other parameters.
- This information will be assimilated and fed into the numerical weather models to enhance forecast output, especially the rainfall forecasts.
- More accurate forecasts will ultimately help the farming community plan their activities better.

Why Madhya Pradesh?

- The ART has been established at Silkheda, a location that falls directly in line with the path of major rain-bearing synoptic systems.
- This will facilitate direct monitoring and tracking.
- Besides, the locality is pristine and free of anthropogenic and other pollutants, making it the best site in central India for setting up sensitive, high-end meteorological instruments and observatories for recording data.

What instruments are ART equipped with?

- To obtain continuous observations of convection, clouds, and precipitation, and monitor the major modes of variabilities, the ART is equipped with over two dozen high-end instruments, radars and more. At 72 meters, ART will house India's tallest meteorological tower.
- Some of the instruments deployed are an aethalometer for performing aerosol studies, a cloud condensation nuclei counter, a laser ceilometer to measure cloud sizes, a micro rain

radar to calculate raindrop size and its distribution, and a Ka-band cloud radar and a C-band doppler weather radar to help track the movement of rain-bearing systems over this zone.

Topic 3. WHY SELF-CENSORSHIP OF POLITICAL SPEECH COULD BE THE FUTURE NORMAL FOR AI PLATFORMS

Important for the subject: Science and technology

As India heads to Lok Sabha elections, Google has said it will restrict the types of election-related questions users can ask its artificial intelligence (AI) chatbot Gemini in the country.

- Earlier, Krutrim, the chatbot developed by an Indian AI startup founded by Bhavish Aggarwal of Ola, had been found to self-censor on certain keywords.
- Ola had seemingly applied algorithmic filters to ensure that Krutrim beta did not produce results for queries that included keywords such as Narendra Modi, BJP, and Rahul Gandhi.
- AI platforms such as India's own Krutrim while answering political questions, the government chose to instead advise the companies to fine-tune their systems.

What is “code-level censorship”?

- Basically these companies have written a code that whenever a user asks a question that contains certain keywords, the platform will not ping the underlying foundational model, which has the potential answer to that question, but return with a predetermined response that it is not able to respond to that particular question.

What is the specific background of Google's decision?

- Google's AI platform has been under fire in recent weeks over the various responses it has generated.
- The company apologized for what it said were “inaccuracies in some historical image generation depictions” after Gemini depicted white figures (such as the founding fathers of the United States) or groups like Nazi-era German soldiers as people of color.

Topic 4. GUT MICROBES THAT DIGEST CELLULOSE ARE DECLINING, ESPECIALLY IN INDUSTRIALISED NATIONS

Important for the subject: Science and technology

A recent study, published in the journal Science, highlights the link between the increasing consumption of processed food and the decline in gut bacteria capable of digesting plant cellulose, particularly in industrialized countries.

- The research revealed three new species of cellulose-digesting bacteria in the human gut, previously abundant in rural populations, ancient human societies, and great apes, but now diminished due to dietary changes.

Key Findings:

- The study identified three new gut bacteria species – *Candidatus Ruminococcus primaciens*, *Ruminococcus hominiciens*, and *Ruminococcus ruminiciens* – which can digest cellulose, a crucial component of plant fibre.
- The decline of these bacteria affects energy balance and various health aspects since these microbes transform indigestible plant compounds into short-chain fatty acids, supplying energy to the host.
- Previously thought absent in humans, cellulose-digesting microbes were first confirmed in 2003. The newly discovered species are less common in industrialized nations compared to their prevalence in ancient and rural populations.
- Researchers analyzed samples from 75 animal species, including wild and domesticated animals and various human cohorts, using known strains *Ruminococcus champanellensis* and *Ruminococcus flavefaciens* as references to identify related species.
- The study found significant differences in the prevalence of cellulose-degrading bacteria across populations, correlating these differences with dietary fiber intake.
- Rural and ancient populations, with higher fiber diets, showed greater prevalence compared to those in industrialized countries, where processed food consumption is higher.

Significance of the study findings:

- This research underscores the profound impact of dietary choices on gut microbiota and, consequently, on human health.
- The decline of cellulose-digesting bacteria in people from industrialized countries, due to lower dietary fiber intake, suggests a shift away from diets that support a diverse and healthy gut microbiome.

Topic 5. INDIAN TEAM USES REPURPOSED DRUG TO TREAT ORAL CANCER SUBTYPE

Important for the subject: Science and technology

A novel fusion transcript in head and neck cancer identified by Mumbai-based researchers presents a promising therapeutic target.

- The fusion transcript discovered can be targeted by the FDA-approved deworming drug, pyrinium pamoate, to treat head and neck cancer.
- The study highlights the fusion transcript's potential in altering cancer cell behavior and improving treatment approaches.

Fusion Transcript and Its Implications:

- A fusion transcript occurs due to the structural rearrangement of chromosomes, leading to the creation of a chimeric gene. This study focused on the UBE3C-LRP5 fusion, resulting from translocation between chromosomes 11 and 7.
- Found in 5.3% of the 151 Indian oral cancer patients screened and 1.2% of 502 Caucasian patients. With around 200,000 new oral cancer cases annually in India, this fusion transcript could be relevant for approximately 10,000-11,000 patients each year.
- **Impact:** The UBE3C-LRP5 fusion activates the Wnt/beta-catenin signaling pathway, known for promoting cancer cell growth, migration, and invasion. This discovery marks a significant advancement in understanding head and neck cancer.

Pyrrvinium Pamoate as a Potential Treatment:

- The drug targets the signaling pathway activated by the fusion transcript, significantly reducing cancer cell aggressiveness in laboratory studies and animal models.
- **Findings:** Genetic studies by the Advanced Centre for Treatment, Research, and Education in Cancer (ACTREC) team showed that blocking the pathway downstream of the fusion transcript curtailed cancer cell proliferation and invasive capabilities.
- **Future Prospects:** With promising animal study results, clinical trials in oral cancer patients are planned, leveraging the drug's established safety profile.

Significance of the research:

- The identification of the UBE3C-LRP5 fusion transcript and its targeting by an existing FDA-approved drug offers a novel approach to treating head and neck cancer, potentially applicable to other cancer types as well.
- The findings pave the way for new therapeutic strategies, emphasizing the importance of genetic research in advancing cancer treatment. The planned clinical trials will further elucidate the drug's effectiveness in a clinical setting.



- A MIRV is a 'missile bus' whose passengers are nuclear bombs and which facilitates a single booster to deliver them to different targets.
- MIRVs are a "force multiplier" because one MIRV-ed missile can strike several targets. MIRVs are also useful for saturating and penetrating ballistic missile defenses.
- In 1970, the U.S. started to deploy the Minuteman III, the first MIRV-ed intercontinental ballistic missile (ICBM) with three warheads on each missile.
- In 1971, it deployed the Poseidon, the first MIRV-ed submarine-launched ballistic missile (SLBM).
- The Soviet Union followed the U.S. and by the 1970s developed its own MIRV-ed ICBM and SLBM technology. The U.K. and France also possess the technology.
- China has developed and deployed MIRV technology with multiple warheads placed on its DF-5B ICBMs and is fast expanding and modernizing its nuclear arsenal.

What was the Mission Divyastra test?

- The MIRV system is equipped with indigenous avionics systems and high accuracy sensor packages that ensure the re-entry vehicles reach the target points with the desired accuracy.
- The 'Agni' series of missiles constitute the backbone of India's nuclear weapons delivery, and Agni V is the longest range missile in the arsenal, with a reach of over 5,000 km.
- This means it can reach most of China, especially with a smaller warhead, which would increase the range further.
- MIRV technology gives better leverage in this regard.

Topic 7. INTERNATIONAL BODY RECOMMENDS MORE SENSITIVE TEST TO INDICATE RISK OF DEVELOPING DIABETES

Important for the subject: Science and technology

The International Diabetes Federation (IDF), in a position statement, has recommended the adoption of a test measuring blood sugar one hour (1-h PG) after the load of Oral Glucose Tolerance Test (OGTT) has been administered to check for diabetes risk.

- A "wealth of epidemiological data" guided the confirmation of the superior purpose in using the 1-h PG (plasma glucose) over even fasting PG (FPG), HbA1c and 2-hour PG across ethnicity, sex and age categories.
- The 1-h PG has been found to be a more sensitive biomarker for the earlier identification of these high-risk individuals

Measurement of blood sugar:

- The measure of blood sugar one hour after a 75 gm sugar solution is consumed will be a far more sensitive and practical method to screen for intermediate hyperglycaemia (IH), earlier known as pre-diabetes, and type 2 diabetes (T2D) in people at risk.
- It recommends the use of the cut-off points of 155 mg/dL for measuring IH, and 209 mg/dL for T2D, meaning any figure higher than specified would indicate a higher chance of diabetes, even if the individual's fasting and two-hour values were normal.
- The International Diabetes Federation (IDF) has recommended the adoption of a test measuring blood sugar one hour (1-h PG) after the load of Oral Glucose Tolerance Test (OGTT) has been administered to check for diabetes risk.
- They have also recommended revising glycaemic thresholds to measure and predict the risk of developing diabetes.
- The oral glucose test is the best for detecting the onset of diabetes at a future date, and if it is not employed, many remain undiagnosed and untreated.

About Diabetes mellitus:

- Diabetes mellitus is a metabolic disease of high blood sugar (glucose) levels that result from problems with insulin secretion, its action, or both.
- Normally, blood glucose levels are tightly controlled by a hormone produced by the pancreas known as insulin.
- When blood glucose levels rise (for example, after eating food), insulin is released from the pancreas to normalize the glucose level.

Type 1 diabetes:

- An absolute lack of insulin, usually due to destruction of the insulin-producing beta cells of the pancreas, is the main problem in type 1 diabetes.
- It is to be due to an autoimmune process, in which the body's immune system mistakenly targets its own tissues (islet cells in the pancreas).
- This tendency for the immune system to destroy the beta cells of the pancreas is likely to be, at least in part, genetically inherited, although the exact reasons that this process happens are not fully understood.

Type 2 diabetes:

- People who have type 2 diabetes can still produce insulin, but do so relatively inadequately for their body's needs.
- Genetics plays a role in the development of type 2 diabetes, and having a family history and close relatives with the condition increases your risk; however, there are other risk factors, with obesity being the most significant.

Topic 8. INDIAN PATENT OFFICE GRANTED 1 LAKH PATENTS IN PAST YEAR

Important for the subject: Science and technology

The Ministry of Commerce and Industry said on Saturday that the Patent Office has granted an unprecedented one lakh patents within a single year.

- As per an official release, in the fiscal year 2023-24 alone, the Patent Office received an all-time high of 90,300 patent applications.
- The Patent Office granted over one lakh patents in the last 1 year (15-Mar-2023 to 14-Mar-2024). Every working day, 250 patents were granted, the ministry said.
- Alongside patent grants, there has been a notable surge in GI registrations, demonstrating a threefold increase compared to the previous year. Currently, India boasts 573 registered GIs, with 98 new registrations in the fiscal year 2023-24, according to the release.
- Additionally, copyright registrations have reached a record-breaking 36,378, underscoring the vast potential within the creative sector.
- In the realm of design, the fiscal year 2023-24 witnessed the highest number of registrations to date, totalling 27,819, alongside the final disposal of 30,450 applications.
- Noteworthy initiatives such as Toycathon, jointly organized by J&K SCERT and the Indian IP Office, have facilitated the registration of 115 novel designs by J&K school students, according to the release.
- The Trade Marks Registry has also redoubled its efforts to expedite trademark protection, committing to issuing examination reports within 30 days of receiving trademark applications.
- In parallel, the National Intellectual Property Academy (NIPAM) has played a pivotal role in raising IP awareness, offering training to 24 lakh youths, particularly students and teachers, across over 7,000 institutions in the last two years.
- The announcement coincided with the official notify of the Patent R The announcement coincided with the official notification of the Patent Rules, 2024, which introduces several provisions aimed at simplifying the patent prosecution and maintenance processes.
- These rules are poised to streamline the acquisition and management of patents, thereby nurturing an environment conducive to innovation and economic growth.
- Notable features of the revamped rules include provisions for acknowledging inventors' contributions through a new 'Certificate of Inventorship' and reducing the time limit for filing examination requests to accommodate the fast pace of technological advancements, read the press release.

Concept:

What is a patent?

- A patent is an intellectual property right.
- A patent is an exclusive right granted for an invention, which is a new product or process that meets conditions of novelty, non-obviousness, & industrial use.
- A patent provides the owner with the right to decide how – or whether – the invention can be used by others.

Criteria for issuing Patents in India

- **Novelty:** it should be new (not published earlier + no prior Public Knowledge/ Public Use in India)
- **Non obviousness:** It must involve an inventive step (technical advanced in comparison to existing knowledge + non- obvious to a person skilled in the relevant field of technology)
- **Industrial use:** It should be capable of Industrial application
- Patents in India are governed by “The patent Act 1970” which was amended in 2005 to make it compliant with TRIPS.

What cannot be patented?

- Frivolous Invention: Invention that harms public order/Morality/ health of animals, plants & humans
- Methods of agriculture or horticulture
- Traditional Knowledge
- Computer Program
- Inventions related to Atomic Energy
- Plants & Animals
- Mere discovery of scientific principle

Patent (Amendment) Rules, 2020

- The central government has published an amended Patent (Amendment) Rules, 2020.
- The new rules have amended the format of a disclosure statement that patentees & licensees are required to annually submit to the Patent Office.
- The format contains disclosing the extent to which they have commercially worked or made the patented inventions available to the public in the country.
- The disclosure is to be made in the Form 27 format as prescribed under the Patent Rules, 2003.

- The patentees & licensees as well as the Patent Office have blatantly disregarded this statutory requirement.
- There has been significant pressure from MNCs & the U.S. to do away with this requirement.

What is a Geographical Indication?

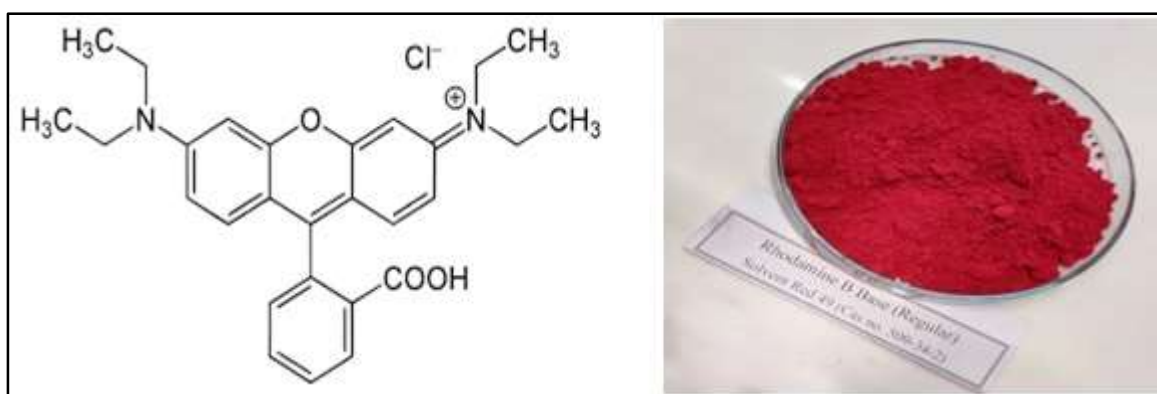
- It is an indication that it originates from a definite geographical territory. It is used to identify agricultural, natural or manufactured goods
- It is an insignia on products having a unique geographical origin and evolution over centuries with regard to its special quality or reputed attributes.
- It is a mark of authenticity and ensures that registered authorized users or at least those residing inside the geographic territory are allowed to use the popular product names.
- GI tag in India is governed by Geographical Indications of Goods (Registration & Protection) Act, 1999. It is issued by the Geographical Indications Registry (Chennai).

What is the benefit of registration of geographical indications?

- It confers legal protection to Geographical Indications in India
- Prevents unauthorised use of a Registered Geographical Indication by others.
- It promotes economic prosperity of producers of goods produced in a geographical territory.

Topic 9. WHY KARNATAKA HAS BANNED FOOD COLORING USED IN GOBI MANCHURIAN AND COTTON CANDY

Important for the subject: Science and technology



The Karnataka Government has banned the use of harmful coloring agents in cotton candy and “Gobi Manchurian”.

- Telangana Food Safety officials detect cotton candy laced with carcinogen at Medaram Jatara

- On February 17, Tamil Nadu banned the sale of cotton candy or candy floss after analysis confirmed the presence of Rhodamine-B, an industrial dye, in samples lifted from stalls in Chennai.

About Rhodamine-B:

- Rhodamine-B is a textile dye, and its use in food has a huge impact on health.
- Rhodamine-B is a fluorescent dye used in cosmetics, textile and leather industries. It gives you brilliant pinks, greens and blues.
- It is used as a food coloring agent not only in cotton candy but also in the preparation of sweets, various manchurian items and pakoras and in the preparation of sauces for Chinese food.
- It is a chemical color used in dyeing clothes, paper, leather, printing, and plastics. It is used to give red and pink colors.
- Long-term consumption can cause allergies that can manifest in the form of irritation of the lip, tongue as well as eyes and also cause upper respiratory allergies.
- Studies have shown that Rhodamine-B can cause cell death. In long-term use, it can damage the cerebellum tissue and brainstem.
- There is recent evidence that it damages the kidney, liver and increases the risk of stomach tumor.
- It is not a food color but is toxic to the human body and is a carcinogen.
- The International Agency for Research on Cancer — the World Health Organisation body that maintains a list of cancer causing agents — says it cannot be classified as carcinogenic to humans, there are some studies on rats that have shown carcinogenic effects.

Topic 10. VACCINE FOR DENGUE MAY BE OUT IN MARKETS BY MID-2026, SAYS IIL***Important for the subject: Science and technology***

Indian Immunologicals Limited (IIL), a subsidiary of the National Dairy Development Board, has completed the first phase of clinical trials for a dengue vaccine, which focused on assessing safety.

- The vaccine's efficacy will be tested in the upcoming second and third phases of trials, with a commercial release anticipated by mid-2026.
- The development of the dengue vaccine involved sourcing virus strains from the National Institute of Virology.

- Besides dengue, IIL is working on vaccines for the Zika virus and Kyasanur Forest Disease (KFD), a tick-borne viral disease primarily confined to Karnataka and its border regions.
- The Indian Council of Medical Research (ICMR) has agreed to support the clinical trials for the Zika vaccine financially and is in discussions with IIL about co-developing the KFD vaccine.
- Additionally, IIL launched a Hepatitis A vaccine named Havisure in January of this year, which has been well received in the market.

Dengue:

- Dengue is a vector-borne disease transmitted by the bite of an infected female Aedes Aegypti mosquito. This mosquito also transmits chikungunya, yellow fever and Zika infection.
- Aedesaegypti is a daytime feeder. The peak biting periods are early in the morning and in the evening before dusk.
- There are 4 serotypes of the virus that causes dengue. These are known as DEN-1, DEN-2, DEN-3, DEN-4.
- The symptoms of the disease will begin anywhere between three to fourteen days after the initial infection.
- **The symptoms include:** High fever, Headache, Vomiting, Muscle and joint pains, Skin Rash. Diagnosis of dengue infection is done with a blood test.
- There is no vaccine or specific medication for dengue fever. Patients should seek medical advice, rest and drink plenty of fluids.
- Dengue cannot be spread directly from person to person. However, a person infected and suffering from dengue fever can infect other mosquitoes.
- Most cases occur in tropical areas of the world, including the Indian subcontinent, Southeast Asia, Southern China, Taiwan, the Pacific Islands, the Caribbean, Mexico, Africa, Central and South America.
- WHO estimates 39 crore dengue virus infections per year, of which 9.6 crore show symptoms.

Kyasanur Forest Disease (KFD):

- Also known as monkey fever, it is a tick-borne viral disease affecting monkeys and humans.
- Identified in 1957 in Karnataka, India's Kyasanur Forest.
- Transmission through the bite of infected ticks or contact with blood/tissues of infected animals. Rare person-to-person transmission.

- Symptoms include high fever, headache, muscle pain, vomiting, and can progress to hemorrhagic fever and neurological complications.
- No specific treatment; prevention focuses on reducing tick exposure, wearing protective clothing, and using tick repellents.
- A vaccine is available for high-risk individuals like forest and healthcare workers. Control measures involve surveillance, prompt diagnosis, treatment, and tick population control via habitat modification and acaricides.
- Endemic to parts of India (Karnataka, Maharashtra, Kerala, Tamil Nadu, Goa) with reports in Sri Lanka and Malaysia

Indian Immunologicals Limited (IIL):

- IIL is a subsidiary of the National Dairy Development Board, based in Hyderabad, Telangana, India.
- Registered as a Public Limited Company under the Companies Act, 1956, by the Ministry of Corporate Affairs (MCA Services).

Established in 1982 by the National Dairy Development Board.

- Known for developing vaccines for both veterinary and human use, including those for foot-and-mouth disease, rabies, bacterial infections, canine diseases, hepatitis, measles, MMR, and DPT.
- Major supplier of DPT, TT, and hepatitis B vaccines to India's Universal Immunization Programme.
- Operates three vaccine manufacturing facilities in India: one in Gachibowli-Hyderabad for vaccine production, one in Karakapatla-Hyderabad for animal health formulations and human vaccines, and one in Ooty for the human anti-rabies vaccine "Abhayrab".
- Has a subsidiary in New Zealand, Pristine Biologicals Ltd, involved in serum production for vaccine manufacturing.
- Launched the measles and rubella vaccine 'Mabella' for children on 25 November 2023, developed in partnership with Polyvac Institute of Vietnam, marking the 25th anniversary of the Human Biologicals Institute (HBI) division in Udthagamandalam (Ooty), Tamil Nadu.

Topic 11. WHAT IS SIMA, GOOGLE DEEPMIND'S NEW AI THAT CAN PLAY VIDEO GAMES WITH YOU

Important for the subject: Science and technology



Google DeepMind on March 13 revealed its latest AI gaming agent called SIMA or Scalable Instructable Multiworld Agent, which can follow natural language instructions to perform tasks across video game environments.

- SIMA points to a future of gaming where AI agents could play a key role.
- It also takes us a step closer to AI which can intelligently collaborate with humans not only in games but also in doing tasks in real-world environments.
- With an AI robot to help seniors beat loneliness and a fully autonomous AI software engineer released recently, the week has been a busy one for AI enthusiasts.

What is SIMA?

- AI research lab Google Deepmind describes SIMA as an AI Agent, which is different from AI models such as OpenAI's ChatGPT or Google Gemini.
- AI models are trained on a vast data set and are limited when it comes to working on their own. On the other hand, an AI Agent can process data and take action themselves.
- SIMA can be called a generalist AI Agent that is capable of doing different kinds of tasks. It is like a virtual buddy who can understand and follow instructions in all sorts of virtual environments – from exploring mysterious dungeons to building lavish castles. It can accomplish tasks or solve challenges assigned to it.
- It is essentially a super-smart computer programme that can be thought of as a digital explorer, having the ability to understand what you want and help create it in the virtual world.

How does SIMA work?

- SIMA “understands” your commands as it has been trained to process human language. So when you ask it to build a castle or find the treasure chest, it understands exactly what these commands mean.
- One distinct feature of this AI Agent is that it is capable of learning and adapting.
- SIMA does this through the interactions it has with the user.
- The more you interact with SIMA, the smarter it gets by learning from its experiences and improves over time.
- Based on the current stage of AI development, it is a big feat for an AI system to be able to play even one game.
- This could potentially introduce more helpful AI agents for other environments.

How was SIMA trained?

- To expose the AI agent to different environments, Google Deepmind collaborated with eight game studios to test SIMA on nine different video games, including Teardown by Tuxedo Labs and No Man’s Sky by Hello Games.
- With every game, SIMA’s portfolio opened a new interactive world along with a range of skills for it to learn, such as simple navigation, menu use, mining resources, flying spaceships, etc.
- They also used four research environments, including one built with the cross-platform game engine Unity.
- This environment, called Construction Lab, required AI agents to build sculptures from building blocks.
- This exercise was done to test the agent’s object manipulation abilities and intuitive understanding of the physical world.

FSSAI approved food colors:

- The natural food colors whose use is allowed includes carotene and carotenoids (yellow, orange), chlorophyll (green), riboflavin (yellow), caramel, Annatto (orange-red, derived from the seed of an American tree), saffron, and curcumin (yellow, from turmeric).
- The synthetic colors allowed include red from Ponceau 4R, Carmoisine, and Erythrosine; yellow from Tartrazine and Sunset Yellow FCF, blue from Indigo Carmine and Brilliant Blue FCF, and green from: Fast Green FCF.

Topic 12. WHY THE B200 BLACKWELL CHIP WILL CONSOLIDATE NVIDIA'S STRANGLEHOLD OVER THE AI MARKET

Important for the subject: Science and technology

Nvidia's New AI Chip Announcement- B200 'Blackwell':

Nvidia Corporation's CEO, Jensen Huang, announced the new AI chip at their annual developer conference in San Jose, California.

- The new chip, named B200 'Blackwell', outperforms its predecessor, the H100 'Hopper', by completing some computational tasks 30 times faster.
- The Blackwell GPU contains 208 billion transistors, significantly more than the H100's 80 billion, enhancing Nvidia's GPU offerings.

Performance Enhancements:

- The Blackwell chip is twice as powerful in training AI models and has five times the capability in inference tasks, reducing the resources needed for tasks like training GPT models from 8,000 Hopper GPUs to 2,000 Blackwell GPUs and cutting power consumption from 15 megawatts to four megawatts.
- Major companies like Google, Amazon, Microsoft, and Open AI plan to use the new chip in cloud-computing services and AI products.
- Nvidia, already the third-most valuable US company, saw its stock surge nearly 250% in the past year, becoming the world's most valuable chipmaker.

Nvidia's Competitive Edge:

- Full Stack Solutions: Nvidia's success is attributed to its proprietary software and comprehensive systems that optimize GPU features for AI, positioning it ahead in the AI chip race.
- Overall, Nvidia's announcement of the B200 'Blackwell' AI chip marks a significant milestone in computational efficiency and AI capabilities, reinforcing the company's leadership in the global GPU market and indicating a promising future for AI technology development and adoption.

GPU Demand and Supply:

- The AI boom has significantly increased demand for GPUs, which are crucial for processing large volumes of data in AI models.
- Nvidia faces a virtual monopoly in the GPU market, leading to order backlogs. However, the B200 promises to alleviate some of these shortages.
- **Moody's 2024 AI Outlook:** Anticipates increased AI spending and adoption, with a gradual improvement in the supply of high-performance GPUs.

- Nvidia's dominance in the GPU market is expected to continue, with GPUs becoming increasingly central to AI applications, shifting the hardware equation from CPUs to GPUs.

Topic 13. T.N. START-UP TO LAUNCH ITS FIRST ROCKET ON FRIDAY

Important for the subject: Science and technology

Agnibaan Sub Orbital Technology Demonstrator (SOrTeD):

Tamil Nadu's space start-up, Agnikul Cosmos Private Limited, headquartered in Chennai, is scheduled to launch its first rocket, Agnibaan Sub Orbital Technology Demonstrator (SOrTeD), from Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh, on March 22.

- **Mission Goals:** The mission aims to validate various systems necessary for orbital flight, except stage separation, with plans for post-flight analysis to prepare for future orbital launches.
- It marks India's first rocket launch from a private launchpad. It will be powered by India's first semi-cryogenic engine.
- The launch will feature the world's first single-piece 3D printed engine, which is designed and built indigenously.

This launch represents:

- India's first liquid oxygen-kerosene rocket flight. The first use of a patented, integrated single-piece 3D printed rocket.
- A sub-orbital launch with advanced features like closed-loop feedback guidance and control with a gimbaled thrust vector control, requiring flight termination systems and extensive safety preparations.

About Agnikul Cosmos:

- Founded in 2017 by Srinath Ravichandran, Moin SPM, and Satya Chakravarthy, Agnikul Cosmos is the first company to sign an agreement with ISRO under the IN-SPACe initiative in December 2020, allowing it access to ISRO's expertise and facilities.

Tamil Nadu's Role in Space Sector:

- Tamil Nadu has significantly contributed to the space sector, with numerous companies and MSMEs supplying parts for major ISRO projects like Chandrayaan-3.
- Entities like Data Patterns and L&T have established strong presences in the state, contributing to ISRO's missions.

- TIDCO is enhancing the state's space sector by establishing two new space parks in Kulasekarapattinam, focusing on space-related manufacturing and propellant production.

Mission Prarambh- Vikram-S rocket:

- In 2022, India's first privately developed rocket was launched named Vikram-S, by Skyroot Aerospace, marking a growing trend of private sector involvement in India's space endeavours. This mission was titled "Prarambh".

Topic 14. NASA CRAFT THAT DIVERTED SPACE ROCK ALSO DENTED IT***Important for the subject: Science and technology***

NASA's DART spacecraft successfully altered the trajectory and shape of the asteroid Dimorphos in 2022, demonstrating a potential method to protect Earth from celestial threats.

- Pre-collision, Dimorphos resembled a plump ball; post-impact, its shape changed to resemble a watermelon or a triaxial ellipsoid.
- Dimorphos is a moonlet of the near-earth asteroid Didymos, though neither poses a threat to Earth.
- The collision occurred on September 26, 2022, with the spacecraft hitting Dimorphos at about 22,530 kph, about 11 million km from Earth.
- Dimorphos is approximately 170 metres wide, while Didymos measures about 780 metres in diameter.
- The impact altered Dimorphos's orbital path around Didymos to become elliptical and reduced its orbital period by 15 seconds, indicating a faster completion of its orbit post-impact.
- The asteroid's orbital period has continued to decay slowly due to the leakage of loose debris from the system, carrying angular momentum and contracting the orbit.

DART Mission:

- NASA's DART mission was a spacecraft designed to test a method of deflecting an asteroid for planetary defense, using the "kinetic impactor" technique (in simplest terms means smashing a thing into another thing).
- DART was the first-ever space mission to demonstrate asteroid deflection by kinetic impactor.
- The target of the spacecraft was a 160-meter-wide asteroid known as Dimorphos, which is a moonlet in orbit around the larger asteroid, Didymos.
- It was launched in November 2021. It is the first time humanity intentionally changed the motion of a celestial object in space.

Topic 15. THE BIG PROMISE OF SMALL-SCALE LNG AS FUEL FOR INDIA, WITH FIRST SSLNG PLANT COMMISSIONED

Important for the subject: Science and technology

Union Minister for Petroleum and Natural Gas Hardeep Singh Puri dedicated to the nation India's first small-scale liquefied natural gas (SSLNG) unit at GAIL (India) Ltd's Vijaipur complex in Madhya Pradesh.

Why small-scale LNG?

- The Indian government is promoting the use of natural gas, aiming to increase its share in the primary energy mix to 15% by 2030, up from just over 6% currently.
- However, expanding gas consumption faces challenges, particularly in transporting gas to areas not connected by the natural gas pipeline grid, affecting its use in long-haul transportation.
- To address these challenges and the slow progress of large-scale pipeline projects, small-scale LNG (SSLNG) emerges as a viable solution.
- SSLNG facilities, like the one at Vijaipur, are expected to significantly alter the natural gas landscape in India. Additionally, GAIL is investing Rs 650 crore in developing dispensing stations along major highways, including the Golden Quadrilateral, to facilitate the use of LNG as an automotive fuel.

What exactly is SSLNG?

- SSLNG, a term with no standard global definition in its nascent stage, refers to the process of liquefying natural gas for transportation in smaller-scale operations, distinct from the large-scale infrastructure typically associated with LNG.
- This involves supplying LNG—natural gas in its liquid or super-chilled form—via specialized trucks and small vessels to industrial and commercial consumers in areas not served by pipelines.
- In cases where the LNG is to be used as compressed natural gas (CNG) for vehicles or piped gas for households and manufacturing, it is regasified using small vaporizers. For direct use in its liquid form, LNG is supplied to end-users without regasification.
- The SSLNG supply chain can originate from large-scale LNG import terminals, where LNG is transported to consumers in cryogenic road tankers or small vessels instead of through pipeline regasification.
- Alternatively, it can start in areas with abundant natural gas supplies or production, where small liquefaction plants are established. An example of this latter approach is the SSLNG unit at Vijaipur, part of GAIL's largest gas processing facility.

How the SSLNG Unit at GAIL's Vijaipur Complex Works:

- The SSLNG unit, a Rs 150 crore facility at GAIL's Vijaipur complex, features SSLNG skids with a total capacity of 36 tonnes per day and associated liquid handling systems.
- It utilizes zeolite pretreatment skids (ZPTS) for removing impurities like nitrogen, water, sulfur, and carbon dioxide from natural gas at about 15 bar pressure.
- The gas is then compressed to around 260 bar in a four-stage compressor and cooled to -60 to -70 degrees Celsius using a propane-based refrigeration system.
- Following expansion, the temperature drops below -140 degrees Celsius, liquefying the gas. The resulting LNG is dispatched via cryogenic tankers for use in city gas distribution networks as CNG and piped gas, and at LNG filling stations for vehicles.
- The unit employs an automated, web-based Supervisory Control and Data Acquisition (SCADA) system for monitoring.

The Business Case for SSLNG:

- GAIL leads the initiative, but most major oil and gas companies in India are exploring this high-growth sector.
- The movement towards SSLNG in India initially gained momentum through Petronet LNG Ltd, the country's largest LNG importer, which began supplying LNG from its large import terminals in Gujarat and Kerala to small industrial consumers.
- Petronet, backed by GAIL, ONGC, IOC, and BPCL, promotes the use of LNG as automotive and marine fuel, and for city gas distribution networks and industries requiring natural gas.
- The strategy aims to increase LNG consumption nationwide and boost volumes at the Kochi terminal, which has faced challenges due to lack of pipeline connectivity to key consumers.

Using LNG (Liquefied Natural Gas) as a fuel for long-haul trucks and buses is becoming increasingly attractive due to several reasons:

- **Environmental Benefits:** LNG produces significantly lower carbon dioxide emissions than diesel and emits negligible amounts of particulate matter, nitrogen oxide, and sulfur dioxide, making it a cleaner alternative.
- **Economic Efficiency:** Vehicles powered by LNG can travel a slightly longer range on similar-sized fuel tanks compared to diesel and benefit from generally lower prices than crude oil, from which diesel is derived. Since India imports only about half of its natural gas needs (as opposed to a much larger proportion of its crude oil), switching to LNG could result in significant foreign exchange savings.
- **International Examples:** Countries like China have already adopted LNG aggressively in their medium and heavy commercial vehicle sectors, demonstrating its viability.

Challenges in India's Adoption:



- Lack of availability and higher initial costs of LNG-powered vehicles compared to diesel variants, absence of LNG vehicle financing options, and a nearly non-existent LNG retail infrastructure.
- **Efforts to Overcome Challenges:** Entities like GAIL and Petronet are actively working to establish a supportive ecosystem for the transition from diesel to LNG.
- This includes collaborations with commercial vehicle manufacturers for trials, discussions with state roadways and truck fleet operators, and the establishment of LNG dispensing stations along highways.
- Indian Oil Corporation (IOC) is also involved in setting up LNG stations, aiming to enhance the LNG infrastructure for vehicles.

Topic 16. ELIMINATING DISEASES, ONE REGION AT A TIME

Important for the subject: Science and technology

The Carter Center, a leader in the global elimination and eradication of diseases, recently reported that guinea worm disease was close to eradication.

- From 3.5 million cases a year in 21 countries in 1986, the number had come down to 13 in five countries in 2023, a reduction of 99.99%. This would be the second disease after smallpox to be eradicated and the first one with no known medicines or vaccines.

Disease elimination vs. Eradication	<ul style="list-style-type: none"> • Disease elimination focuses on achieving zero transmission within a specified region, contrasting with eradication, which is the permanent global cessation of infection by a pathogen without any risk of reintroduction.
Benefits of disease elimination	<ul style="list-style-type: none"> • Disease elimination enhances public health, particularly for the vulnerable poor, by energizing the health system, improving primary care, diagnostics, and surveillance, and fostering international support. • It also generates significant political, bureaucratic, and public commitment.
Challenges in eliminating a disease	<ul style="list-style-type: none"> • The elimination process is resource-intensive and places a heavy burden on health systems, which could lead to

	<p>the neglect of other important health functions, especially in weaker health systems.</p> <ul style="list-style-type: none"> • This necessitates a careful analysis of costs and benefits and requires strong political support.
Strategic Considerations	<ul style="list-style-type: none"> • While scientifically feasible for many diseases, strategic focus should be on pathogens with significant impact and low enough prevalence to make elimination practical. • For diseases with high prevalence, control to reduce their numbers to a feasible level for elimination should be the initial aim. • This strategy helps in understanding elimination processes and costs, and in strengthening health systems for the rigors of elimination.
Need for Robust Surveillance Systems	<ul style="list-style-type: none"> • The government's commitment to disease elimination necessitates substantial investments in surveillance systems to accurately detect every case of the disease. • Even after achieving elimination, ongoing surveillance is critical to promptly identify and address any disease reintroduction, given that the pathogen itself has not been eradicated globally.
Targeted Approaches to Disease Elimination	<ul style="list-style-type: none"> • India, which carries 40% of the global burden of lymphatic filariasis, aims for its elimination as resolved by the World Health Assembly in 1997. • The disease's presence in only a few states suggests that a strategic combination of surveillance, vector control, drug administration, and morbidity management could lead to its elimination. • Conversely, some diseases with long incubation periods, high prevalence, and drug resistance across many regions require a revised, more localized, and phased approach to elimination.

	<ul style="list-style-type: none"> Diseases that can be feasibly eliminated in defined geographical regions—such as states, districts, or blocks—should be targeted first.
Regional Certification and Expansion Strategy	<ul style="list-style-type: none"> After achieving elimination and receiving regional certification, such areas should be safeguarded (“ring-fenced”) with enhanced control measures in neighboring regions. This strategy allows adjacent areas to progress towards elimination once they meet the necessary criteria, facilitating a gradual expansion of disease-free zones.

Topic 17. NUCLEAR ENERGY: FIXING THE FINANCE

Important for the subject: Science and technology

On March 21, Brussels hosted the first-ever Nuclear Energy Summit, co-chaired by the Prime Minister of Belgium Alexander De Croo and the Director General of the International Atomic Energy Agency (IAEA) Rafael Mariano Grossi.

- The UN Climate Change Conference (COP28) in Dubai in December 2023 highlighted nuclear energy’s essential role in achieving climate goals.
- A declaration by 22 world leaders called for tripling nuclear energy capacity by 2050, aligning with the IAEA’s ‘Atoms4Netzero’ initiative.
- Nuclear power is favoured for its low carbon emissions—four times less than solar farms and other renewables like wind, hydropower, and geothermal—and its ability to provide constant energy without geographical limitations.
- Additionally, nuclear power plants boast low operating costs, require less land, and have a longer lifespan than other renewable sources.

How can nuclear energy be financed?

- Financing nuclear energy, crucial for its large-scale adoption as a primary energy source, hinges on advancements in nuclear technology and financial strategies.
- Innovations such as Small Modular Reactors (SMRs) and improved safety measures are pivotal in reducing nuclear risks and stigma, potentially attracting tech startups into this traditionally government-dominated sector.
- Despite technological progress promising significant carbon emission reductions, with an IAEA study indicating half of the reductions by 2050 may come from emerging

technologies, financial support from Multilateral Development Banks (MDBs) and private investors remains scarce.

- The World Bank's last nuclear project loan was in 1959, underlining the urgent need for policy reassessment to enable private or blended finance models in nuclear energy funding.

Has the cooperative model worked?

- The cooperative model has proven successful in funding nuclear energy projects, with notable examples in France, South Korea, Russia, and the U.K.
- This approach involves a consortium of investors raising market credit and assuming full project responsibility.
- Finland's 'Mankala' model showcases a cooperative finance structure where companies share the construction and operational costs of energy producers, benefiting from cost-based energy access without dividends.
- Such financial innovation, coupled with market support and low-interest rates, can significantly advance nuclear energy.
- Globally, 440 nuclear reactors contribute a quarter of the world's low-carbon energy, with an increase indicated by 60 reactors under construction and 110 planned, particularly in Asia and notably in China. China aims to escalate its nuclear energy production to 10% by 2035 and 18% by 2060.
- Despite the expansion, challenges in nuclear infrastructure development and financing persist, as highlighted by the termination of NuScale Power's SMR project in Utah and the financial difficulties faced by industry giants Westinghouse and Areva.

What about India?

- India's nuclear power, despite offering cost-effective energy solutions compared to solar power, constitutes only 1.6% of its renewable energy mix due to concerns such as stigma, safety risks, regulatory challenges, high initial costs, and project delays.
- However, recent liberalization in the nuclear sector, including inviting \$26 billion in private investments and plans to significantly increase nuclear capacity to 22,480 MW by 2031-2032, signals a positive shift.
- Prime Minister Modi's engagement with the Prototype Fast Breeder Reactor (PFBR), which can simultaneously produce fuel and power, highlights progress towards a more self-reliant and ambitious nuclear industry in India.

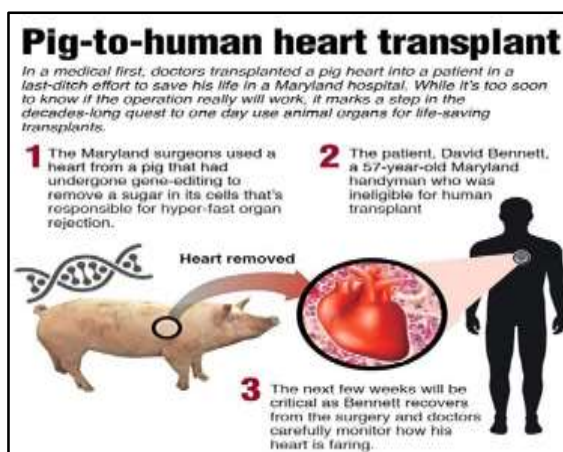
Atoms4NetZero

- It is an IAEA initiative that supports efforts by Member States to harness the power of nuclear energy in the transition to net zero.

- The initiative provides Member States and stakeholders including industry, financial institutions, and international organizations with technical expertise and scientific evidence on the potential of nuclear energy to decarbonize electricity production as well as hard-to-abate sectors such as industry and transport.
- As countries grapple with the climate crisis and growing energy security concerns, nuclear energy is increasingly recognized for the role it can play in an accelerated transition to net zero.
- Nuclear power currently provides about 10% of the world's electricity, equivalent to about a quarter of all low-carbon electricity. Atoms4NetZero seeks to inform policymakers and decision-makers on the potential way forward for nuclear power as the reliable backbone of clean, affordable, resilient and more secure energy transitions.

Topic 18. US SURGEONS HAVE TRANSPLANTED A PIG KIDNEY INTO A PATIENT

Important for the subject: Science and technology

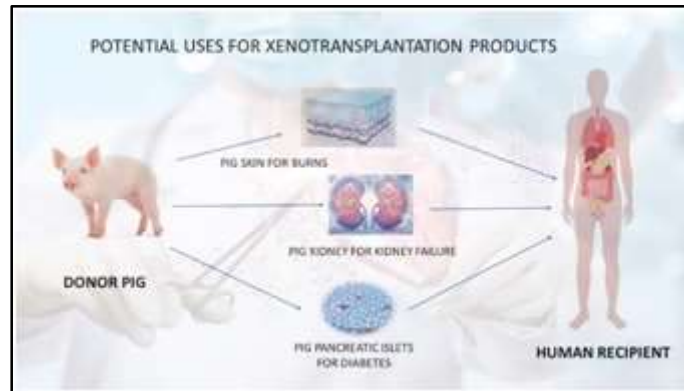


Doctors in Boston announced Thursday they have transplanted a genetically modified pig kidney into a 62-year-old patient.

- Massachusetts General Hospital said it's the first time a pig kidney has been transplanted into a living person.
- Previously, pig kidneys have been temporarily transplanted into brain-dead donors.
- Two men received heart transplants from pigs, although both died within months.
- The announcement marks the latest development in xenotransplantation, the term for efforts to try to heal human patients with cells, tissues, or organs from animals.

About Xenotransplantation:

- It is any procedure that involves the transplantation, implantation or infusion into a human recipient of either (a) live cells, tissues, or organs from a nonhuman animal source. (b) human body fluids, cells, tissues or organs that have had ex vivo contact with live nonhuman animal cells, tissues or organs.
- The development of xenotransplantation is, in part, driven by the fact that the demand for human organs for clinical transplantation far exceeds the supply.



Topic 19. ELON MUSK'S NEURALINK SHOWS FIRST BRAIN-CHIP PATIENT PLAYING ONLINE CHESS

Important for the subject: Science and technology



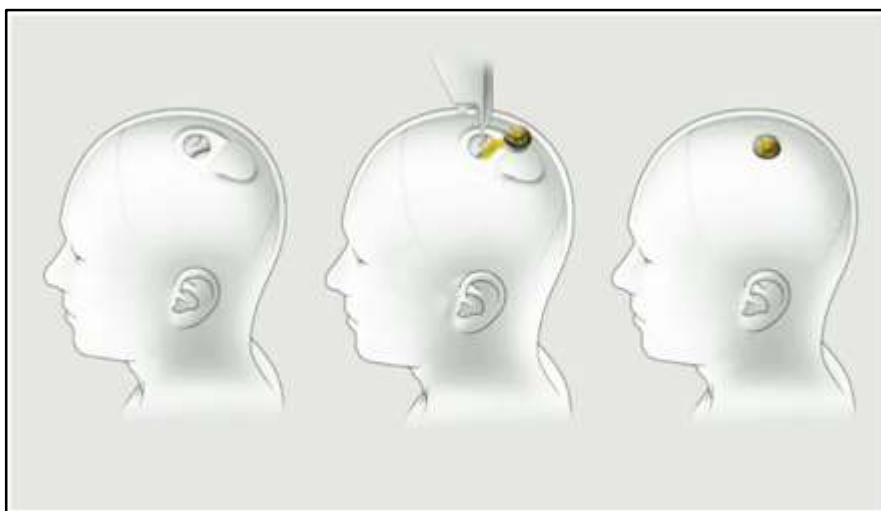
Elon Musk's brain-chip startup Neuralink live streamed on Wednesday its first patient implanted with a chip using his mind to play online chess.

- Noland Arbaugh, the 29-year-old patient who was paralyzed below the shoulder after a diving accident, played chess on his laptop and moved the cursor using the Neuralink device.
- 29-year-old Noland Arbaugh is the first human patient to get implanted with the Neuralink device that reads signals from the brain.

- The implant seeks to enable people to control a computer cursor or keyboard using only their thoughts.
- Musk in January this year announced that the first implant was successful and that the patient was able to “move a cursor” using the interface.

About Neuralink:

- Neuralink is working on developing a brain-computer interface that is designed to help patients with paralysis or other conditions control computers and other electronic devices using neural signals.
- The US Food and Drug Administration gave Neuralink clearance to conduct its first trial to test its implant on humans last year.
- The study used a robot to surgically place a brain-computer interface in a region of the brain that controls the intention to move.



Topic 20. COMPETITION COMMISSION OF INDIA (CCI) ORDERS PROBE AGAINST GOOGLE

Important for the subject: Economy

The Competition Commission of India (CCI) has initiated a probe against Google regarding its User Choice Billing (UCB) system, finding it to be prima facie anticompetitive.

- The CCI order comes after four entities approached the CCI, alleging that Google’s UCB \Google’s own apps.
- Google introduced the UCB system in September 2022, allowing app developers offering digital content to provide alternative billing systems (ABS) alongside the Google Play Billing System (GPBS).

- Under this system, Google alternative billing systems (ABS) alongside the Google Play Billing System (GPBS).

Probe Initiation:

- The CCI's investigative wing will conduct the probe and submit a report within 60 days.
- The CCI noted that home grown app developers are aggrieved by Google's updated payment policies related to its Google Play Store.

Service Fee Concerns:

- According to the CCI order, Google's service fee for both GPBS and ABS substantially exceeds its cost of providing the services.
- The order suggests that Google is charging app developers 4 to 5 times its cost, which appears disproportionate to the economic value of the services rendered.
- This is viewed as an abuse of dominant position by Google, as per the CCI order.

Recent Actions:

- In early March, Google started delisting various Indian apps from its Play Store for failing to comply with UCB.
- These apps were 'temporarily' reinstated after government intervention, pending an appeal by homegrown app developers in the Supreme Court.
- The appeal by local app developers is related to the commission charged by Google for in-app purchases.
- Internet apps approached CCI and alleged that UCB was GPBS in a newer avatar and was in violation of the antitrust body's earlier order.

Previous CCI Ruling:

- In October 2022, the CCI ruled against Google's anti-competitive practices concerning its Play Store policies and imposed a penalty of over ₹936 crore.
- Following this ruling, Google allowed third-party billing for in-app purchases.
- The CCI's probe into Google's UCB system aims to investigate allegations of anticompetitive behavior and unfair practices, particularly concerning the fees charged to app developers. This investigation adds to the ongoing scrutiny of tech giants' market practices in India.

Google Play Billing System (GPBS):

- The Google Play Billing System (GPBS) is the default billing system provided by Google for app developers on the Google Play Store.

- When users make purchases within apps (such as for premium features, subscriptions, or digital content), the GPBS handles the transaction process. With GPBS, Google typically charges a service fee to developers for processing these transactions. The fee can range from 10% to 30%, depending on various factors such as the type of transaction and the region.

Alternative Billing Systems (ABS) / User Choice Billing System:

- In contrast to the GPBS, alternative billing systems (ABS) offer app developers the option to integrate their own payment systems or third-party payment gateways within their apps.
- This allows developers to manage transactions directly, bypassing Google's default billing system, however, under which apps could offer other payment methods such as UPI, credit cards and net banking but this method also attracted a commission rate of 11-26%.

Competition Commission of India

- The Competition Commission of India (CCI) is a regulatory body established by the Government of India to enforce the Competition Act, 2002.

Overview:

- Establishment: The CCI was constituted in March 2009 as a statutory body responsible for promoting and sustaining competition in markets, preventing anti-competitive practices, and protecting the interests of consumers.
- Repeal of MRTP Act: It replaced the Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act), following the recommendations of the Raghavan Committee.

Composition:

The Commission is composed of:

- One Chairperson
- Six Members
- These members are appointed by the Central Government.
- The Chairperson and Members are whole-time members of the Commission.

Competition Act, 2002:

- Purpose: The Competition Act, 2002, was enacted to promote competition, prevent anti-competitive practices, and ensure fair trade practices in India.

Prohibitions:

- Anti-Competitive Agreements: The Act prohibits agreements that significantly affect competition.
- Abuse of Dominant Position: It regulates entities that hold a dominant position in a market to prevent abuse of such position.
- Combinations: The Act regulates mergers, acquisitions, and combinations that may have an adverse impact on competition.

Establishment of CCI and Competition Appellate Tribunal:

- The Act led to the establishment of the Competition Commission of India (CCI) as the primary regulatory authority.
- It also established the Competition Appellate Tribunal (COMPAT) for hearing appeals against the decisions of the CCI.

Amendments:

- The Act was amended in 2007 by the Competition (Amendment) Act to further strengthen competition regulations.

Replacement of COMPAT with NCLAT:

- In 2017, the Government replaced the Competition Appellate Tribunal (COMPAT) with the National Company Law Appellate Tribunal (NCLAT).
- The Competition Commission of India plays a crucial role in promoting fair competition, protecting consumer interests, and ensuring a level playing field for businesses operating in India's markets.

Topic 21. SEBI RELAXES FPI DISCLOSURE NORMS

Important for the subject: Economy

Exemption for Foreign Portfolio Investors (FPIs):

Sebi has exempted certain Foreign Portfolio Investors (FPIs) from the additional disclosure framework.

- This relief applies to FPIs that have more than 50% of their Indian assets under management (AUM) within a single corporate group.
- The exemption is provided for FPIs with concentrated holdings in a listed company with no identified promoter, subject to certain conditions.

Relaxation of Timelines for Disclosure:

- Sebi has approved a proposal to relax the timelines for the disclosure of material changes by FPIs.

- Currently, FPIs are required to disclose material changes within seven working days.
- The new provision allows a minimum period of 180 days or the end of the registration block, whichever is later, for the disposal of securities in case of adverse changes in compliance status or non-submission of documents for reclassification.

Disposal of Securities:

- If securities held by an FPI are not disposed of after the specified 180-day period, an additional 180 days will be provided.
- However, a financial disincentive of 5% of the sale proceeds will be credited by the custodian to Sebi's Investor Protection and Education Fund.
- Securities remaining unsold after the additional period will be deemed to have been compulsorily written off by the FPI.

Launch of Beta Version of T+0 Settlement:

- Sebi has approved the launch of a beta version of the optional T+0 settlement for a limited set of 25 scrips and with a limited set of brokers.

Changes in Public/Rights Issue of Equity Shares:

- Sebi has decided to eliminate the requirement of a 1% security deposit in public/rights issues of equity shares.
- Additionally, flexibility will be provided to extend the offer closing date due to force majeure events.

Foreign Portfolio Investors (FPIs): An Overview

- Foreign Portfolio Investment (FPI) refers to investments made by foreign entities in financial assets such as stocks, bonds, mutual funds, and other securities of a country's financial markets.
- Unlike Foreign Direct Investment (FDI), FPI does not involve acquiring a substantial ownership stake or control in the invested entity. Instead, it represents a passive investment approach to earn returns from capital appreciation and dividends.

Characteristics of FPI:

- **Passive Ownership:** FPI involves holding financial assets without seeking to actively control or influence the management of the invested companies. Investors rely on the performance of the assets for their returns.
- **Liquidity and Volatility:** FPI investments are relatively liquid, meaning they can be easily bought or sold in the financial markets. However, this liquidity also makes FPIs more susceptible to market volatility and changes in investor sentiment.

- **Diversification:** FPI allows investors to diversify their portfolios across different countries, industries, and asset classes. This diversification helps spread risk and potentially improve returns.
- **Financial Instruments:** FPIs can invest in a variety of financial instruments, including but not limited to:
- **Stocks:** Ownership shares of publicly traded companies.
- **Bonds:** Debt securities issued by governments or corporations.
- **Mutual Funds:** Pooled investment funds managed by professionals, investing in a diversified portfolio of assets.
- **Exchange-Traded Funds (ETFs):** Funds that are traded on stock exchanges and represent a basket of securities.
- **American Depositary Receipts (ADRs) and Global Depositary Receipts (GDRs):** Certificates representing ownership of shares in foreign companies traded on stock exchanges outside their home country.

Role in the Economy:

- FPIs play a crucial role in providing liquidity to financial markets, helping to facilitate price discovery and efficient allocation of capital.
- They contribute to the overall depth and breadth of financial markets, making them more attractive to domestic investors and businesses.
- FPIs can bring in foreign currency, which can contribute to a country's foreign exchange reserves and support the stability of its currency.

“Hot Money” and Risk Considerations:

- FPIs are often termed as “hot money” due to their tendency to move swiftly in and out of markets based on economic conditions, interest rates, geopolitical events, and other factors.
- This rapid movement can lead to increased market volatility and potential risks for domestic markets, especially during times of economic uncertainty or market stress.

SEBI's FPI Disclosure Norms:

Additional Disclosures:

- **Criteria for Disclosure:** SEBI requires Foreign Portfolio Investors (FPIs) holding more than 50% of their Indian equity Assets Under Management (AUM) in a single Indian corporate group or having over Rs 25,000 crore of equity AUM in the Indian markets to provide additional details.
- **Purpose of Disclosure:** The aim is to enhance transparency and oversight, particularly for FPIs with concentrated holdings that could potentially impact the market.

Alignment with PN3 Concerns:

- Press Note 3 (PN3) Context: While PN3 does not directly apply to FPI investments, SEBI is cautious about potential misuse of the FPI route.
- Importance of Additional Disclosures: SEBI views obtaining detailed information from FPIs as crucial to address concerns of market disruption, regulatory circumvention, and ensure the protection of Indian securities markets.
- SEBI's move to require additional disclosures from FPIs reflects a proactive approach to enhance transparency, mitigate market risks, and align foreign portfolio investments with regulatory objectives in India's securities markets.

Press Note 3 (2020)**Context:**

- Press Note 3 (2020) was introduced by the Union government during the Covid-19 pandemic as an amendment to the Foreign Direct Investment (FDI) policy.

Objective:

- The primary aim was to address concerns related to opportunistic takeovers and acquisitions of stressed Indian companies at potentially undervalued prices.

Key Provisions:**Government Route Mandate:**

- Entities from countries sharing a land border with India or where the beneficial owner of an investment is situated or is a citizen of such countries were required to follow the Government Route for investments.

Investment Routes:

- Government Route: This route involves obtaining official approval from regulatory bodies for foreign investments. It is typically used for sensitive sectors or investments of strategic importance.
- Automatic Route: Under this route, investments can be made without prior approval, particularly in sectors where foreign participation is encouraged, and the investment does not pose significant regulatory concerns.

Change in Beneficial Ownership:

- The Press Note also specified that any transfer of ownership, whether existing or future Foreign Direct Investment (FDI), directly or indirectly, resulting in the beneficial ownership falling within the purview of the amended policy, would require government approval.

Enforcement:

- Press Note 3 (2020) was enforced through the Foreign Exchange Management (Non-Debt Instruments) Amendment Rules 2020.

Current Status:

- As of January 2024, Press Note 3 (2020) remains enforceable, indicating that the government's regulations regarding FDI from border-sharing countries are still in effect.

Implications and Significance:

- **Safeguarding Indian Interests:** The introduction of Press Note 3 aimed to protect Indian companies, particularly those in distress during the pandemic, from potentially unfavorable takeovers.
- **Enhanced Regulatory Oversight:** By mandating the Government Route for investments from specific countries, the government sought to ensure closer scrutiny and approval for investments in critical sectors.
- **Preventing Undervalued Acquisitions:** The requirement for government approval in cases of change in beneficial ownership aimed to prevent acquisitions or transfers at prices considered undervalued or detrimental to Indian interests.

Investor Protection and Education Fund (IEPF)

- The Investor Protection and Education Fund (IEPF) is a fund established by the Securities and Exchange Board of India (SEBI) for the protection of the interests of investors in the Indian financial market. It serves as a mechanism to safeguard the rights of investors and educate them about various aspects of investing.

Purpose of IEPF:

The primary objectives of the Investor Protection and Education Fund are as follows:

- **Investor Protection:** The fund aims to protect the interests of investors, particularly small investors, in securities markets. It provides a mechanism for compensating investors who have suffered losses due to defaults or fraudulent activities by companies or market intermediaries.
- **Education and Awareness:** Another key objective is to educate investors about their rights and responsibilities. The fund supports initiatives and programs that promote investor education, financial literacy, and awareness about market risks.

Sources of Funding:

The IEPF is funded through various sources, including:



- **Unclaimed Dividends:** One of the primary sources of funding for the IEPF is unclaimed dividends. When dividends declared by companies remain unclaimed by shareholders for a specified period, they are transferred to the IEPF.
- **Unclaimed Shares:** Similarly, shares that are unclaimed by investors for a certain period, such as in cases of demat accounts with no activity, are transferred to the IEPF.
- **Refunds from SEBI:** Any fines, penalties, or disgorgements collected by SEBI from market participants may also contribute to the IEPF.

Topic 22. EV POLICY PAVES WAY FOR TESLA ENTRY

Important for the subject: Economy

The Union government of India has announced a new Electric Vehicles (EV) policy that includes a significant reduction in import duties for certain electric vehicles.

- This move is aimed at encouraging global EV manufacturers, such as Tesla, to invest in setting up manufacturing facilities in India.

Key Points of the New EV Policy:

Reduction in Import Duties:

- Under the new policy, completely built-up (CBU) electric cars can be imported at a reduced import duty of 15%.
- This is a substantial decrease from the previous import duty rates of 60% or 100% for completely built-up cars.
- Tesla, among other global EV manufacturers, had requested import duty reductions ranging from 15% to 40% on fully assembled cars, based on their price.

Criteria for Reduced Import Duty:

- The new policy allows EV passenger cars (e-4W) to be imported with a minimum Cost, Insurance, and Freight (CIF) value of \$35,000.
- This reduced duty rate of 15% will apply for 5 years from the date of issuance of approval by the Ministry of Heavy Industries.
- There is a cap of 8,000 on the number of EVs that can be imported at the reduced rate, with the option to carry over unutilized annual import limits.

Minimum Investment Requirement:

- In order to avail the duty concessions, manufacturers are required to invest a minimum of ₹4,150 crore in setting up manufacturing facilities in India.

- The manufacturing facilities must become operational within 3 years from the date of issuance of approval by the Ministry.
- Manufacturers must achieve a minimum Domestic Value Addition (DVA) of 25% within the initial 3-year period, and 50% DVA within 5 years.

Promoting EV Manufacturing in India:

- The government emphasized that the scheme aims to promote the manufacturing of electric vehicles in India.
- The EV sector is expected to grow significantly within the Indian automotive industry in the coming years.
- India is currently the world's third-largest automobile market and one of the fastest-growing automotive markets.

Opportunity for Global Transition to EVs:

- India sees itself as having the opportunity to lead the global transition from conventional internal combustion engine vehicles to more efficient and decarbonized EV technology.
- The automotive sector in India contributes over 7.1% to the country's GDP and is expected to grow substantially, with a projected market size of ₹24.9 lakh crore by 2030.
- The new EV policy is part of India's efforts to promote sustainable and environmentally friendly transportation solutions while also boosting the domestic manufacturing sector and creating employment opportunities.

Key government initiatives in India aimed at promoting the adoption of Electric Vehicles (EVs):**Faster Adoption and Manufacturing of Electric Vehicles (FAME) Scheme II:**

- Provides incentives for EV manufacturers and buyers.
- Incentives include subsidies, tax rebates, preferential financing, and exemptions from road tax and registration fees.

National Electric Mobility Mission Plan (NEMMP):

- Sets targets to achieve 6-7 million sales of hybrid and electric vehicles annually from 2020 onwards.
- Provides fiscal incentives to encourage adoption.

National Mission on Transformative Mobility and Battery Storage:

- Aims to create a comprehensive ecosystem for EV adoption.

- Supports the establishment of large-scale battery manufacturing plants in India.

Production Linked Incentive (PLI) Scheme:

- Offers incentives for the manufacturing of electric vehicles and related components.
- Designed to boost domestic production and make EVs more affordable.

Vehicle Scrappage Policy:

- Provides incentives for the scrapping of old vehicles.
- Encourages the purchase of new electric vehicles as replacements.

Go Electric Campaign:

- Aims to raise awareness about the benefits of EVs among the public.
- Focuses on promoting EV adoption and the development of EV charging infrastructure.

Support for Global EV30@30 Campaign:

- India is among the countries supporting the global EV30@30 campaign.
- The goal is to achieve at least 30% new vehicle sales being electric by 2030.

Charging Infrastructure Development:

- The Ministry of Power has issued revised guidelines on charging infrastructure.
- Mandates the presence of at least one charging station within a 3 km grid and every 25 km along highways.

EV Charging Facilities in Buildings:

- The Ministry of Housing and Urban Affairs has amended the Model Building Bye-laws, 2016.
- Requires 20% of parking spaces in residential and commercial buildings to be allocated for EV charging facilities.

Topic 23. BANKING CRISIS AFTERMATH: CONSIDERATIONS FOR STRENGTHENING BANKING SECTOR***Important for the subject: Economy***

A banking crisis involving Credit Suisse occurred a year ago.

Government-sponsored rescue of Credit Suisse and U.S. bank salvages in March 2023.

Current Situation:

- Regulators and lawmakers are beginning to address concerns.

- Top global financial watchdog warned Switzerland to strengthen banking controls due to the risk posed by UBS.

Key Weaknesses Identified:

- Banks' liquidity requirements found insufficient.
- Liquidity Coverage Ratio (LCR) is crucial for banks' ability to meet cash demands.

Proposed Changes and Debates:

- European regulators discussing shortening the period of acute stress for measuring banks' buffers.
- Potential for banks needing to hold higher levels of liquid assets, potentially increasing funding costs.
- Industry-wide changes expected in Europe next year, including final implementation of post-financial crisis rules (Basel III).

ECB Scrutiny and Central Bank Role:

- ECB intensifies scrutiny of liquidity buffers of individual banks to prevent rapid runs.
- Focus on making emergency loans widely available and examining collateral requirements.
- The ongoing discussions and proposed changes aim to enhance banks' resilience against rapid deposit outflows and liquidity stress, ensuring financial stability and preventing crises like those involving Credit Suisse.

Liquidity Coverage Ratio (LCR):

- The liquidity coverage ratio (LCR) is the ratio of highly liquid assets held by financial institutions. It ensures their ability to meet short-term obligations, acting as a stress test for market-wide shocks.

Basel III Reforms and LCR Implementation:

- Introduced as part of the Basel III reforms post-2008 financial crisis.
- Finalized by the Basel Committee on Banking Supervision in January 2013.
- LCR formula: $LCR = \frac{\text{High-Quality Liquid Asset Amount (HQLA)}}{\text{Total Net Cash Flow Amount}}$

Indian Framework for LCR:

- India's framework for LCR requirements issued on June 9, 2014.
- Phased implementation from January 1, 2015, with minimum mandatory requirements starting at 60%.

- Gradually increasing to 100% by January 1, 2019.

High-Quality Liquid Assets (HQLA):

- HQLAs are assets quickly convertible to cash with no significant loss of value. Three categories:
- **Level 1:** Includes coins, banknotes, central bank reserves, and marketable securities.
- **Level 2A:** Securities issued/guaranteed by specific sovereign entities or multilateral development banks.
- **Level 2B:** Investment-grade corporate debt and publicly-traded common stock.

Importance of LCR for Banks:

- Promotes short-term resilience against liquidity disruptions.
- Ensures banks have sufficient HQLAs to survive acute stress scenarios lasting 30 days.
- Banks must hold HQLAs equal to expected total net cash outflows over the stress period.

Limitations of LCR:

- Requires banks to hold more cash, potentially leading to fewer loans issued.
- Increased cost of maintaining fund ratio could impact lending and economic growth.
- Banks' cost of lending increases due to the need to cover fund ratio costs.
- The Liquidity Coverage Ratio is a critical measure ensuring banks' ability to weather short-term liquidity disruptions while balancing the need for lending and financial stability.

Topic 24. SHRINKING BOARD SIZES AND CORPORATE GOVERNANCE: KEY INSIGHTS***Important for the subject: Economy*****Trend in Board Size:**

In recent years, corporate boards are facing scrutiny over governance issues, leading to a trend of shrinking board sizes.

- A new report by Excellence Enablers, backed by former SEBI Chairman M Damodaran, reveals the evolution in board sizes.
- In FY18 and FY19, the range of board members varied from 4 to 22, but by FY23, the maximum board size has reduced to 16.

Committee Requirements:

- With the mandatory establishment of five board committees, it is crucial to have an adequate number of members for effective functioning.
- The aim is to ensure proper constitution of committees, avoiding scenarios where the same members serve on multiple committees.

Definition of Good Governance:

- The essence of good corporate governance lies in doing the right things, at the right time, and for the right reasons.
- Entities that proactively practice good governance for stakeholder interests often influence the creation of laws and regulations.

Companies Act, 2013:

- Section 149 (1) of the Companies Act, 2013, mandates a board of directors with specific minimum and maximum director requirements.
- Public companies must have a minimum of three directors, private companies require a minimum of two, and one-person companies need at least one director.
- The Act sets the maximum limit for directors at fifteen, with additional provisions for independent directors in listed public companies.

Optimal Board Composition:

- Effective boards often boast a balanced mix of executive and non-executive directors, providing diverse insights and experiences.
- The report emphasizes the importance of this mix for better decision-making and governance effectiveness.

Concerns on Combined Roles:

- The report raises concerns about combining the roles of Chairman and MD/CEO, which may compromise corporate governance principles.
- When both positions hold executive responsibilities, it could hinder the oversight and checks expected in good governance practices.

Non-Mandatory Separation:

- It is noted that the separation of Chairperson and MD/CEO roles is not mandatory, posing challenges for maintaining governance standards.
- The report highlights the need for this separation to ensure adequate checks and balances within corporate structures.

Conclusion:

- As corporate governance continues to evolve, the focus on board sizes, composition, and role separation remains crucial.
- The ongoing scrutiny underscores the importance of aligning board structures with best practices to uphold transparency, accountability, and stakeholder interests.
- The report calls for a deeper examination of these governance aspects to drive sustainable and responsible corporate conduct.

Section 149 (1) of the Companies Act, 2013

Minimum Number of Directors:

- Every company incorporated under the Companies Act, 2013, is required to have a board of directors.
- The section specifies the minimum number of directors that different types of companies must have.

Public Company:

- In the case of a public company, the minimum number of directors required is three.

Private Company:

- For a private company, the Act mandates a minimum of two directors.

One Person Company (OPC):

- In the case of an OPC (One Person Company), which is a unique type of company designed for single entrepreneurs, the requirement is for at least one director.

Maximum Number of Directors:

- The section also provides for the maximum number of directors a company can have, setting the limit at fifteen directors.

Requirement for Independent Directors:

- Additionally, the Act stipulates that every listed public company must have at least one-third of the total number of directors as independent directors.
- This requirement ensures a level of independent oversight and governance in listed companies.
- In summary, Section 149 (1) of the Companies Act, 2013, establishes the foundation for the composition of boards of directors in Indian companies.
- It sets out the minimum and maximum numbers of directors based on the type of company, ensuring a structured and balanced governance framework. Additionally, it emphasizes the inclusion of independent directors in listed companies to enhance transparency and accountability.

Corporate Governance and Recent Controversy at NSE

- Corporate Governance encompasses a comprehensive set of rules governing the affairs of a corporation. A lapse in governance not only impacts investors but also stakeholders, the public, and the government.
- Corporate Governance as the system by which companies are directed and controlled. It involves a set of rules, practices, and processes governing a firm.
- Balancing Stakeholder Interests: Corporate Governance ensures a balance between the interests of stakeholders such as shareholders, management, customers, financiers, and the community.
- Ethical Business Conduct: It ensures that business operations are ethical, compliant with laws, regulations, and industry best practices.

Structure of Corporate Governance in India

- **Companies Act 2013:** Provides a formal structure with provisions for Independent Directors, Board Constitution, General and Board Meetings, Audit Committees, etc.
- **Other Legislations:** Acts like the Competition Act 2002, Foreign Exchange Management Act 1999, and Industries (Development and Regulation) Act 1951 impact corporate governance.
- **SEBI Guidelines:** Mandates adherence to best practices through various guidelines for investor protection.
- **ICAI Accounting Standards:** Accounting standards and mandatory financial disclosures are issued by the ICAI.
- **Listing Agreement:** Stock exchanges have listing agreements with detailed provisions on audits, disclosures, and annual statements.
- **ICSI Secretarial Standards:** Standards on board and general meetings issued by the ICSI also contribute to governance.

Committees for Improving Governance

- **Rahul Bajaj Committee (1995):** Developed the 'Desirable Corporate Governance' code.
- **Kumar Mangalam Birla Committee (2000):** Focused on investor protection and transparency.
- **Naresh Chandra Committee (2002):** Covered corporate audits and auditor-company relationships.

- **Narayana Murthy Committee (2003):** Reviewed and recommended improvements in corporate governance.
- **Uday Kotak Committee (2017):** Proposed measures to enhance governance, including gender diversity on boards.

Conclusion

- Robust Corporate Governance is essential for restoring trust, preventing scams, and ensuring investor protection. India needs a concerted effort to enhance governance practices, making them inclusive, efficient, consensus-oriented, and rule-based. These steps are crucial for fostering a healthy corporate environment and attracting both domestic and foreign investments.

Uday Kotak Committee Recommendations on Corporate Governance:

- The Uday Kotak Committee, constituted by SEBI, focused on improving Corporate Governance practices.

Its mandate included:

- **Independence of Independent Directors:** Enhancing the independence and active involvement of independent directors in the company's functioning.
- **Related Party Transactions:** Improving safeguards and disclosures concerning related party transactions.
- **Investor Participation:** Addressing issues faced by investors regarding voting and participation in general meetings.
- **Board Evaluation:** Enhancing the effectiveness of board evaluation practices.
- **Disclosure and Transparency:** Suggesting measures to improve disclosure and transparency practices.

Key Recommendations

Separation of Roles:

- **Chairman and MD Roles:** Listed firms should separate the roles of Chairman and Managing Director. Chairmanship should be limited to non-executive directors only.

Minimum Board Strength:

- **Board Size:** Increase minimum board size to 6 members.
- **Gender Diversity:** At least one woman to be appointed as an independent director.

- **Board Meetings:** Listed firms should conduct at least five board meetings annually (up from the current four).
- **Discussion Topics:** The board should discuss succession planning and risk management at least once a year.

Independent Directors:

- **Proportion:** At least half of the board members should be independent directors in listed companies.
- **Attendance:** All directors must attend at least half of the board meetings.
- **Age Limit:** Public shareholders' approval required for non-executive directors above 75 years of age.

Shareholder Meetings and Disclosures:

- **Webcasting:** Top 100 firms by market capitalization should webcast shareholder meetings.
- **Cash Flow Statements:** All listed firms should disclose cash flow statements every six months.
- **Quarterly Earnings:** Mandatory disclosure of quarterly consolidated earnings by listed firms.

Credit Ratings:

- **Transparency:** Listed entities should provide an updated list of all credit ratings obtained in one accessible place for investors.

Minimum Remuneration:

- **Independent Directors:** Minimum remuneration of Rs 5 lakh per annum.
- **Board Meeting Fees:** Sitting fee of Rs 20,000-50,000 for each board meeting.
- **Approval:** Public shareholders' approval required for annual remuneration of executive directors from promoter families exceeding specified limits.

Risk Management and IT Committee:

- **Cyber Security:** Top 500 listed companies should have a risk management committee focused on cyber security.
- **IT Committee:** Listed entities must constitute an IT committee focusing on digital and technological aspects.
- These recommendations aim to strengthen governance, enhance transparency, and align practices with global standards, ultimately benefiting investors and ensuring sustainable corporate growth.

Topic 25. INDIA'S PROPOSAL ON MORATORIUM ON CUSTOMS DUTIES FOR E-TRANSMISSIONS***Important for the subject: Economy***

The moratorium on customs duties for e-transmissions has been receiving temporary extensions at the World Trade Organisation (WTO) since 1998.

- India aims to redefine the scope and definition of this moratorium, particularly regarding digitized goods like e-books, e-music, and video games.

Recent Developments:

- At the 13th WTO ministerial conference in Abu Dhabi, India agreed to a two-year extension of the moratorium.
- However, India indicated that further extensions may require a consensus on the scope, definition, and impact on development.
- The country wants discussions to continue at the WTO general council to reach an agreement before the current extension ends.

Need for Reexamination:

- India, along with developing countries like South Africa, emphasizes the need to reexamine the moratorium.
- The global e-commerce sector has evolved significantly since its introduction, with many physical goods now digitized.

Scope of the Moratorium:

- India argues that the moratorium should apply to the transmission of signals rather than the content itself.
- The goal is to clarify what exactly the moratorium would cover to make an informed decision before the current extension expires in March 2026.

Urgency of Discussion:

- The official emphasizes the need for serious discussions at the general council to avoid delays.
- With the digital revolution ongoing and technologies like additive manufacturing, data analytics, and AI expanding, the implications of the moratorium need re-evaluation.

Balancing Concerns:

- While the extension of the e-transmission moratorium has been linked to the moratorium on non-violation and situation complaints (NVSCs) under the TRIPS Agreement, India stresses the greater benefits of clarifying the e-transmission moratorium.

- The potential gains for developing countries outweigh concerns about the lapse of the NVSC moratorium.

Conclusion:

- India seeks a thorough discussion at the WTO general council to define the moratorium's scope, considering the evolving digital landscape.
- The country aims to ensure a balanced approach that supports digital innovation while addressing concerns about customs duties on digitized goods.

Non-Violation and Situation Complaints (NVSCs) under the TRIPS Agreement**Background:**

- The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is an international agreement administered by the World Trade Organization (WTO).
- It sets down minimum standards for many forms of intellectual property (IP) regulations.

Non-Violation Complaints:

- NVSCs are a unique feature of the TRIPS Agreement.
- They are complaints brought to the WTO when a member believes that another member's actions have nullified or impaired benefits that it would have reasonably expected to accrue to it.
- These complaints can be filed even if the actions of the accused member do not violate specific provisions of the TRIPS Agreement.

Situation Complaints:

- Situation complaints are similar to non-violation complaints but are related to situations where there is no violation of the specific rules of the agreement.
- Instead, a member claims that another member's actions or policies have created a situation that nullifies or impairs benefits that would otherwise be accrued under the agreement.

Key Aspects**Legal Basis:**

- NVSCs are based on the understanding that the TRIPS Agreement should not just prevent violations but also address situations where the essence of the agreement is undermined.
- They are not about proving a violation of the TRIPS Agreement but about addressing instances where the expected benefits of the agreement are nullified.

Scope of Complaints:

- NVSCs can cover a wide range of issues, such as changes in domestic laws or practices that have an adverse impact on the expected benefits under the TRIPS Agreement.
- They allow members to challenge actions or situations that affect the essence of the agreement, even if those actions do not constitute a clear violation of specific provisions.

Challenges:

- NVSCs have been subject to debate and controversy within the WTO.
- Some members argue that they create uncertainty in the interpretation and application of the TRIPS Agreement.
- Critics also point out that NVSCs can potentially lead to trade disputes based on abstract legal concepts rather than clear violations of agreed-upon rules.

Examples:

- A member might file an NVSC if another member introduces new IP laws that, while technically compliant with TRIPS, substantially diminish the market access or economic benefits expected under the agreement.
- Another example could be a complaint about a member's use of compulsory licensing, arguing that it undermines the expected value of patent protection.
- Non-Violation and Situation Complaints under the TRIPS Agreement represent a nuanced aspect of international trade law, aiming to uphold the principles of fair trade while ensuring that the expected benefits of intellectual property protections are realized.

Topic 26. MAURITIUS: SHIFTING PERSPECTIVES ON TAXATION AND INVESTMENT

Important for the subject: Economy

From Tax Haven to Gateway**Reform Initiatives:**

- Mauritius, historically seen as a tax haven, has undertaken substantial reforms.
- Initiatives such as signing the Multilateral Instrument, abolishing the deemed foreign tax credit, and amending the Income Tax Act have reshaped its financial landscape.

Eliminating Tax Haven Image:

- Mauritius no longer fits the tax haven mold.
- Stricter regulations and transparency measures have been put in place to dispel this perception.

Gateway for Indian Investors:

- Mauritius aims to position itself as a gateway for Indian companies venturing into African markets.
- Trade agreements with 34 out of 54 African nations offer a secure investment environment for funds flowing into Africa via Mauritius.

Recent Developments and Assurance

India Business Mission:

- India Business Mission included visits to key cities, highlighting the investment potential in Mauritius.

Transparency and Compliance:

- Mauritius asserts its compliance with international standards on Anti-Money Laundering and Counter Terrorism Financing.
- The absence of shell companies and a robust regulatory framework support this claim.

International Recognition:

- The Mauritius International Financial Centre (MIFC) has received positive assessments from international bodies like the IMF, World Bank, and OECD.
- Compliance with OECD guidelines affirms Mauritius' adherence to international tax regulations.

Financial Sector Assurance

Legislative Amendments:

- Recent legislative changes include the abolition of Global Business category 2 companies.
- The deemed foreign tax credit regime has been entirely removed, aligning with global financial standards.

Fiscal Regime Evaluation:

- The Organisation for Economic Co-operation and Development (OECD) conditions for defining tax havens do not apply to Mauritius.
- The country demonstrates compliance and transparency in its fiscal practices.

MIFC: A Global Hub:

- The MIFC, under the Economic Development Board Mauritius, serves as a hub for international banks, legal firms, and investment entities.
- It provides a conducive environment for global financial operations.

Investment Strategy for Africa:

Risk Mitigation:

- Indian investors to utilize Mauritius as a strategic base for African operations.
- Direct investments in African nations may pose risks due to legal uncertainties.

Safety Through Agreements:

- Routing investments through Mauritius ensures safety, backed by trade agreements with multiple African countries.
- This strategy offers protection against potential changes in local laws and safeguards investments.

Success Stories:

- Companies like Huawei have leveraged Mauritius as a starting point for African market entry.
- The approach has resulted in sustainable growth and minimized risks for businesses operating in the region.
- In summary, Mauritius' transformation from a perceived tax haven to a trusted financial gateway presents significant opportunities for Indian investors eyeing the African market.
- The country's commitment to transparency, compliance, and strategic partnerships ensures a secure and favorable environment for international investments.
- Through Mauritius, Indian companies can access diverse African markets while mitigating potential risks and maximizing growth potential.

Tax Haven:

- A tax haven refers to a country or jurisdiction that offers foreign businesses and individuals minimal or no tax liability. It provides a politically and economically stable environment with favorable tax laws, secrecy, and confidentiality.

Characteristics:

- **Low or No Taxation:** Tax havens often impose minimal or no taxes on income, capital gains, inheritance, or corporate profits.
- **Secrecy:** They offer confidentiality and limited disclosure of financial information, protecting the identity of investors.
- **Stable Environment:** Political and economic stability is crucial to attract foreign investments seeking safe harbors.

Purpose:

- Businesses and individuals use tax havens to legally reduce their tax obligations.

- They facilitate tax planning, asset protection, and wealth management strategies.

Anti-Money Laundering (AML):

- AML refers to a set of laws, regulations, and procedures designed to prevent the illegal generation of income through criminal activities. It aims to detect and deter the process of making illegal funds appear legitimate (“money laundering”).

Objectives:

- **Detection:** Identify and monitor financial transactions to detect suspicious activities.
- **Prevention:** Implement measures to prevent criminals from using financial systems to launder money.
- **Compliance:** Ensure financial institutions adhere to AML laws by implementing robust internal controls.

Key Components:

- **Customer Due Diligence (CDD):** Verify the identity of customers and assess the risks associated with their transactions.
- **Transaction Monitoring:** Monitor transactions for unusual patterns or activities that may indicate money laundering.
- **Reporting Requirements:** Oblige financial institutions to report suspicious transactions to regulatory authorities.

Counter Terrorism Financing (CFT):

- CFT focuses on preventing terrorist organizations from raising, moving, and using funds for illicit activities.
- It complements AML efforts by targeting financial resources that support terrorism.

Objectives:

- **Disruption:** Disrupt the financial networks and funding sources of terrorist organizations.
- **Prevention:** Implement measures to prevent the use of legitimate financial systems for terrorist financing.
- **Intelligence Sharing:** Enhance cooperation between financial institutions, law enforcement, and intelligence agencies.
- In summary, tax havens offer favorable tax environments, while AML/CFT frameworks aim to safeguard the financial system from illicit activities.
- Compliance with AML/CFT regulations is essential to maintain financial integrity and prevent misuse of financial systems for criminal purposes.

Money Laundering: Overview and Methods:

- Money laundering is the process of disguising the origins of money obtained through criminal activities, making it appear as if it comes from legitimate sources.
- Criminal activities that generate illicit funds include financial fraud, drug trafficking, arms dealing, corruption, and terrorist financing.

Process of Money Laundering:

Placement (Step 1):

- Involves the initial entry of “dirty money” into the legitimate financial system.
- Criminals deposit cash obtained from illegal activities into banks, casinos, or other financial institutions.

Layering (Step 2):

- Conceals the source of the illicit funds through a series of complex transactions and layers.
- Money is moved through various accounts, countries, or financial instruments to obscure its origin.

Integration (Step 3):

- The final stage where laundered money is reintroduced into the economy.
- Criminals can use the now “clean” money for legitimate investments, purchases, or financial transactions.

Common Methods of Money Laundering:

Smurfing:

- Involves breaking down large amounts of illicit cash into smaller, less conspicuous sums.
- These smaller amounts are then deposited into bank accounts by multiple individuals (smurfs) to avoid suspicion.

Shell Companies:

- Entities with no genuine business operations used to funnel illicit funds.
- Criminals create fake invoices and financial records to make transactions appear legitimate.

Offshore Banks:

- Utilization of banks in countries with strict bank secrecy laws.
- Countries such as the Bahamas, Panama, or Singapore offer anonymity and confidentiality for account holders.

Hawala:

- A traditional and informal value transfer system used in many parts of the world.
- Operates without physical movement of money, relying on trusted networks of brokers or dealers.

Electronic Money Laundering (EML):

- Occurs through online platforms like auctions, gambling websites, or virtual gaming sites.
- Cryptocurrencies such as Bitcoin have emerged as a new frontier for money laundering due to their pseudo-anonymous nature.
- The 2015 Paris attacks were partially funded using bitcoins, highlighting the use of cryptocurrencies for illicit activities.

Topic 27. IMPACT OF ELECTION SCHEDULE ON NIFTY AND BANK NIFTY OPTIONS

Important for the subject: Economy

Historical Timing and Current Scenario:

Previous election results of 2009, 2014 and 2019 were announced in May. Election Commission announced a seven-phase schedule from April 19 to June 1, with counting on June 4.

Market Reaction and Option Prices:

- Today, sharp decline in option prices for Nifty50 and Bank Nifty May contracts across: Both call and put options (in-the-money and out-of-the-money).
- Many traders unwinding positions built on expectations of May results, adjusting options.

Analyst Insights and Market Strategies:

- Traders had created short strangles at 21000 and 24000 strikes for both June and December expiries in 2024.
- Open interest buildup indicates a preference for strategies during market uncertainty.
- Recent sideways movement affecting premiums on both sides of options.
- India's Volatility Index (VIX) closed higher at 13.59 today, down from recent peak of 15.

Conclusion:

- Swift adjustment in options market due to unexpected shift in election results date to June.
- Traders using strategies like strangle and straddle to navigate uncertain market conditions.

India's Volatility Index (VIX):

- India's Volatility Index, commonly known as VIX, is a measure of market volatility. It is also referred to as the "fear index" as it gauges investor sentiment and market uncertainty.

Calculation:

- VIX is calculated based on the prices of Nifty 50 Index options. It measures the expected volatility in the Nifty 50 Index over the next 30 days.

Interpretation:

- Higher VIX values indicate higher expected volatility and uncertainty in the market.
- Lower VIX values suggest lower expected volatility and a more stable market.

Usage:

- Investors and traders use VIX to assess market risk.
- It helps in making decisions on portfolio allocation and hedging strategies.

Straddle:

- A straddle is an options strategy where an investor buys an equal number of call and put options with the same expiration date and the same strike price.

Objective:

- The goal of a straddle is to profit from a significant price movement in the underlying stock, regardless of the direction (up or down).

Usage:

- Used when the investor anticipates a major price movement but is uncertain about the direction.
- Provides protection against potential losses in either direction.

Risk:

- The risk for a straddle is limited to the total premium paid for both the call and put options.
- Losses occur if the stock price remains relatively stable without a significant move in either direction.

Strangle:

- A strangle is an options strategy where an investor buys an equal number of out-of-the-money call and put options with different strike prices but the same expiration date.

- **Objective:** The objective of a strangle is also to profit from a significant price movement in the underlying stock, regardless of the direction.
- **Usage:** Used when the investor expects a substantial price movement but is uncertain about the direction. Provides a wider profit range compared to a straddle due to the different strike prices.
- **Risk:** The risk for a strangle is limited to the total premium paid for both the call and put options. Losses occur if the stock price remains within the range of the two strike prices at expiration.

In brief:

- Both straddles and strangles allow investors to benefit from significant price movements in a stock, regardless of direction.
- Straddles are beneficial when the direction of the stock price movement is unclear, providing protection in either scenario.
- Strangles are useful when the investor anticipates a significant movement but is unsure about the direction, offering a wider profit potential.
- Investors should consider the risks involved, including the total premium paid for the options, and understand the potential tax implications of options trading gains and losses.
- Strangle involves out-of-the-money options, offering potentially higher profits with greater risk.
- Straddle involves at-the-money options, offering a balanced risk-reward profile.

About Nifty:

- NIFTY is a market index introduced by the National Stock Exchange (NSE). The name Nifty is a blend of “National Stock Exchange” and “Fifty,” coined by NSE.

Establishment:

- Introduced in 1996 under the name CNX Nifty.
- Renamed as Nifty 50 in 2015.

Benchmark Index:

- NIFTY 50 is the flagship and benchmark-based index of NSE.
- Represents the performance of the 50 largest and most actively traded stocks listed on the NSE.

Composition:

- Consists of 50 largest companies from various sectors.
- Represents diverse sectors of the Indian economy.

Market Indicator:

- Reflects stock market trends and economic conditions.
- Often used as a barometer of the Indian equity market.

Comparison:

- One of the two main stock market indices in India.
- The other is SENSEX, a product of the Bombay Stock Exchange (BSE).

Topic 28. SIMPLIFYING CLAIMS SETTLEMENT: IEPFA'S INITIATIVE***Important for the subject: Economy***

The Investor Education and Protection Fund Authority (IEPFA) has launched an initiative to enhance the investor experience and streamline the claims settlement process.

Purpose of Initiative:

- Aimed at simplifying, expediting, and streamlining the claims settlement process.
- Intends to reimagine the refund process under the Companies Act, 2013.

Objective:

- Ensure a seamless and efficient mechanism for claiming refunds from the IEPF Authority.
- Enhance investor satisfaction and ease of access to refund.

Invitation for Comments:

- Stakeholders, including investors and industry participants, invited to provide feedback.
- Comments sought on improving the claims settlement process.

Amendments aims at: –

- **Enhanced Efficiency:** Aim to create a more efficient and responsive system for investor refunds.
- **Transparent Process:** IEPFA seeks to ensure transparency and ease of access to refund mechanisms.
- **Stakeholder Engagement:** Investors and industry participants encouraged to contribute ideas for process improvement.

Investor Education and Protection Fund Authority (IEPFA)

- The Investor Education and Protection Fund Authority (IEPFA) is a regulatory body established in 2016 under the provisions of the Section 125 of Companies Act, 2013. Entrusted with the responsibility of administering the Investor Education Protection Fund (IEPF).

Functions:

- Administers the Investor Education Protection Fund (IEPF), which includes making refunds of shares, unclaimed dividends, and matured deposits/debentures to investors.
- Promotes investor awareness and education through various initiatives.

Nodal Ministry:

- Operates under the Ministry of Corporate Affairs, Government of India.
- Key Facts about the Investor Education Protection Fund (IEPF).

Establishment:

- Established under the provisions of Companies Act, 2013.

Crediting of Amounts:

The following amounts remaining unpaid and unclaimed for seven years are credited to the IEPF:

- Amounts in unpaid dividend accounts of companies.
- Application money received by companies for allotment of securities and due for refund.
- Matured deposits and debentures with companies.

Grants and Donations:

- Receives grants and donations from the Central Government, State Governments, companies, or other institutions for the Fund's purposes.

Investments:

- The Fund invests the amounts received, and the interest or other income earned from these investments contributes to the Fund.
- The IEPFA plays a vital role in safeguarding the interests of investors and promoting investor education and awareness. It ensures that unclaimed funds are utilized for the benefit of investors and fosters transparency and accountability in the corporate sector.

Topic 29. BANK OF JAPAN RAISES INTEREST RATES AFTER 17 YEARS***Important for the subject: Economy***

In a significant move, Japan's central bank, the Bank of Japan (BOJ), has raised its benchmark interest rate for the first time in 17 years.

Policy Shift:

- The BOJ has ended its policy of negative interest rates, which were implemented to stimulate the economy.
- The lending rate for overnight borrowing by banks has been raised to a range of 0% to 0.1%, marking a departure from the previous rate of minus 0.1%.

End of Ultra-Lax Policy:

- This rate hike signifies a shift away from the ultra-lax monetary policy that has been in place for years.
- The move indicates the BOJ's confidence in the economy's recovery and its ability to sustain growth without the need for negative rates.

First Rate Hike in Years:

- The rate hike, effective immediately, is the first of its kind since February 2007.

Impact on Economy:

- The decision to raise interest rates reflects the BOJ's assessment of the economy's strength and resilience.
- It suggests a more optimistic outlook for Japan's economic recovery and the need to adjust monetary policy accordingly.

Market Response:

- The announcement of the rate hike is likely to have implications for financial markets, especially in terms of bond yields and the yen's exchange rate.
- Investors and analysts will closely monitor how the market responds to this shift in monetary policy.

Forward Guidance:

- The BOJ is expected to provide further guidance on its future monetary policy decisions.
- Clarity on the central bank's plans for interest rates and asset purchases will be crucial for market participants and economic stakeholders.

Conclusion

- Japan's decision to raise interest rates after nearly two decades marks a significant milestone in its monetary policy. The move away from negative rates signals the BOJ's confidence in the economy's recovery and its readiness to adjust policy settings accordingly.
- The impact of this rate hike will be closely watched by market participants, investors, and policymakers as Japan aims to navigate its post-pandemic economic landscape.

Understanding “Ultra-Lax Monetary Policy”

- “Ultra-lax monetary policy” refers to an approach taken by central banks to stimulate economic activity and boost growth by keeping interest rates exceptionally low or even negative.

Negative Interest Rates:

- One key feature of an ultra-lax monetary policy is the use of negative interest rates. Central banks set rates below zero, which means commercial banks are charged for holding excess reserves.

Quantitative Easing (QE):

- Central banks engage in large-scale asset purchases, such as government bonds or mortgage-backed securities, to inject money into the economy.
- The aim is to lower long-term interest rates, encourage borrowing and investment, and support asset prices.

Goal of Ultra-Lax Policy:

- The primary objective of this policy is to stimulate economic growth, especially during periods of recession or sluggish activity.
- By lowering borrowing costs, central banks aim to encourage businesses to invest, consumers to spend, and lenders to extend credit.

Challenges and Criticisms:

- While ultra-lax monetary policy can provide a boost to the economy, it also comes with risks and challenges.
- There are concerns about its impact on savers and retirees who rely on interest income.
- It may also lead to asset price inflation, creating bubbles in financial markets.

Recent Trends:

- Following the global financial crisis of 2008, many central banks, including the Bank of Japan, European Central Bank, and Federal Reserve, adopted ultra-lax policies.

- These measures were aimed at stabilizing economies, promoting recovery, and warding off deflationary pressures.

Impact on Financial Markets:

- Ultra-lax policies often lead to lower bond yields, higher stock prices, and a weaker currency.
- Financial markets closely monitor central bank announcements and policy changes for signals on future economic conditions.
- In summary, ultra-lax monetary policy is an unconventional approach used by central banks to provide stimulus to economies facing challenges such as low growth and deflationary pressures.

Topic 30. INDIA'S PURSUIT FOR LOWERING CROSS-BORDER REMITTANCE COSTS

Important for the subject: Economy

Proposal at WTO's Ministerial Conference:

India proposed lowering the cost of cross-border remittances at the WTO's 13th Ministerial Conference in Abu Dhabi.

- The proposal aims to benefit low and middle-income countries, which accounted for 78% of remittances in 2023.

Request to WTO's General Council (GC):

- India has asked the WTO's General Council to initiate a work programme for recommendations on lowering remittance costs.
- The National Payments Corporation of India is preparing a presentation for a session on 'cost of remittances' at the WTO's committee on trade in financial services in Geneva on March 25.

Highlighting the Need for Interoperability:

- India emphasized promoting interoperability and interlinkages of digital payment infrastructures for cheaper, faster, and more transparent cross-border payments.
- Global average cost for sending digital remittances is significantly lower at 4.84% compared to non-digital remittances.

Support and Interest:

- India's proposal received support from countries like Sri Lanka, Nepal, and Bangladesh at WTO MC13.

- The European Union (EU) also showed interest in the proposal.

Next Steps:

- Pursuing the matter at the WTO in various bodies, including the WTO General Council.
- Proposal for the WTO GC to call upon the council for trade in services and committee on trade in financial services for a work programme on remittances.

Objectives of the Work Programme:

- Understanding the development impact of cross-border remittances.
- Reviewing the cost, trends, and developments in remittance services.
- Analyzing the impact of technology, new market players, providers, channels, and consumer behavior.
- India's efforts aim to make cross-border remittances more efficient, affordable, and accessible, benefiting a large segment of the global population.

India's Proposal on Remittance Costs:

- India proposed to reduce the cost of cross-border remittances to less than 3%, aligning with the UN Sustainable Development Goals.
- The initiative received support from several World Trade Organization (WTO) members, except the US.

Expected Benefits:

- Lowering remittance costs could potentially boost inflows of remittances into India.
- It aims to reduce reliance on informal channels for remittance transfers.

Implications for Businesses:

- The initiative could be particularly advantageous for Indian businesses, especially those utilizing the Unified Payments Interface (UPI).
- It opens avenues for global expansion and increased competitiveness in the export market.

Remittance Statistics:

- In 2023, India received a substantial \$125 billion in remittances.
- The associated costs of these remittances were estimated to be \$7-8 billion.

Beneficiaries:

- Lowering remittance costs would directly benefit the Indian diaspora, especially migrant workers abroad.

- It would also support Micro, Small, and Medium Enterprises (MSMEs), potentially aiding their growth and competitiveness.

Understanding the Cost of Remittances:

- Remittances are financial transfers sent by migrant workers to their families or relatives in their home countries.
- The cost of remittances refers to the expenses incurred in sending money across international borders.

Components of Cost:

These costs can include various elements such as:

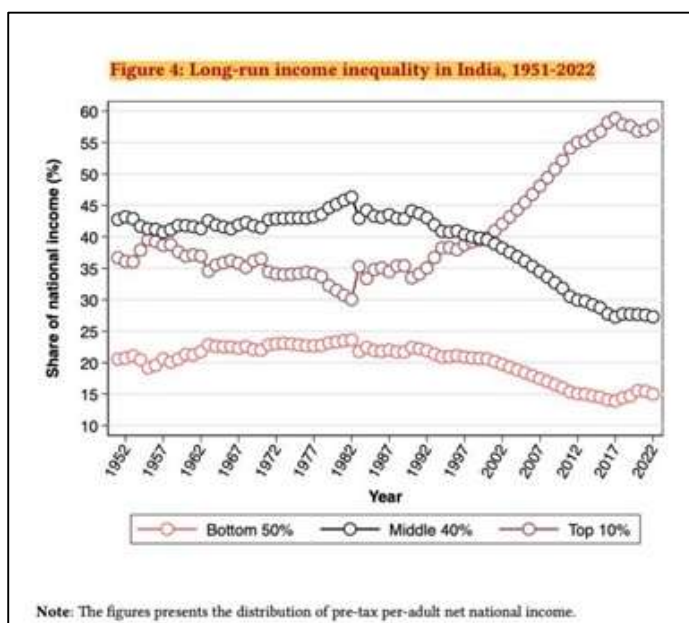
- Bank fees,
- Intermediary fees,
- Compliance fees,
- Operational costs, and
- FX (foreign exchange) rate margin.

Technological Innovations:

- Innovative technologies are emerging to reduce the total cost of cross-border transactions.
- These advancements aim to streamline processes, reduce fees, and provide more efficient and cost-effective remittance options.

Topic 31. ASPECTS OF INEQUALITY OF INDIA

Important for the subject: Economy



A new working paper, titled “Income and Wealth Inequality in India, 1922-2023: The Rise of the Billionaire Raj”, by World Inequality Lab has estimated that “inequality declined post-independence till the early 1980s, after which it began rising and has skyrocketed since the early 2000s.

- The paper, which has been co-authored by Nitin Kumar Bharti, Lucas Chancel, Thomas Piketty, and Anmol Somanchi, combines data from national income accounts, wealth aggregates, tax tabulations, rich lists, and surveys on income, consumption, and wealth to arrive at the results.

Here are the main takeaways:

Growth in average incomes

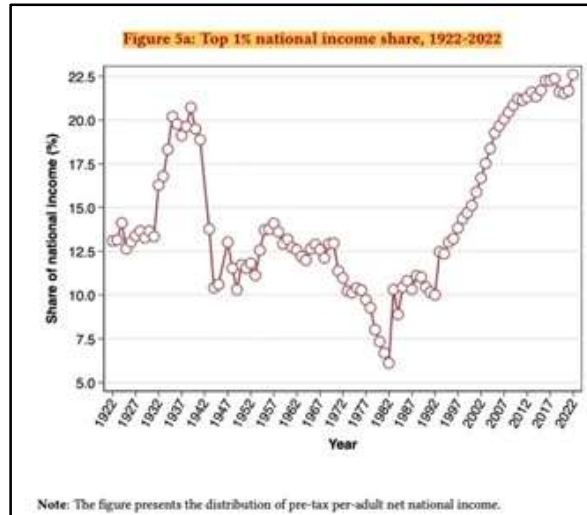
- According to the WIL paper, between 1960 and 2022, India’s average income grew at 2.6% per year in real terms (that is, after removing the effect of inflation).
- This period can be broadly divided into two halves: “Compared to a real growth rate of 1.6% per year between 1960 and 1990, average incomes grew by 3.6% per year between 1990 and 2022”.
- It further states that the periods 2005-2010 and 2010-2015 saw the fastest growth at 4.3% and 4.9% per year respectively.
- The period between 1990 to 2022 witnessed a rise in national wealth and the emergence of very high net worth individuals (those with net wealth exceeding \$1 billion at market exchange rate; this number increased from 1 to 52 to 162 in 1991, 2011 and 2022 respectively).

Rise in the percentage of income tax payers

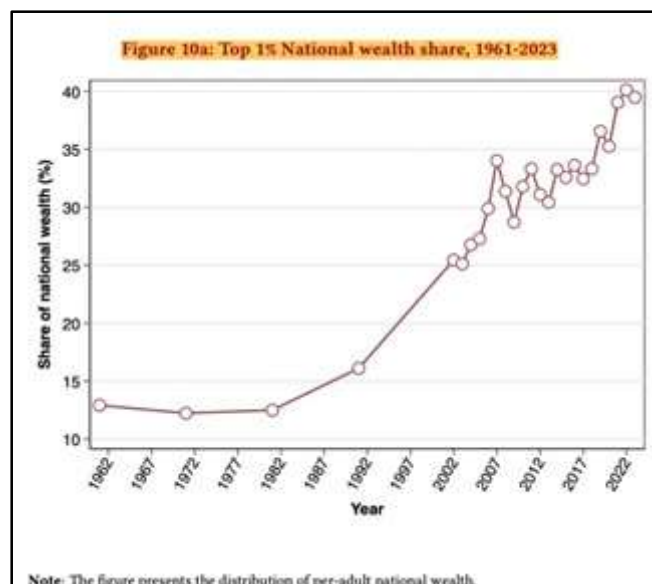
- The paper finds that the share of the adult population that filed an income tax return — which had remained under 1% till the 1990s — also grew significantly with the economic reforms of 1991.
- By 2011, the share had crossed 5% and the last decade too saw sustained growth with around 9% of adults filing a return in the years 2017-2020.

Extreme levels of inequality in India

- The paper finds that in 2022-23, 22.6% of India's national income went to just the top 1%, the highest level recorded in the data series since 1922 — this is higher than even during the inter-war colonial period.
- The top 1% wealth share stood at 40.1% in 2022- 23.



- Extreme wealth concentration at the very top
- Most of these gains came post-1991 after which point top 1% shares have been on a steep upward trend right until 2022-23.
- The wealth concentration within the top 1% as well is extreme.



International comparison of income inequality

- In the paper, the authors put India's income and wealth inequality levels (as of 2022) in global perspective by comparing India with Brazil, China, France, South Africa, United Kingdom, and the United States.
- If one looks at the income share of the top 10%, India stands second only second to South Africa.
- If, however, one compares the income share of the top 1%, India ends up having the highest levels at 22.6%.

Topic 32. INCOME AND WEALTH INEQUALITY IN INDIA

Important for the subject: Economy

Historical Highs:

India's top 1 per cent income share in 2022-23 was 6 per cent.

- The top 1 per cent wealth share rose to 1 per cent.
- India's top 1 percent income share is among the very highest globally, surpassing countries like South Africa, Brazil, and the United States.

Co-Authored Paper:

- The paper compares the current "Billionaire Raj" in India to the historical British Raj in terms of inequality.
- Co-authored by economists Nitin Kumar Bharti, Lucas Chancel, Thomas Piketty, and Anmol Somanchi.

Tax System and Wealth:

- The Indian tax system might be considered regressive when viewed from the lens of net wealth.
- The paper suggests a restructuring of the tax code.
- A levy of a "supertax" of 2 per cent on the net wealth of the 167 wealthiest families could yield 5 per cent of national income in revenues.

Public Investments:

- Calls for broad-based public investments in health, education, and nutrition.
- These investments are crucial to enable the average Indian to benefit from globalization.

Analysis of Income Data:

- Data analyzed from annual tax tabulations by Indian income tax authorities from 1922-2020.
- The top 10 per cent income share fell from 37 percent in 1951 to 30 per cent by 1982, then began rising steadily.
- By the most recent years, the top 10 percent share nearly touched 60 per cent.

Income Disparity:

- The bottom 50 per cent receives only 15 per cent of India's national income in 2022-23.
- The top 1 per cent earns on average Rs 5.3 million, which is 23 times the average Indian income.
- In contrast, the richest 10,000 individuals earn on average Rs 480 million, which is 2,069 times the average Indian income.

Distribution of Income:

- The top 0.1 per cent in India earned nearly 10 per cent of the national income in 2022.
- The top 0.01 per cent earned 3 per cent share, and the top 0.001 per cent earned 2.1 per cent of the national income.

Factors Contributing to Inequality:

- Public and private sector wage growth might have played a role till the late 1990s.
- Capital incomes likely played a role in subsequent years.
- Lack of quality broad-based education focused on the masses has kept the shares of the bottom 50 per cent and middle 40 per cent
- The paper emphasizes the need for a restructuring of the tax system, increased public investments, and addressing factors contributing to income inequality to enable broader economic benefits for all segments of society.

Topic 33. HIGHER LEVELS OF HEAVY METALS IN AREAS AROUND THE BHOPAL GAS TRAGEDY SITE: GOVERNMENT REPORT***Important for the subject: Environment***

Nearly four decades after the Bhopal gas tragedy, a report submitted to the National Green Tribunal (NGT) by the Central Ground Water Authority (CGWA) reveals heightened levels of heavy metals in groundwater near the defunct Union Carbide India Limited (UCIL) plant in Bhopal.

- Key findings from the CGWA's report include minimal zinc contamination, with only one location surpassing the Bureau of Indian Standards (BIS) acceptable limit, while arsenic

levels were generally within safe limits, barring one exception. Manganese pollution was noted in 8.33% of the sampled locations, particularly in deeper aquifers.

- The report also identified strontium concentrations, unregulated by BIS, within a significant range across sampled sites.
- Critics argue that the CGWA study inadequately addresses the full scope of contamination, neglecting pesticides, organochlorines, and other persistent organic pollutants previously detected in groundwater studies.
- Historical and ongoing research underscores the gravity of groundwater contamination outside the UCIL factory area, linking it to potential cancer risks and other health issues.
- The persistence of toxic waste on-site raises concerns over further contamination spread, as highlighted in a 2018 affidavit by an Indian Institute of Technology (IIT)-Madras professor to the Supreme Court, noting the presence of toxic chemicals known to cause significant health damage.

Bhopal Gas Leak:

- The Bhopal Gas Tragedy, also known as the Bhopal disaster, occurred on December 3, 1984, when methyl isocyanate gas leaked from a pesticide plant owned by Union Carbide India Limited in Bhopal, India.
- It is considered one of the world's worst industrial disasters.

Topic 34. BARE ACT

Important for the subject: Environment

India's legislative and regulatory framework, including the Water (Prevention & Control of Pollution) Act of 1974 and the Environmental (Protection) Act of 1986, aims to prevent the discharge of untreated industrial effluents into water bodies.

- Despite these measures and the Central Pollution Control Board's (CPCB) guidelines, the effectiveness of these regulations remains unclear due to the lack of consolidated data on the generation and treatment of industrial effluents.
- A 2021 report to the National Green Tribunal (NGT) reveals fragmented data, with significant gaps in information across various states and Union Territories.
- This incomplete picture hampers the understanding of effluent management's actual state, with large states like Maharashtra, Tamil Nadu, and Uttar Pradesh not providing comprehensive information.
- Regular inspections by State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) are mandated, yet the quality of these inspections and the enforcement of regulations are in question.



- Instances of industries, such as Malbros International in Punjab, illegally discharging untreated effluents highlight the challenges in effectively monitoring and penalizing violations.
- Efforts by the NGT to upgrade laboratories and ensure compliance have noted serious deficiencies in regulatory actions against waste management system violations.

Continuous effluent quality monitoring system (CEQMS):

- It is a real-time air and water pollution monitoring system.
- The introduction of the continuous effluent quality monitoring system (CEQMS) by CPCB in 2014, aimed at enhancing transparency and compliance through real-time pollution monitoring, has also faced issues with widespread non-compliance and data availability.
- A continuous monitoring system is comprised of sampling, conditioning, and analytical components and software designed to provide direct, real-time, continuous measurements of pollution by analyzing representative sample(s) of air and water to be monitored.
- It is an important tool for better compliance enforcement through credible pollution monitoring and reporting practices.
- If installed properly, these systems can help to get accurate and real-time data at higher frequency with minimal manual intervention in order to strengthen the pollution control regime.
- As of 2023, data from many SPCBs/PCCs is either missing or inaccessible.
- Staff shortages significantly impact the capability of pollution control boards to enforce environmental regulations effectively, with a significant percentage of sanctioned posts remaining vacant.
- The Water Pollution Act and related regulations need updating to improve transparency and data availability.
- Unlike newer regulations for other types of waste, the current legal framework does not mandate the public availability of effluent data, further obscuring the situation and preventing informed action against water pollution.

Topic 35. CENTRE CONTEMPLATING A BAN ON WOLF DOGS. BUT WHAT ABOUT THE HYBRIDS ROAMING INDIA'S WILDS?

Important for the subject: Environment

The Department of Animal Husbandry and Dairying has requested local bodies to avoid issuing licenses for the sale and breeding of certain dog breeds considered 'ferocious' and 'dangerous for human life', including wolf-dog hybrids.

Wolf-Dog Hybrids:

- Wolf-dog hybrids result from breeding wolves with certain domestic dog breeds like Akitas, German Shepherds, Alaskan Malamutes, and Huskies.
- These hybrids exhibit a mix of wild and domestic traits, becoming more wolf-like in behaviour as they mature.

Concerns and Incidents

- There have been instances in the United States of wolf-dog hybrids escaping, attacking small dogs, and threatening humans, raising questions about their breeding and sale to the public.
- Experts question the decision to list wolf dogs as problematic due to the lack of data on their breeding in India.
- Concerns are raised about the hybridization between wolves and free-ranging dogs in India's wilderness, potentially threatening native wolf populations.
- There's also a broader ethical debate against breeding animals for specific traits, which can lead to genetic defects and health issues.

Wildlife and Ethical Considerations:

- Hybridization between wolves and free-ranging dogs, termed 'Khibshang' in Ladakh, indicates the presence of wolf-dog hybrids in India's wild areas.
- Issues arise from poor pet ownership and abandonment, leading to exotic breeds mingling with street and wild canines, spreading diseases, and contributing to hybridization.
- The phenomenon of wolf-dog hybrids is not limited to any specific region but is a broader issue of concern due to potential aggression and livestock predation.

Animal Birth Control or ABC Rules:

- First introduced in 2000 by the Ministry of Culture.
- Recently replaced by the ABC rules 2023.
- The rules are issued under the Prevention of Cruelty to animal act, 1960
- The policy aims to implement a technique called 'catch-neuter-vaccinate-release' to control populations of free-ranging dogs and cats.

Provisions:

- The Rules have been formulated in accordance with the guidelines provided by the Hon'ble Supreme Court related to the Animal Welfare Board of India and People for Elimination of Stray Troubles.



- The Supreme Court has specifically mentioned in various orders that relocation of dogs cannot be permitted.
- The Rules aim to provide guidelines for the sterilisation and immunisation of stray dogs through Animal Birth Control (ABC) programmes.
- The responsibility of carrying out ABC programmes lies with the respective local bodies, municipalities, municipal corporations, and panchayats.
- The Municipal Corporations are required to implement the ABC and Anti Rabies Program jointly.
- It provides guidelines on how to deal with human and stray dog conflicts without relocating the dogs in an area.
- It also emphasises addressing the cruelty involved in carrying out ABC programmes, ensuring animal welfare.

Drawbacks of the rule:

- No benchmark has been set for the number of dogs to be sterilised.
- No proper population estimation of stray dogs by municipalities.
- ABC Rules ban the euthanasia of rabid animals, making India the only country in the world to follow such a cruel practice. The rules require rabid dogs to “die a natural death”.

Topic 36. STAR-RATING FOR STATE ENVIRONMENT BODIES NOT OPERATIONAL YET, MINISTRY TELLS NGT

Important for the subject: Environment

The Environment Ministry’s plan to implement a star-rating system to evaluate states based on their efficiency in granting environmental clearances for industrial or infrastructure projects is yet to be launched.

- This update was provided to the National Green Tribunal’s (NGT) Chennai bench, where the proposal is being challenged. The delay is due to ongoing efforts to upgrade and operationalize the website that would facilitate the ranking of State Environment Impact Assessment Authorities (SEIAAs).

About the Star-rating system:

- Introduced in January 2022.
- The star-rating system intends to rank SEIAAs based on their promptness in issuing environmental clearances, with points awarded on a scale of 0 to 7 based on the clearance time.

- The initiative is part of efforts to improve 'ease of doing business', following a Cabinet Secretary-led meeting in November 2021.
- SEIAAs issue clearances based on recommendations from Expert Appraisal Committees, which assess the environmental impact of proposed projects.

Arguments against the star-rating system:

- The star-rating system was challenged by Meenava Thanthai K R Selvaraj Kumar Meenavar Nala Sangam, a Tamil Nadu-based organization advocating for fishermen's rights.
- The challengers argue that the system could undermine the thoroughness of the environmental impact assessment process and contravene the Environment Impact Assessment (EIA) notification of 2006, which demands detailed scrutiny of project impacts.

Arguments in favour:

- The Ministry, in its defense, stated that the order is administrative, aimed at enhancing efficiency without altering the procedural or timeline requirements of the EIA notification of 2006.

What is Environmental Impact Assessment (EIA)?

- Defined by the UN Environment Programme (UNEP) as an analytical process that evaluates the potential environmental consequences of implementing a project.
- Aims to incorporate environmental considerations into decision-making processes for projects.

EIA in India:

- In India, the EIA process is mandatory for 39 categories of projects requiring an environmental clearance (EC).
- The EIA notification was first established in 1994 under the Environment (Protection) Act of 1986.
- This Act mandates environmental clearance for both the expansion and modernization of existing projects, as well as for the establishment of new projects.

Stages:

- The environmental clearance process comprises four stages, namely, Screening; Scoping; Public Consultation and Appraisal.
- The Expert Appraisal Committee (EAC) is a multi-disciplinary sectoral appraisal committee, whose primary role is to give recommendations to the MoEFCC on project proposals after considering the potential impacts of the project.

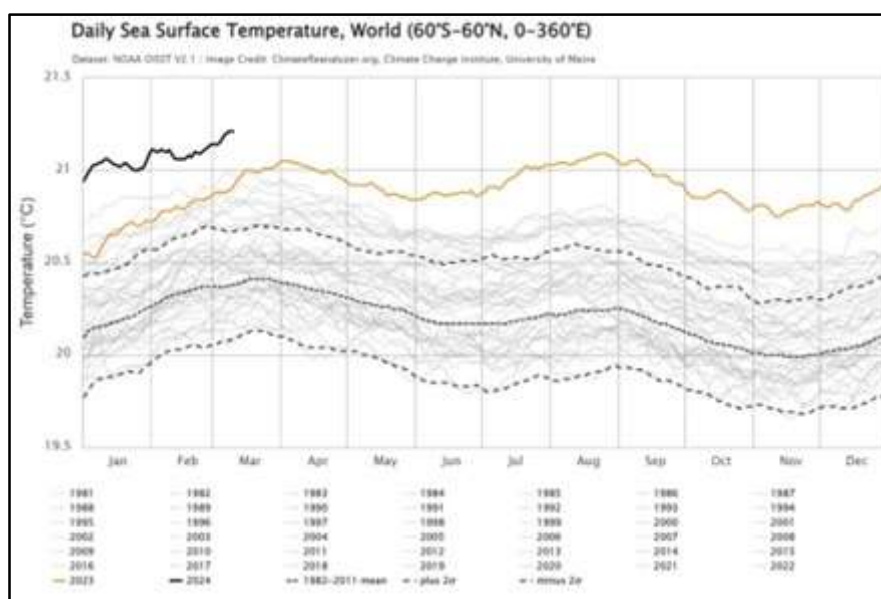
- Based on these recommendations, the MoEFCC either rejects the proposal or grants a clearance with conditions which would mitigate the impacts or compensate for the same.

Rules that Govern the EIA Process:

- To decentralize the process of project clearance, the EIA Notification 2006 has categorized the projects into Category 'A' and Category 'B' based on their impact potential.

Topic 37. WARMING UP TO CLIMATE CHANGE: WHY DO GLOBAL SEA SURFACE TEMPERATURES MATTER?

Important for the subject: Environment



The average global sea surface temperature (SST) for February 2024 stood at 21.06 degree Celsius, the highest ever in a dataset that goes back to 1979.

- The previous record of 20.98 degree Celsius was set in August 2023.
- Almost 90 per cent of the extra heat trapped by greenhouse gasses has been absorbed by the oceans, making them steadily warmer over the decades.
- Between 1982 and 2016, such heat waves have doubled in frequency and have become longer and more intense, according to a 2021 study by the UN's Intergovernmental Panel on Climate Change (IPCC).
- In 2023, the concentration of GHG reached the highest levels ever recorded in the atmosphere, according to C3S.

Graphical Representation of the sea surface temperatures:

- Since March 2023, the average daily SST has been off the charts.

- While the orange line shows 2023's temperatures, other gray lines track temperatures of previous years.
- The solid back line represents where we are so far in 2024 and it is way above any other previous year, including 2023.

Why are the oceans getting warmer?

- Carbon dioxide, methane, ozone, and nitrous oxide are some of the notable GHGs, which essentially trap heat in the atmosphere and contribute to global warming.
- As a result, the average global temperature has risen at least 1.2 degree Celsius above pre-industrial times.
- Almost 90 per cent of the extra heat trapped by GHGs has been absorbed by the oceans, making them steadily warmer over the decades.
- Apart from global warming, there are other factors which have led to a spike in ocean temperatures.
- For instance, El Niño — a weather pattern that refers to an abnormal warming of surface waters in the equatorial Pacific Ocean — has contributed to both ocean warming and rising global surface temperatures.
- There is also less dust blowing off the Sahara Desert recently due to weaker-than-average winds. The dust forms a “giant umbrella that shades” the Atlantic water and reduces ocean temperatures.
- But now, the umbrella has partially folded and more of the Sun is beating down on the ocean.

Why are rising sea surface temperatures a cause of worry?

- Higher ocean temperatures can have irreversible consequences for marine ecosystems.
- Warmer oceans lead to an increase in ocean stratification — the natural separation of an ocean's water into horizontal layers by density, with warmer, lighter, less salty, and nutrient-poor water layering on top of heavier, colder, saltier, nutrient-rich water.
- The rise in temperatures, however, has made it harder for water layers to mix with each other.
- Due to this, oceans are able to absorb less carbon dioxide from the atmosphere and the oxygen absorbed isn't able to mix properly with cooler ocean waters below, threatening the survival of marine life.
- Nutrients are also not able to travel up to the surface of the oceans from below. This could threaten the population of phytoplankton, single-celled plants that thrive on the ocean surface and are the base of several marine food webs.

- Phytoplankton are eaten by zooplankton, which are consumed by other marine animals such as crabs, fish, and sea stars.
- If the phytoplankton population plummets, there could be a collapse of marine ecosystems.
- Warmer oceans cause marine heat waves (MHWs), which occur when the surface temperature of a particular region of the sea rises to 3 or 4 degree Celsius above the average temperature for at least five days.
- MHWs are devastating for marine ecosystems as they contribute to coral bleaching, which reduces the re-productivity of corals and makes them more vulnerable to life-threatening diseases. They also impact the migration pattern of aquatic animals.
- Higher ocean temperatures may also result in more frequent and more intense storms like hurricanes and cyclones.
- Warmer temperatures lead to a higher rate of evaporation as well as the transfer of heat from the oceans to the air. When storms travel across hot oceans, they gather more water vapor and heat.
- This results in more powerful winds, heavier rainfall, and more flooding when storms reach the land — meaning heightened devastation for humans.

Topic 38. IPEF: INDIA TO JOIN US-LED CO-OPERATIVE WORK PROGRAMME ON CARBON MARKET

Important for the subject: Environment

India has decided to participate in at least one of the four cooperative work programmes under the US-led Indo-Pacific Economic Framework (IPEF), specifically focusing on carbon market activities.

- The Ministry of Power and the Bureau of Energy Efficiency will lead India's involvement in this programme.
- Additionally, India is considering joining initiatives related to clean electricity and sustainable aviation fuel but will make a final decision after a thorough evaluation.

Indo-Pacific Economic Framework (IPEF):

- Launched by US President Joe Biden in May 2022, the IPEF aims to enhance regional cooperation among 14 partners in the Indo-Pacific region.
- The 14 members of the IPEF are- Australia, Brunei, Fiji, India, Indonesia, Japan, South Korea, Malaysia, New Zealand, The Philippines, Singapore, Thailand, Vietnam, the USA
- The IPEF is not a Free Trade Agreement (FTA) but allows members to negotiate the parts they want to.

- The framework's objectives include establishing common rules and standards across four pillars: digital trade connectivity, resilient supply chains, clean energy, and fair trade.
- Notably, the IPEF does not involve tariff cuts.
- India has chosen to participate in three pillars, excluding the trade pillar.

India's Focus on Carbon Markets:

- India is actively developing its carbon markets and recently amended its carbon credits trading scheme to facilitate independent standards for carbon trading and allow non-obligated entities to generate carbon credits.
- Through its participation in the IPEF's carbon markets work programme, India aims to learn from other countries' experiences and explore the potential for standardising and integrating carbon markets internationally.

India's involvement in other programmes:

- India is evaluating its involvement in cooperative work programmes on clean electricity, led by Japan, and sustainable aviation fuel, initiated by Singapore.
- Decisions on joining these programmes will consider their relevance to India's national interests.
- The work programme on 'just transition' launched by the Philippines is also under consideration by many countries, focusing on workforce development.

Topic 39. BIHAR'S BEGUSARAI, 'WORLD'S MOST POLLUTED CITY IN 2023'; INDIA RANKS 3RD GLOBALLY: SWISS REPORT

Important for the subject: Environment

The World Air Quality Report 2023:

The report, produced by the Swiss organization IQAir, marks its 6th annual publication, offering insights into global air pollution levels.

- It emphasizes the need for local, national, and international efforts to address air quality issues, manage transboundary haze, and reduce reliance on combustion energy sources.

Key Findings:

- Begusarai in Bihar was named the most polluted metropolitan area in 2023.
- Delhi was recognized as the capital city with the poorest air quality globally.
- India ranked as the third worst country out of 134 in terms of average annual PM2.5 concentration, following Bangladesh (1st) and Pakistan (2nd).

India's Air Quality:



- Approximately 96% of India's population lives in areas where air quality is seven times worse than WHO guidelines.

Global Air Pollution status:

- About 92.5% of the 7,812 locations analyzed across 134 countries exceeded WHO's PM_{2.5} air quality guidelines.
- Columbus, Ohio, and Beloit in Wisconsin, were highlighted as polluted cities in the United States, with Las Vegas being the cleanest major US city.
- Africa is significantly underrepresented in air quality data, lacking information for a third of its population. Canada was identified for the first time as the most polluted country in Northern America.
- Seven countries (Australia, Estonia, Finland, Grenada, Iceland, Mauritius, and New Zealand) met the WHO's PM_{2.5} annual guideline.

About PM_{2.5}:

- PM_{2.5} refers to particulate matter that is 2.5 microns in diameter, posing significant health risks such as heart attacks, strokes, and oxidative stress even at modest concentrations.
- The WHO revised its PM_{2.5} guideline to recommend a yearly average of 5 µg/m³ or less, tightening from the previous guideline of 10 µg/m³.

Topic 40. INDIA'S SHARKS AND RAYS: AN ANCIENT SPECIES ON THE BRINK OF EXTINCTION

Important for the subject: Environment

A report by TRAFFIC and WWF-India have highlighted rampant shark killing and trade in eastern India, especially West Bengal, despite regional underrepresentation in seizure data.

- The TRAFFIC-WWF report, titled "Netted in illegal wildlife trade: Sharks of India," indicates nearly 16,000 kg of shark fins were seized from January 2010 to December 2022, alongside significant quantities of shark cartilage and teeth, with the illegal trade being much larger than seizures suggest.
- Northern West Bengal and adjacent Northeast India areas serve as major trafficking routes for shark body parts and other wildlife products.
- The investigation also revealed that Digha, a coastal resort town, is a hotbed for shark killing and trafficking, with monthly averages of 1,500 to 6,000 kg of sharks being trafficked, mainly to Kerala for their fins.
- Tamil Nadu leads in seizure incidents, with an estimated actual trade volume 6 to 8 times higher.

- The Wildlife Crime Control Bureau and West Bengal's forest department, while less aware, recognize the role of West Bengal and northeastern states in trafficking to international markets, notably China.
- Despite India's ban on shark finning and trade, enforcement appears lax, with significant seizures and international demand driving the illegal trade.
- Shark products are used in cuisine, cosmetics, medicine, and as curios, emphasizing the need for stronger regulatory measures and conservation efforts to protect sharks and their ecosystem roles.

India second largest shark fishing nation in the world:

- India ranks as the second largest shark fishing nation globally, following Indonesia, primarily due to bycatch in fisheries targeting other species and habitat disruptions from coastal development.
- Between 1985 and 2013, India's annual shark catch remained between 50,000 and 70,000 tonnes, despite a 64% decline in the proportion of sharks to total fishery catch.
- This indicates a significant decrease in shark populations relative to other fish, especially on the west coast, which accounts for nearly 70% of India's shark fishery.
- Notably, the collapse of fisheries can occur abruptly, as seen with the deep sea shark fishery around the Maldives, which vanished in the early 2000s after being depleted.
- India then became a supplier of liver oil from deep sea sharks like gulper sharks until this fishery too collapsed in 2009 due to diminishing catches and smaller shark sizes.
- Similarly, Tamil Nadu has witnessed an 86% decline in catches of rays such as guitar fish and wedge fishes.
- These rapid population declines are attributed to the slow growth, late sexual maturity, and infrequent reproduction of these species, leading to long recovery times or non-recovery even after fishing ceases.

Protection of sharks:

- The first shark species (and consequently the first fish species) to ever be protected in India was the whale shark which was placed under the Schedule 1 species list of the Wildlife (Protection) Act in 2001.
- Nine more species were added to this list, including the Ganges river shark (one of few freshwater and estuarine sharks in the world), the Pondicherry shark which may already be extinct and the giant guitarfish, an exceedingly rare species that is sought after for shark fin soup in Southeast Asia and China.

Topic 41. RIGHT WHALES MAY NEVER BREED AFTER RUN-INS WITH FISHING GEAR***Important for the subject: Environment***

In late January 2024, federal regulators discovered a deceased North Atlantic right whale near Martha's Vineyard, Massachusetts.

- This incident highlights the grave threat fishing gear entanglement poses to the critically endangered North Atlantic right whale population.
- Entanglement not only physically harms the whales by embedding ropes into their flesh, causing infections and impeding their ability to feed, but also significantly impacts their reproduction capabilities.
- Recent research emphasizes the devastating effects of even “minor” entanglements on female whales’ breeding potential, underscoring the critical need for innovations like ropeless fishing gear to protect this species.

Smaller females having fewer young:

- North Atlantic right whales are experiencing significant reproductive challenges, with a notable decline in the number of calves being born, and many females have not reproduced at all
- This decrease is partly due to the whales’ deteriorating health and physical condition, exacerbated by entanglements in fishing gear which have led to a decrease in adult body size over the decades.
- Smaller female whales are less likely to reproduce, contributing to low calving rates and the species’ decline.

Weak regulations:

- Current regulations aimed at protecting the North Atlantic right whales, such as the U.S. Endangered Species Act, Marine Mammal Protection Act, and Canada’s Species at Risk Act, fall short in effectively preventing all types of entanglements.
- The categorization of entanglement injuries as minor, moderate, or severe is misleading because even “minor” entanglements can significantly impact whales’ ability to reproduce successfully.
- The Marine Mammal Protection Act’s Take Reduction Plans, including measures like using weak links in fishing gear and seasonal closures of fishing areas, are designed to minimize the risk of entanglement.
- However, the research emphasizes that these measures are insufficient and that the only solution to prevent the extinction of North Atlantic right whales is to eliminate, not just mitigate, entanglements.

- Despite some stabilization in whale population numbers, the critical need remains for females to start and continue producing calves to ensure the species' survival, underlining the urgency of addressing entanglement issues comprehensively.

About the North Atlantic Right Whale:

- The North Atlantic right whale (*Eubalaena glacialis*) is a type of baleen whale.
- It belongs to the genus *Eubalaena*, which includes three right whale species, previously considered one.
- Known for its docile nature, slow surface-skimming feeding behaviours, coastal proximity, and high blubber content, which was valued by whalers for its buoyancy and oil yield.
- Historically targeted by whalers due to their desirable traits for whaling.

Conservation Status:

- Among the world's most endangered whales.
- Protected under the U.S. Endangered Species Act, Marine Mammal Protection Act, and Canada's Species at Risk Act.

Population and Migration:

- Approximately 356 individuals remain in the western North Atlantic Ocean.
- Migrate between feeding grounds in the Labrador Sea and winter calving areas off Georgia and Florida, areas with significant shipping traffic.
- In the eastern North Atlantic, with a total population in the low teens, they may be functionally extinct.

Threats:

- Major threats include vessel strikes and entanglement in fixed fishing gear.
- Nearly half of all North Atlantic right whale mortality since 1970 is attributed to these causes, significantly hindering their recovery efforts.

Topic 42. MINISTRY OF ENVIRONMENT TIGHTENS RULES ON BIOPLASTICS***Important for the subject: Environment***

The Environment Ministry has introduced stricter regulations for labelling disposable plasticware as 'biodegradable'.

- Products must meet the new standard of leaving no microplastics behind to be considered biodegradable.

- There are two main technological solutions to tackle plastic waste pollution: biodegradable and compostable plastics.
- Biodegradable plastics are treated before sale, aiming for natural decomposition, but there's a lack of tests to confirm complete degradation.
- Compostable plastics can degrade but require industrial or large municipal waste management facilities.

Microplastics:

- Microplastics, defined as solid plastic particles insoluble in water and ranging from 1 μm to 1,000 μm in size, have emerged as a significant pollutant in rivers and oceans.
- With the ban on single-use plastic in 2022, there has been a heightened focus on biodegradable plastics as an alternative.

Plastic Waste Management (Amendment) Rules, 2024: Key points

- Defines biodegradable plastics as those that can degrade biologically in environments like soil or landfill without leaving behind microplastics.
- The amendments lack specific guidance on chemical tests for establishing the absence of micro plastics or the required reduction level to deem microplastics eliminated.
- The amendment provides that the manufacture of carry bags and commodities shall be permitted to be made from compostable plastics or biodegradable plastics.
- This is subject to mandatory marking and labelling laid down under the rules and regulations of the Food Safety and Standards Authority of India (FSSAI) for food contact applications.
- The rules require the manufacturers of compostable plastic or biodegradable plastic carry bags or commodities to obtain a certificate from the CPCB before marketing or selling.
- Ensure processing of the pre-consumer plastic waste generated in the form of rejected or discarded material at the stage of manufacturing and Report to the State Pollution Control Board or Pollution Control Committee concerned.

Issues with the amended rules:

- The exact definition of biodegradable plastic remained unclear, leaving several firms, including those utilizing technologies like Symphony's, without clarity.
- The Central Pollution Control Board (CPCB) has faced criticism for not issuing 'provisional certificates' for biodegradable products, as their criteria require 90% degradation over two years, with no specific guidelines for interim assessment.
- Manufacturers showing partial degradation, such as 5% in 45 days, were denied certification due to this lack of clarity in the rules.

Rules on Plastic Waste Management so far:

- Plastic-waste management rules, 1999: Its aim was to restrict the use of plastic carry bags (thickness 20 µm or less) and prevent food from being packaged in recycled plastic.
- Plastic Waste Management (Amendment) Rules, 2003: It diluted the restriction on carry bags but mandated registration of manufacturing units with regional pollution control authorities.
- Plastic Waste Management (Amendment) Rules, 2011: For the first time, there was a national law proposing a ban on the use of plastic materials in sachets to store, pack or sell gutkha, tobacco, and pan masala.
- Plastic Waste Management (PWM) Rules, 2016: It included many progressive propositions, like 'polluter pays' and 'extended producer responsibility'.
- Plastic Waste Management (Amendment) Rules, 2021: The rules aim to prohibit the use of specific single-use plastic items, which have "low utility and high littering potential" by 2022.

Topic 43. BURKINA FASO, MALI & NIGER HINT AT A NEW WEST AFRICAN CURRENCY: WHAT IT'LL TAKE FOR IT TO SUCCEED

Important for the subject: International Relations



On 11 February 2024, General Abdourahmane Tiani, leader of Niger's military junta, proposed a new common currency for Niger, Burkina Faso, and Mali during a national TV address.

- This initiative is a step towards emancipation from colonial legacies, specifically from the CFA franc, a currency rooted in French colonization.
- These three nations, all former French colonies recently overtaken by military regimes, have also established the Alliance of Sahel States (AES) for defense purposes.
- Following military coups, the Economic Community of West African States (Ecowas) has sanctioned them, leading to their withdrawal from Ecowas, though they remain part of the West African Economic and Monetary Union (Uemoa) that uses the CFA franc.
- This currency is backed by the Banque de France under specific agreements with the BCEAO.

For a multilateral currency to function effectively, several conditions are essential:

- **Coordination of Macroeconomic and Budgetary Policies:** There must be a strict alignment of economic and budgetary policies among the participating countries. This alignment ensures currency stability and prevents trade imbalances, fostering confidence in the economy and supporting regional growth.
- **Establishment of Strong Monetary Management Institutions:** It's crucial to have robust institutions, such as a common central bank, with sufficient authority to conduct an independent and stable monetary policy. This ensures the currency's value is preserved and helps manage economic fluctuations.
- **Creation of an Integrated Common Market:** The free movement of goods, services, capital, and labor is fundamental to stimulate economic growth and enhance regional cooperation. Existing frameworks like the West African Economic and Monetary Union are beneficial in this context.
- **Implementation of Crisis Monitoring and Resolution Mechanisms:** There should be systems in place to deal with economic shocks, including common reserve funds and currency swap arrangements. Currency swaps allow for the exchange of currency amounts between two parties under agreed terms, helping to manage exchange rate risks and support cross-border financing.

Are these conditions met in Burkina Faso, Niger and Mali?

- It's difficult to say whether these conditions have been fully met in the three countries. It would mean having a firm understanding of whether these, among other, conditions have been met:
- harmonisation of government policies
- macroeconomic stability through inflation control
- limit on public debt
- maintenance of a balanced current account.

Potential Gains:

- A larger monetary zone could lead to improved trade integration and more efficient allocation of resources.
- The countries might gain more flexibility in dealings with external partners, fostering independence.
- The monetary union could reduce transaction costs and make the region more attractive to investors due to increased trade integration and independence.

Risks:

- The creation of a new currency might be perceived as a threat by the West African Economic and Monetary Union and Ecowas, potentially leading to regional tensions and the fragmentation of existing economic blocs.
- The departure of these countries could diminish the economic and political influence of West African Economic and Monetary Union and Ecowas.
- There's a risk that the new currency could depreciate against the CFA franc, negatively affecting exporters to other union countries.
- Without strong formal frameworks for controlling and managing the new currency, speculation and uncertainty about its value could arise, highlighting the need for robust institutions for its management and supervision.

Topic 44. THE FLARING CONFLICT IN EASTERN CONGO

Important for the subject: International Relations

Recent escalations in conflict in the eastern Democratic Republic of Congo (DRC) have intensified the humanitarian crisis there, with numerous fatalities and hundreds of thousands displaced due to clashes between the Congolese army and the Rwandan-supported M23 group near Goma in North Kivu province.

- The situation has escalated further with the seizure of Nyanzale by rebels, resulting in significant casualties and displacement. Accusations of Rwanda's support for the rebels have heightened tensions between Congo and Rwanda, increasing the risk of broader conflict and threatening food security for millions.
- This surge in violence coincides with the UN beginning to withdraw its peacekeepers from South Kivu province and comes after floods that left over two million people needing humanitarian assistance.

What is the conflict?

- The conflict in the eastern Democratic Republic of the Congo (DRC) traces back to the 1990s civil wars and the 1994 Rwandan genocide, where extremist Hutus killed around 800,000 ethnic Tutsis and moderate Hutus.
- Post-genocide, approximately two million people fled to the DRC, forming militias that reignited conflicts.
- These tensions led to the First Congo War, with Rwanda and Uganda supporting the Alliance of Democratic Forces for the Liberation of Congo (AFDL) to overthrow Zaire's government, renaming the country the DRC.
- The Second Congo War followed in 1998 due to fears of Rwandan annexation, involving multiple foreign armies and resulting in immense casualties and a humanitarian crisis.

- Despite numerous peace agreements, ongoing conflicts involving various groups have caused nearly six million deaths and displaced millions in the region, marking it as one of the world's deadliest conflicts since World War II.

Who are the M23 rebels, and what do they want?

- The M23 rebels, also known as the March 23 Movement, are one of over a hundred insurgent groups active in eastern Congo, primarily fighting to defend Tutsi interests against Hutu militias.
- Originating in 2012, M23 is named after a 2009 ceasefire deal where the Tutsi-led National Congress for the Defence of the People (CNDP) was to integrate into the Congolese army, a promise M23 accuses the government of failing to keep.
- This led them to seize Goma and other towns in 2012, though they were briefly pacified by a 2013 peace deal.
- Reactivating in 2022, M23 resumed attacks in North Kivu province, citing aggression from the Hutu-led Democratic Forces for the Liberation of Rwanda (DFLR), allegedly in collusion with the Congolese army.
- Their recent offensives, aimed at Goma and causing mass displacement, have intensified the region's humanitarian crisis and spurred protests demanding an end to Rwandan support for the rebels.

Tensions between Rwanda and Congo:

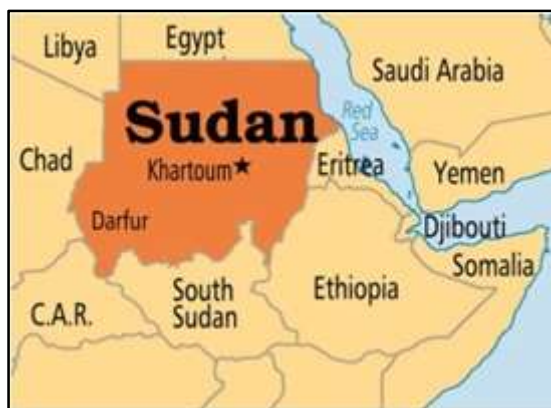
- The violence in eastern Congo has heightened tensions between the DRC and Rwanda, with the former accusing Rwanda of supporting the M23 rebels through funds, troops, and arms, a claim backed by a United Nations report but denied by Rwanda.
- Rwanda attributes the escalation to Congo's repatriation of regional peacekeepers and defends its military activities near the border as measures for national security.
- International pressure on Rwanda has increased, notably from the U.S., which condemned Rwanda's support for M23 and called for the withdrawal of its defense forces and missile systems from the DRC.
- This surge in conflict risks regional destabilization and augments the humanitarian crisis, with NGOs reporting artillery strikes on civilian areas and the consequent retreat of health and aid workers.
- The situation's severity is compounded by global attention being diverted to other international crises, raising concerns that the escalating humanitarian disaster in Congo might be overlooked.

Places in news:

- Town of Sake and Goma– in North Kivu province of Democratic Republic of Congo (DRC).
- Nyanzale- A town and a camp for Internally Displaced People (IDPs) in the Rutshuru territory of North Kivu province, Democratic Republic of the Congo.

Topic 45. OVER 50 MILLION PEOPLE MAY BE FOOD INSECURE IN EASTERN AFRICA, WARNS WFP

Important for the subject: International Relations



The World Food Programme (WFP) has issued a warning about the rapid rise in food insecurity across eastern Africa, affecting potentially 54 million people.

- Sudan (17.7 million), Ethiopia (15.8 million), and South Sudan (5.7 million) are the most affected countries.
- The causes of this crisis include conflict, climatic shocks such as drought and flooding due to erratic rainfall, inflation, disease outbreaks, lack of access to nutritious diets and safe water, and the impacts of climate change leading to violence among smallholder farmers.

Key factors for food insecurity:

- In Sudan, ongoing fighting between the Sudan Armed Forces (SAF) and the Rapid Support Forces (RSF) is exacerbating food needs.
- Ethiopia faces vulnerability to climate-induced shocks, with recent droughts affecting multiple regions. Drought has returned to Tigray, Afar, Amhara, and parts of Oromia, Southern, and Southwest regions, causing severe suffering.
- South Sudan is experiencing acute food insecurity worsened by the arrival of returnees and refugees from Sudan and Ethiopia.
- The region is also dealing with a large number of internally and internationally displaced people, totalling approximately 23.4 million, including 5 million refugees and asylum seekers and 18.4 million internally displaced persons.

- However, the WFP anticipates food insecurity to remain stable into the second quarter of 2024, thanks to improved weather conditions and the effects of the lean season.
- The United Nations Food and Agriculture Organization predicts positive effects on crop production due to two consecutive wetter-than-normal seasons, which should aid the region's recovery from the 2020-2023 drought, increase market supply, and lower food prices.
- Despite these hopeful signs, the northern part of the region is expected to face dry weather conditions, heat stress, and water and pasture deterioration during the March-May period.
- This will impact livestock body condition, production, and market value, further influencing food security.
- The WFP recommends ongoing monitoring of food insecurity causes for timely early warning and action.

Topic 46. MAINTAINING MARITIME SECURITY IN THE WESTERN INDIAN OCEAN

Important for the subject: International Relations



The EU's maritime security force against piracy, Operation Atalanta, confirmed Wednesday the hijacking of a Bangladeshi-flagged bulk carrier with 23 people on board while sailing in Somali waters.

- Since 1 January 2023, the designation of the Indian Ocean High Risk Area (HRA) put in place by the shipping industry has been rescinded, due to the improved piracy situation in the region.

- IMO continues to support signatory States to implement the Djibouti Code of Conduct (DCoC), as amended by the Jeddah Amendment, to enhance maritime security in the Western Indian Ocean and the Gulf of Aden.
- The European Union Naval Force Atalanta is responsible for maintaining security in the Indian Ocean and has been a benchmark in the fight against piracy for the past 15 years.

About Operation Atalanta:

- Operation Atalanta, formally European Union Naval Force (EU NAVFOR) Somalia, is an ongoing counter-piracy military operation at sea off the Horn of Africa and in the Western Indian Ocean.
- It is the first naval operation conducted by the European Union (EU), in support of United Nations resolutions 1814, 1816, 1838, and 1846 adopted in 2008 by the United Nations Security Council.
- Since 29 March 2019, the operational headquarters is located at Naval Station Rota (NAVSTA Rota) in Spain, having moved from London as a result of the British withdrawal from the EU.
- It is part of a larger global action by the EU to prevent and combat acts of piracy in the Indian Ocean, and it is the first EU naval operation to be launched.
- It maintains its activities to deter, prevent and repress piracy and armed robbery at sea and has extended its geographical scope north of the Red Sea.
- It cooperates with the multinational Combined Task Force 151 of the US-led Combined Maritime Forces (CMF) and NATO's anti-piracy Operation Ocean Shield.
- The mission was launched in December 2008 with a focus on protecting Somalia-bound vessels and shipments belonging to the WFP and AMISOM, as well as select other vulnerable shipments.
- In addition, Operation Atalanta monitors fishing activity on the regional seaboard

Areas in news:

Gulf of Aden:

- The Gulf of Aden is a deepwater gulf of the Indian Ocean between Yemen to the north, the Arabian Sea to the east, Djibouti to the west, and the Guardafui Channel, Socotra and Somalia to the south.
- In the northwest, it connects with the Red Sea through the Bab-el-Mandeb strait, and it connects with the Arabian Sea to the east.
- To the west, it narrows into the Gulf of Tadjoura in Djibouti.
- The Aden Ridge lies along the middle of the Gulf and is causing it to widen about 15mm per year.

Red Sea:

- The Red Sea (Erythraean Sea) is a seawater inlet of the Indian Ocean, lying between Africa and Asia.
- The connection to the ocean is in the south through the Bab el Mandeb strait and the Gulf of Aden.
- To the north lie the Sinai Peninsula, the Gulf of Aqaba, and the Gulf of Suez (leading to the Suez Canal). The sea is underlain by the Red Sea Rift which is part of the Great Rift Valley.
- The six countries bordering the Red Sea are: Saudi Arabia, Yemen, Egypt, Sudan, Eritrea, Djibouti
- Islands include the Dahlak Archipelago, the Farasan Islands, and Zubair Archipelago.
- Key ports of the Red Sea are Jeddah (Saudi Arabia), Port Sudan (Sudan), Djibouti Port (Djibouti), Aqaba Port (Jordan).
- **Bab el Mandeb Strait:** Located at the southern entrance of the Red Sea, connecting it to the Gulf of Aden and the Indian Ocean.
- **Strait of Tiran:** Situated at the northern end of the Red Sea, separating the Sinai Peninsula from the Saudi Arabian coastline and providing access to the Gulf of Aqaba.



Topic 47. ON THE MASS KIDNAPPINGS IN NIGERIA

Important for the subject: International Relations



Nigeria is grappling with its most severe economic crisis in recent years, compounded by a surge in kidnappings, especially in its northern region.

What is the latest crisis?

- The latest crisis in Nigeria involves a series of mass abductions attributed to suspected Boko Haram militants and other armed groups, primarily targeting the northeastern and northwestern regions:
- Borno's Ngala Local Government Area (kidnapping of at least 200 internally displaced persons),
- Kaduna State (287 students were kidnapped from a government school in Chikun) and
- Sokoto State (15 children were abducted)
- This series of kidnappings follows a history of similar attacks, notably the 2014 abduction of 276 girls from Chibok by Boko Haram.

What's fuelling the surge in kidnappings in Nigeria?

- It is attributed to economic, security, and political challenges.
- Key factors include a struggling economy, high unemployment, surging inflation, food insecurity, and instability in the Niger Delta.
- Kidnappings have become a lucrative industry, with ransom payments as the primary motive. Nigeria faces security crises across all regions, with threats from Boko Haram, bandit groups, criminal gangs, sea piracy, and armed separatists.

How has the government responded?

- In response to the surge in kidnappings, Nigerian security forces are endeavoring to secure the victims' safe release.
- President Bola Tinubu has firmly opposed the payment of ransoms for the nearly 600 people recently abducted, aligning with Nigerian law that penalizes anyone paying a ransom with up to 15 years in prison—a measure enacted in 2022 to combat the rampant kidnapping crises.

Topic 48. IMF'S BAILOUTS TO PAKISTAN

Important for the subject: International Relations

Amount and Agreement:

Pakistan and the International Monetary Fund (IMF) reached a preliminary agreement for the release of \$1.1 billion from a \$3 billion

- The bailout was approved by the IMF in July to save Pakistan from defaulting on its debt repayments.
- Pakistan will receive the final tranche from the bailout under the new agreement.

Approval Process:

- The IMF statement mentioned that the agreement is reached.

Previous Bailout:

- Pakistan signed a short-term agreement last year to overcome an economic crisis.
- The \$3 billion bailout was signed by former Premier Imran Khan to address economic challenges.

IMF's View:

- The IMF stated that Pakistan's economic and financial position has improved in recent months.
- However, it noted that growth is expected to be modest, and inflation remains above target.
- Ongoing policy and reform efforts are required to address Pakistan's economic vulnerabilities.

Future Bailout:

- Pakistan has expressed interest in receiving a new bailout of up to \$8 billion when the current one expires this month.

IMF Statement:

- The IMF mentioned that Pakistan faces challenges from elevated external and domestic financing needs and an unsettled external environment.
- The agreement between Pakistan and the IMF aims to address Pakistan's economic challenges and improve its financial stability. The IMF highlighted the need for ongoing reforms and policy efforts to strengthen Pakistan's economic position.

What are IMF Bailouts?

- IMF bailouts are a form of financial support extended to a country facing a potential threat of bankruptcy.
- Support can take forms such as loans, cash, bonds, or stock purchases.
- It often comes with greater oversight and regulations.
- The IMF provides these packages to countries facing major macroeconomic problems, often currency crises.

Types of IMF Programs:

Stand-By Arrangements (SBAs):

- Short- to medium-term programs for financial assistance to address balance of payments problems.

Extended Fund Facility (EFF):

- Longer-term programs, usually linked with structural reforms to address deep-seated economic issues.

Structural Adjustment Programs (SAPs):

- Comprehensive reform programs focusing on macroeconomic stabilization and structural adjustments.

How is an IMF Bailout Provided?

Procedure:

- IMF lends money, often in the form of Special Drawing Rights (SDRs).
- SDRs represent a basket of major currencies.

Conditions:

- Countries may need to implement structural reforms as a condition for receiving IMF loans.
- These reforms aim to address the root causes of the economic crisis.

Advantages of IMF Bailouts:

- Ensure continued survival of the country under difficult economic circumstances.
- Prevent collapse of financial systems and critical industries.
- IMF provides technical assistance for economic reforms and institution strengthening.

Disadvantages of IMF Bailouts:

- May lead to reduced government spending and increased taxes, causing social unrest.
- Seeking an IMF bailout can harm a country's reputation with investors and lenders.
- Creates a dependency on external funding, discouraging long-term reforms.
- Can be seen as an admission of economic failure, leading to political instability.

Topic 49. WHO ARE THE MAJEED BRIGADE, THE BALOCH MILITANTS WHO CARRIED OUT THE GWADAR ATTACK?

Important for the subject: International Relations



The Majeed Brigade of the separatist group Baloch Liberation Army (BLA) has claimed responsibility for Wednesday's attack on a complex outside Pakistan's strategic Gwadar Port.

- Pakistan has said eight militants and two security personnel were killed in the attack; the BLA has, however, claimed to have killed 25 security personnel.
- The BLA is the most prominent of the many separatist groups in Pakistan's restive Balochistan province.
- The Majeed Brigade, which has been active since 2011, is the BLA's dedicated suicide squad. The unit is named after two brothers, both of whom were called Majeed Langove.
- The Majeed Brigade has also attacked the Chinese Consulate in Karachi (2018), the Gwadar Pearl Continental Hotel (2019), and the Pakistan Stock Exchange in Karachi (2020), according to the South Asia Terrorism Portal.

The Balochistan context:



- Balochistan, in Pakistan's southwest, is the country's largest and most sparsely populated province.
- It has oil reserves and abundant natural resources, but the ethnic Baloch are Pakistan's poorest and most under-represented people.
- In recent years, Baloch militants have repeatedly targeted both Gwadar and Chinese nationals in the country.

About Majeed Brigade:

- The BLA is the most prominent of the many separatist groups in Pakistan's restive Balochistan province.
- The Majeed Brigade, which has been active since 2011, is the BLA's dedicated suicide squad.
- The unit is named after two brothers, both of whom were called Majeed Langove.

About Balochistan:

- Balochistan is a historical region in Western and South Asia, located in the Iranian plateau's far southeast and bordering the Indian Plate and the Arabian Sea coastline. This arid region of desert and mountains is primarily populated by ethnic Baloch people.
- **The Balochistan region is split among three countries:** Iran, Afghanistan and Pakistan.
- Administratively it comprises the Pakistani province of Balochistan, the Iranian province of Sistan and Baluchestan, and the southern areas of Afghanistan, which include Nimruz, Helmand and Kandahar provinces.
- Balochistan is the largest among the 4 provinces in Pakistan. It is located in the southwestern part of Pakistan.
- It is bordered by Iran (west), Afghanistan (northwest), by Khyber Pakhtunkhwa and Punjab provinces (northeast and east), by Sindh province (southeast) and by the Arabian Sea (south).
- Its southern coastline, including the Makran Coast, is washed by the Arabian Sea, in particular by its western part, the Gulf of Oman.

Topic 50. SRI LANKA LIKELY TO SECURE SIX-YEAR MORATORIUM, LOWER INTEREST ON DEBT OWED TO INDIA, PARIS CLUB

Important for the subject: International Relations

Sri Lanka is close to finalising a debt treatment plan with India and the Paris Club, sources familiar with the negotiations said, pointing to a likely moratorium of up to six years and a reduced interest rate during the repayment period.

Understanding the Paris Club

- The Paris Club is a group of mostly western creditor countries that emerged from a 1956 meeting where Argentina agreed to meet its public creditors in Paris.
- It serves as a forum where official creditors meet to address payment difficulties faced by debtor countries.
- **Objective:** To find sustainable debt-relief solutions for nations struggling to repay bilateral loans.

Members:

- Includes countries such as Australia, Canada, France, Germany, Japan, the United States, and others.
- All 22 members belong to the Organisation for Economic Co-operation and Development (OECD).

Debt Agreements:

- The Paris Club has reached 478 agreements with 102 debtor countries since its inception.
- Total debt treated under these agreements is USD 614 billion since 1956.
- Recent Developments and Sri Lanka's Debt Scenario.

Changing Landscape:

- Paris Club countries were dominant in bilateral lending in the past century.
- However, their significance has diminished in the last two decades with China emerging as the largest bilateral lender globally.

Sri Lanka's Bilateral Creditors:

- In Sri Lanka's case, the largest bilateral creditors include India, China, and Japan.
- Sri Lanka owes 52% of its bilateral debt to China, 19.5% to Japan, and 12% to India.

Further developments:

- Meanwhile, Sri Lanka got a step closer to receiving the next instalment of the International Monetary Fund's assistance, as part of the \$3 billion package it obtained last year, to recover from the unprecedented financial crash witnessed in the island nation in 2022. Authorities reached a state-level agreement with the Fund on the second review of its four-year Extended Fund Facility (EFF) arrangement.

- Upon completion of the IMF Executive Board's review, Sri Lanka would have access to about \$337 million, taking IMF assistance it has received so far to \$1 billion, the Fund said in a statement.

About Extended Fund Facility (EFF):

- It is a fund created by IMF for helping economies to address serious medium-term balance of payments problems because of structural weaknesses that require time to address.
- Assistance under an extended arrangement features longer program engagement to help countries implement medium-term structural reforms with a longer repayment period.
- It provides for support for comprehensive programs including the policies needed to correct structural imbalances over an extended period.
- Typically approved for periods of three years, but may be approved for periods as long as 4 years (repaid over 4.5–10 years in 12 equal semiannual installments unlike Stand-By Agreement facility which provides support for short period with repayment period of 3.5–5 years.)

Conditions to get help:

- When a country borrows from the IMF, it commits to undertake policies to overcome economic and structural problems
- The IMF's Executive Board regularly assesses program performance and can adjust the program to adapt to economic developments.
- Lending is tied to the IMF's market-related interest rate, known as the basic rate of charge, which is linked to the Fund's Special Drawing Rights (SDR) interest rate.
- EFF is guided by a country's financing needs, capacity to repay, and track record with past use of IMF resources:
- **Normal access:** Borrowing under an EFF is subject to the normal limit of 145 percent annually of a country's IMF quota, (IMF quota broadly reflects a country's position in the global economy), and a cumulative limit over the life of the program of 435 percent of its quota, net of scheduled repayments.
- **Exceptional access:** The Fund may lend amounts exceeding these limits in exceptional circumstances provided that a country satisfies a predetermined set of criteria.

Topic 51. WHERE NAMES INDICATE THE ORDER OF BIRTH IN A FAMILY

Important for the subject: Geography

In the Lisu or Yobin community of Arunachal Pradesh, India, the naming convention reflects the birth order of children.

- This unique naming practice is a significant aspect of their culture, underlining the importance of family and tradition within the Lisu community.
- Recently, Birdwatchers have discovered a new species of wren babblers (bird) in remote northeastern Arunachal Pradesh which has been named as Lisu wren babbler.
- For instance, the eldest daughter's name includes "Ana," while subsequent daughters are named "Angyi," "Acha," and so forth up to "Apshi" for the tenth daughter.
- Boys' names follow a similar pattern, with "Apu" for the eldest and names like "Adu," "Akhi," continuing in order.
- To avoid confusion in cases where multiple families might have children with similar naming patterns due to their birth order, the Lisu employ a system of prefixes or suffixes.
- This customization adds uniqueness to each name, reflecting both the individual's birth order and potentially their clan affiliation.
- Clan names such as Ngwazah, Jeazah, and Michey, among others, are examples of this practice.
- This system of naming not only signifies the individual's position in their family but also connects them to their broader cultural heritage and community identity.

Lisu and Singpho communities:

- The Lisu and Singpho communities, part of the Tibeto-Burman ethnic family, share the tradition of using numbered names to indicate birth order within their families, reflecting their ethnic bonds and cultural heritage.
- This naming convention is prevalent among the Lisus, who are spread across Arunachal Pradesh, China, Myanmar, and Thailand, and the Singphos, found in 27 countries, including significant populations in India's Arunachal Pradesh and Assam.
- Both communities use specific sequences of names for boys and girls, with additional practices to avoid confusion in cases of similar name counts within families.
- These practices can include prefixing or suffixing given names.
- Moreover, names can also include clan or ancestral references, further enriching the cultural and familial significance of the naming convention.

- This system underscores the communities' deep-rooted traditions and the importance of family and clan identities.

About Wren Babblers:

- Babbler family: There are about 20 species of small Asian birds belonging to the babbler family Timaliidae.

Features:

- They are 10 to 15 centimetres (4 to 6 inches) long, short-tailed and have a rather short and straight bill.
- Habitat: Wren-babblers occur chiefly in southern Asia.
- Grey-bellied wren babblers: Which are almost similar to this new species are found mostly in Myanmar and in smaller numbers in China and Thailand.

Topic 52. SPRING SEASON 'DISAPPEARING' IN MANY STATES, SHOWS STUDY***Important for the subject: Geography***

A 50-year study of meteorological data across Indian states and territories reveals a significant warming trend, particularly affecting the winter and spring seasons.

- Researchers from Climate Trends analyzed average monthly temperatures from 1970 to the present, covering 33 states and union territories, to examine the impact of global warming.
- They found that every region experienced 'net warming' during winter, with Manipur registering the highest increase of 2.3°C and Delhi the lowest at 0.2°C.
- Winter was identified as the fastest warming season in 12 regions, closely followed by autumn in 13 regions.
- Distinct regional patterns emerged, with southern India experiencing substantial warming in December and January, while the northern regions showed weaker warming or even cooling during these months.
- However, all areas warmed in February, with the northern regions experiencing a stark contrast between the cooler January temperatures and much warmer conditions in February, suggesting an abrupt transition to warmer weather that traditionally occurs in March.
- Significantly, Rajasthan and eight other states and territories recorded a warming difference of more than 2°C between January and February, supporting observations that spring feels markedly shorter in many parts of India.

- The study also linked the observed warming trends and reduced winter rainfall in northern India to changes in Western Disturbances and jet stream patterns, which are crucial for bringing moisture to the region during winter.

Topic 53. AUSTRALIA'S IRON ORE MINERS FACE FALLING CHINESE DEMAND

Important for the subject: Geography

Australia's vast iron ore mining sector is facing stark choices as its biggest customer China has likely hit a peak in its steel production and global pressures mount to decarbonise one of the world's most polluting industries.

- Australia is the world's largest exporter of iron ore, the key raw material used to make steel, and it shipped about 930 million metric tons in 2023, which at current prices would be worth about \$93 billion.
- Australia is also the world's largest exporter of metallurgical coal, used to make steel, ranks second in thermal coal and in liquefied natural gas, while also being the biggest exporter of lithium and largest net exporter of gold.

Why exports falling?

- China's steel output has flattened in the past five years to around 1 billion ton per annum, and most analysts presenting at this week's Global Iron Ore and Steel Outlook Conference in Perth predicted that production will gradually decline in the next few years.
- This is partly because China's infrastructure and housing construction will ease, but also because China will increasingly use scrap steel in electric arc furnaces to produce new steel products.

What is the future of Australia Iron Ore industry?

- It's also likely to change in composition, with higher grades of iron ore preferred as these can be more easily used as a feedstock along with scrap in electric arc furnaces.
- Higher grades of iron ore can also easily be upgraded into direct reduction iron (DRI), which in turn can be turned into steel without using coal.
- Making steel using DRI produced with green hydrogen and renewable energy is one way the industry is thinking of reducing carbon emissions.
- Even using natural gas to make DRI can reduce emissions by up to 75%.
- The problem is DRI is tricky to export given it can be volatile, so it tends to be made at the same location as the steel furnaces.
- So, if Australia's iron ore miners wish to move up the steel value chain, they would must find ways to produce DRI and turn it into steel in Australia, using renewable energy.



Other Option:

- Another path is upgrading the iron ore into hot briquetted iron (HBI), which is an upgraded form of DRI, whereby the DRI is converted into a compact form using heat.
- HBI can be shipped, and can be used in either an electric arc furnace or a basic oxygen unit.

Challenges

- Need significant investment.
- No certainty that the upgraded products will deliver sufficiently higher margins.

Topic 54. INDIA'S 'PROTECTED' BASMATI VARIETIES RENAMED & CULTIVATED IN PAK, IARI DEMANDS LEGAL ACTION

Important for the subject: Geography

IARI has raised concerns about Pakistan's unauthorized cultivation and marketing of IARI-bred basmati rice varieties, including Pusa Basmati-1121, PB-6, PB-1509, PB-1847, PB-1885, and PB-1886.

- These varieties, accounting for approximately 90% of India's basmati exports, are protected under Indian law, limiting their cultivation to certain regions within India and restricting seed sales.
- The illegal cultivation in Pakistan undermines the rights of Indian breeders and farmers.

Variety Piracy Issues- Specific Varieties and Responses

- Pakistani seed firms need only a small quantity of seeds to multiply these varieties, facilitating illegal propagation.
- **Pusa Basmati-1121 (PB-1121):** Known for the extra kernel length of its grains, officially registered in Pakistan as 'PK 1121 Aromatic' and marketed as '1121 Kainat'.
- **Other Varieties:** PB-6 and PB-1509 have also been adopted in Pakistan, with PB-1509 being registered as 'Kissan Basmati'.
- Improved Pusa Basmati 1 (Pusa 1460) – First product of molecular breeding in rice in India.
- Pusa Basmati 6 (Pusa 1401) – Superior grain quality.
- Pusa RH10 – The world's first superfine grain aromatic rice hybrid: It was released in 2001 for commercial cultivation in the irrigated eco-systems of Haryana, Delhi and Uttaranchal.
- Newer Varieties: IARI's latest varieties like PB-1847, PB-1885, and PB-1886, bred for disease resistance, are being grown in Pakistan, and acknowledged in YouTube videos by Pakistani farms.

Legal protection for these rice varieties:

- IARI Director A.K. Singh has called for legal measures against Pakistani seed firms to protect Indian interests.
- All the varieties are notified under the Seeds Act, 1966 for cultivation in the officially demarcated Geographical Indication area of basmati rice within India, covering 7 northern states.
- They are further registered under the Protection of Plant Varieties and Farmers' Rights Act, 2001.
- This Act allows only Indian farmers to sow, save, re-sow, exchange or share the seeds of any protected/registered varieties.

India's Basmati Rice Exports:

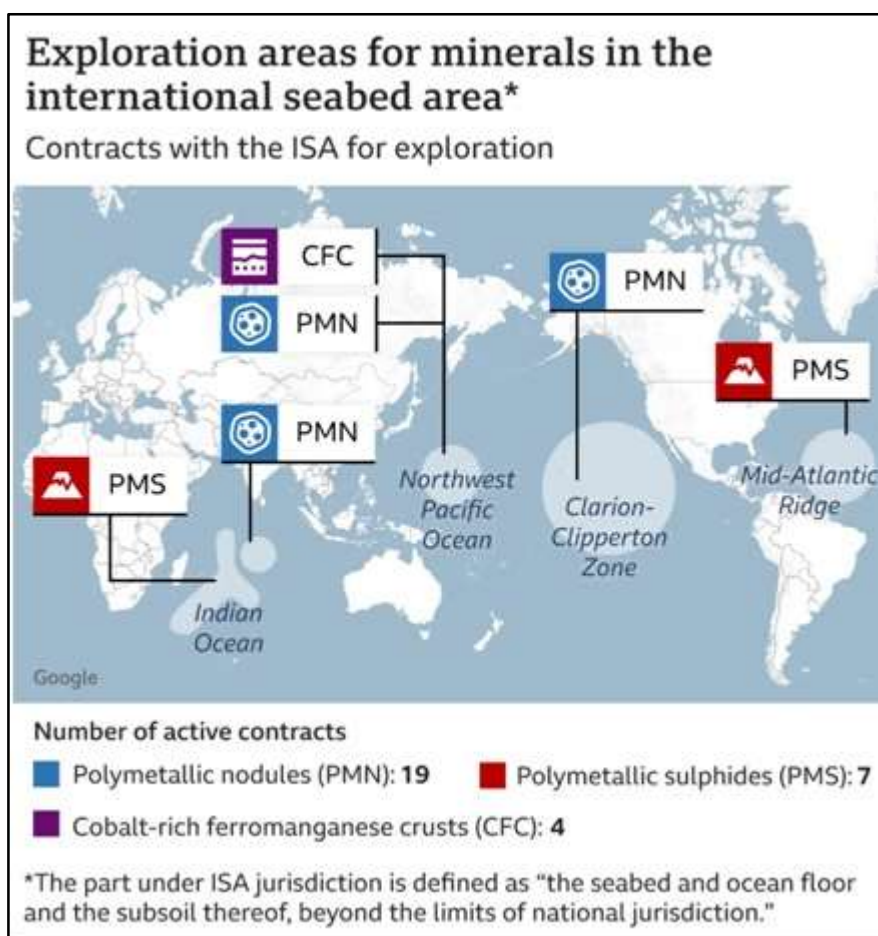
- Poised to hit a new high, with projections reaching \$5.5 billion for 2023-24, driven largely by high-yielding varieties developed by the Indian Agricultural Research Institute (IARI).
- India dominates markets in Iran, Saudi Arabia, and West Asia, with a preference for parboiled rice.

Pakistan's Basmati Exports:

- Significantly lower than India's, with exports valued at \$694.55 million in 2021-22 and \$650.42 million in 2022-23.
- The first seven months of 2023-24 saw a 24.3% increase in quantity and a 35.6% increase in value over the previous year.
- Pakistan enjoys an 85% share of the EU-UK market due to lower export prices facilitated by the depreciation of the Pakistani rupee.

Topic 55. INDIA IN UNDERSEA RACE TO MINE WORLD'S BATTERY METAL

Important for the subject: Geography



India is advancing its exploration for critical minerals in the ocean depths (under Samudrayaan Mission) to support renewable energy and clean technology, amidst increasing global competition.

Key Developments:

- India holds two licenses in the Indian Ocean and has applied for two more, competing with nations like China and Russia for essential minerals such as cobalt, nickel, copper, and manganese.
- The International Seabed Authority (ISA), overseeing deep-sea mineral exploration, has issued 31 licenses globally.
- India's new applications, if approved, would bring its total licenses to nearly match Russia and slightly trail China.
- India, China, Germany and South Korea already have exploration licences for polymetallic sulphides in the Indian Ocean ridge area.

Exploration Areas and Challenges:

- Polymetallic Sulphides: India aims to explore chimney-like mounds near hydrothermal vents containing copper, zinc, gold and silver -in the Carlsberg Ridge of the Central Indian Ocean.
- Another aim is to explore the cobalt-rich ferromanganese crusts of the Afanasy-Nikitin Seamount in the Central Indian Ocean.

Environmental significance:

- Renewable Energy Goals: With ambitions to greatly increase its renewable capacity by 2030 and achieve net zero emissions by 2070, India recognizes the necessity of securing critical minerals.
- Despite its potential to offset land mining issues, deep-sea mining faces opposition due to possible environmental harm and insufficient understanding of deep marine ecosystems.

Geopolitical significance:

- The global race for critical minerals is intensified by geopolitical tensions, especially concerning China's dominant role in processing these materials. The US, among others, seeks to diversify supply chains through partnerships like the Minerals Security Partnership, which India has joined.
- The US is not part of the race to mine international waters as it has not ratified the UN Convention on the Law of the Sea, the agreement which led to the creation of the ISA. Instead, it aims to source minerals from its domestic seabed and process ones mined by its allies from international waters.

Samudrayaan Mission (India's Deep Ocean Mission)

- Samudrayaan, or the journey into the sea, is a mission launched in 2021 to unlock the mysteries of the deep ocean for mineral resources and develop deep sea technologies for sustainable use of ocean resources.
- A sub-component of India's Deep-Sea Mission, the Samudrayaan mission aimed at supporting the Blue Economy initiatives of the Indian government by developing niche technology, vehicles to carry out subsea activities.
- The MoES is the nodal ministry to implement this multi-institutional ambitious mission.
- The estimated cost of the mission will be Rs 4077 crore for a period of 5 years to be implemented in a phase-wise manner – cost for the first phase (2021-2024) would be Rs 2823.4 crore.
- Indian Space Research Organization (ISRO), Indian Institute of Tropical Meteorology (Pune) and Defence Research and Development Organisation (DRDO) will actively participate in this mission.



- It was conceptualised based on the forthcoming Gaganyaan mission – ISRO's attempt at a crewed mission into space – expected in late 2024 or 2025.

MATSYA 6000

- It is a manned submersible vehicle developed by NIOT under the Samudrayaan mission to facilitate humans in the deep ocean in exploring mineral resources like Nickel, Cobalt, Rare Earths, Manganese, etc.
- Expected to be launched in 2024-25, it would make India only one among six countries (US, Russia, Japan, France, and China) to have piloted a crewed under-sea expedition beyond 5,000 metres.
- MATSYA-6000 is a spherical, titanium hull (made by ISRO) equipped with life-support, capable of floating underwater and collecting soil and rock samples from the seabed with attached robotic arms.

Topic 56. BRAZIL HEADING TO A RARE SEQUENCE OF INCREASING COFFEE CROP OUTPUT

Important for the subject: Geography

Brazil is anticipated to mark its third consecutive year of increased coffee production, a rare achievement in its 144-year coffee history. This trend, mainly fueled by a boost in robusta bean production, is expected to continue into 2025.

- This sequence of annual production increases has been infrequent, occurring only seven times previously.
- Brazil, traditionally known for arabica beans favoured by premium coffee shops, is seeing robust growth in robusta production, commonly used in instant coffee.
- Normally, arabica coffee production fluctuates annually, but recent extreme weather events, including droughts and frosts around 2020 and 2021, disrupted this cycle.
- Post-frost recovery strategies, such as pruning and the increased use of irrigation, especially in robusta cultivation, have contributed to the continuous production growth.
- The rising trend in robusta output is expected to sustain Brazil's overall coffee production growth, bypassing the arabica biennial cycle.
- This ongoing increase in production signifies Brazil's adaptability and growing dominance in the global coffee market, with robusta beans playing a pivotal role.

Coffee production in India:

- Coffee production in India is dominated in the hill tracts of South Indian states, with Karnataka accounting for 71% (Kodagu alone produces 33% of India's

coffee), followed by Kerala with 21% and Tamil Nadu (5% of overall production with 8,200 tonnes).

- Indian coffee is said to be the finest coffee grown in the shade rather than in direct sunlight anywhere in the world.

Coffea arabica:

- A species of flowering plant in the coffee and madder family Rubiaceae.
- Believed to be the first species of coffee to have been cultivated and is currently the dominant cultivar, representing about 60% of global production.
- Coffee produced from the less acidic, more bitter, and more highly caffeinated robusta bean (*C. canephora*) makes up most of the remaining coffee production.
- Endemic to the southwestern highlands of Ethiopia, *Coffea arabica* is today grown in dozens of countries between the Tropic of Capricorn and the Tropic of Cancer.
- The natural populations of *Coffea arabica* are restricted to the forests of South Ethiopia and Yemen.

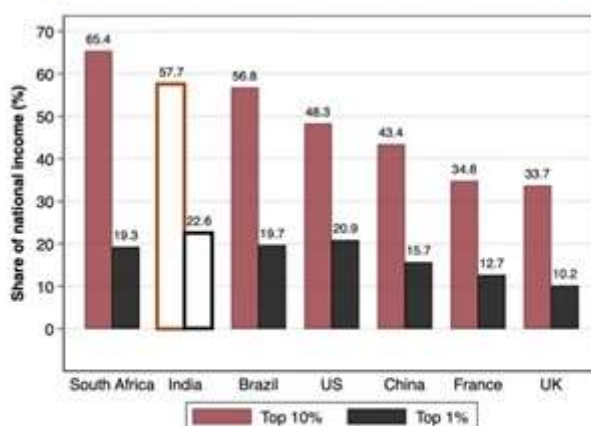
Coffea canephora (or robusta coffee):

- A species of flowering plant in the family Rubiaceae.
- A species of coffee plant that has its origins in central and western sub-Saharan Africa.
- *Coffea canephora* has two main varieties- robusta and nganda.
- Grows indigenously in Western and Central Africa from Liberia to Tanzania and south to Angola.

Difference between Robusta and Arabica coffee:

- Beans from *C. robusta* tend to have lower acidity, more bitterness, and a more woody and less fruity flavour compared to *C. arabica* beans.
- A greater crop yield than that of arabica, Contains more caffeine (2.7% compared to arabica's 1.5%), contains less sugar (3—7% compared to arabica's 6—9%).
- As it is less susceptible to pests and disease, robusta needs much less herbicide and pesticide than arabica.

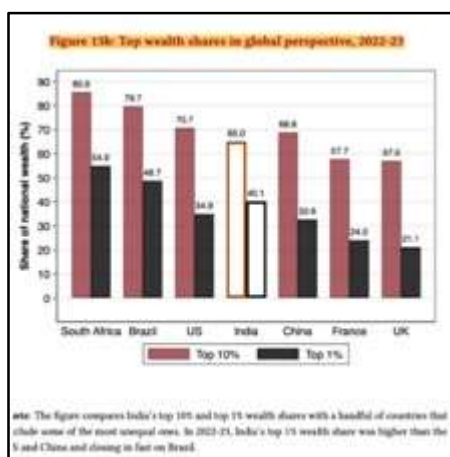
Figure 15a: Top income shares in global perspective, 2022-23



Note: The figure compares India's top 10% and top 1% income shares with a handful of countries that include some of the most unequal ones. In 2022-23, India's top 1% income was not only the highest among these countries but among the very highest anywhere in the world.

International comparison of wealth inequality

- The picture is slightly less extreme when wealth inequality is considered.
- In terms of top wealth shares (Figure 15b), we see that both with top 10% and top 1%, India comes out in the middle of the pack, with Brazil and South Africa standing out with their extreme wealth concentration levels (85.6% and 79.7% top 10% shares respectively).



Note: The figure compares India's top 10% and top 1% wealth shares with a handful of countries that include some of the most unequal ones. In 2022-23, India's top 1% wealth share was higher than the US and China and closing in fast on Brazil.

Poor data leading to likely underestimation of inequality

- Notwithstanding such stark findings, emphasized that the quality of economic data in India is notably poor and has seen a decline recently.
- It is therefore likely that our results represent a lower bound to actual inequality levels.

Policy solution

- Implementing a super tax on Indian billionaires and multimillionaires, along with restructuring the tax schedule to include both income and wealth, so as to finance major investments in education, health and other public infrastructure, could be effective measures.

Topic 57. ELECTION COMMISSION INTRODUCES VOTE-FROM-HOME FOR CITIZENS AGED 85 AND ABOVE***Important for the subject: Polity***

Senior citizens who are above 85 years and persons with disabilities can opt for postal ballots and cast their votes from homes.

- There are 81, 87, 999 senior citizen electors above 85 years and 2,18,442 electors above 100 years in the country, as on March 10.

Votes from homes:

- The Election Commission of India (ECI) for the first time made available the facility of vote-from-home (VfH) through postal ballot for two different types of voters — persons aged 85 years and above, and persons with disabilities (PwD).
- The facility can also be availed by persons with more than 40 percent disability.
- Two polling officials, accompanied by a videographer and a security person, will visit the voter's home and enable them to vote in a postal ballot.
- Voters will be informed in advance about the date and approximate time of visit of election officials by an SMS to the mobile number mentioned in the application.

Two visits

- If the elector is not present at the given address during the first visit under VFH, the polling team will inform about the schedule of their second visit.
- If they are not present even on the second visit, a further visit will not be entertained.
- Moreover, those absent during VFH will completely lose the opportunity to vote (through both VFH and EVM).

Form 12D

- Form 12D is a letter informing the Assistant Returning Officer that he or she is not in a position to go to the polling station to vote.
- The voters in the two categories must file Form 12 D with the Election Commission within five days of the release of the poll notification.

- The Union Law Ministry amended the Conduct of Elections Rules-1961 to change the definition of senior citizens who are eligible to choose the postal ballot facility from those “above 80 years” to those “above 85 years”.
- **Fresh tussle with Governor:** Why Tamil Nadu has moved SC to have a minister reinstated.
- The Supreme Court on Monday agreed to hear a plea by Tamil Nadu seeking its intervention in reinstating K Ponmudy, a senior leader of the ruling Dravida Munnetra Kazhagam (DMK), as a minister.
- TN Governor Ravi refused to reinstate K Ponmudy, whose conviction was stayed by the Supreme Court in a disproportionate assets case earlier.
- In December last year, Ponmudy was disqualified after the Madras High Court convicted him in a disproportionate assets case.

The disqualification:

- The Madras High Court on December 19 last year overturned a trial court verdict acquitting Ponmudy and his wife in a disproportionate assets case.
- The HC convicted the former minister and his wife and awarded them a three-year jail term, along with a fine of Rs 50 lakh.
- This decision by the High Court triggered Section 8(3) of The Representation of the People Act, 1951.

Section 8(3) of The Representation of the People Act, 1951:

- A person convicted of any offense and sentenced to imprisonment for not less than two years shall be disqualified from the date of such conviction and shall continue to be disqualified for a further period of six years after his release.

Stay of the conviction:

- On March 11, a Supreme Court Bench comprising Justices Abhay Oka and Ujjal Bhuyan, however, stayed the conviction and the sentence.
- The grant of stay by the SC essentially means that Ponmudy’s conviction is put in abeyance, or is suspended pending a final decision.
- Article 164 (1) of the Constitution states that the Chief Minister shall be appointed by the Governor and “the other Ministers shall be appointed by the Governor on the advice of the Chief Minister, and the Ministers shall hold office during the pleasure of the Governor”.

Disqualification of MP/MLAs:

- Legal provisions regarding the disqualification of MPs/MLAs.
- Disqualification of a lawmaker is prescribed in three situations.
- First is through the Articles 102(1) and 191(1) for disqualification of a member of Parliament and a member of the Legislative Assembly respectively.
- The grounds here include holding an office of profit, being of unsound mind or insolvent or not having valid citizenship.
- The second prescription of disqualification is in the Tenth Schedule of the Constitution.
- This provides for the disqualification of the members on grounds of defection.
- The third prescription is under The Representation of The People Act (RPA), 1951.
- This law provides for disqualification for conviction in criminal cases.
- Under Representation of The People Act, 1951.
- There are several provisions that deal with disqualification under the RPA.
- Section 8 of the RPA deals with disqualification for conviction of offenses.
- Section 8(1) of the act includes specific offenses such as promoting enmity between two groups, bribery, and undue influence or personation at an election.
- Section 8(2) lists offenses that deal with hoarding or profiteering, adulteration of food or drugs and for conviction and sentence of at least six months for an offense under any provisions of the Dowry Prohibition Act.
- Section 8(3) disqualifies a convicted person who has been sentenced to imprisonment for not less than two years.
- He is disqualified from the date of such conviction and shall continue to be disqualified for a further period of six years since his release.
- Section 9 deals with disqualification for dismissal for corruption or disloyalty, and for entering into government contracts while being a lawmaker.
- Section 10 deals with disqualification for failure to lodge an account of election expenses.
- Section 11 of the act deals with disqualification for corrupt practices.

Topic 58. HOW HOUSE TERMS AND POLL SCHEDULES ARE DECIDED***Important for the subject: Polity***

The Election Commission of India (ECI) announced a schedule adjustment for the elections to the Lok Sabha and four state Assemblies, moving the vote counting in Sikkim and Arunachal Pradesh to June 2, from the initially scheduled June 4.

- This change was made because the terms of the Legislative Assemblies in these states expire on June 2, 2024.

Original Schedule:

- Initially, Assembly elections in Arunachal Pradesh and Sikkim were set to begin with notifications on March 20, nominations till March 27, withdrawals by March 30, and voting on April 19.
- Lok Sabha elections were planned in seven phases from April 19 to June 1, with a single-day election in 22 states and Union Territories, including Arunachal Pradesh and Sikkim. The counting was originally set for June 4 for all seats.

Reason for Change:

- The ECI realized post-announcement that the assemblies' terms ended on June 2, necessitating the completion of the election process before this date.

Constitutional Terms for Assemblies and Lok Sabha:

- The Constitution mandates that state Assemblies and Lok Sabha last five years from their first sitting.
- **For Lok Sabha, Article 83(2) states:** "The House of the People, unless sooner dissolved, shall continue for five years from the date appointed for its first meeting and no longer and the expiration of the said period of five years shall operate as a dissolution of the House."
- **For Legislative Assemblies, Article 172(1) states:** "Every Legislative Assembly of every State, unless sooner dissolved, shall continue for five years from the date appointed for its first meeting and no longer and the expiration of the said period of five years shall operate as a dissolution of the Assembly."
- The term of the Assembly "may, while a Proclamation of Emergency is in operation, be extended by Parliament for a period not exceeding one year at a time and not extending in any case beyond a period of six months after the Proclamation has ceased to operate".

Application to Sikkim and Arunachal Pradesh:

- The current Assemblies of Sikkim and Arunachal Pradesh first met on June 3, 2019, ending their term on June 2, 2024.

- Officials aim to complete counting and announce results before midnight of June 2.

Election Schedule Considerations:

- The ECI considers various factors like weather, festivals, exams, and logistical requirements for security and polling stations.
- The expiration date of the legislature's term is a primary consideration, known five years in advance.

Previous Instances and Adjustments:

- The ECI has in the past drawn up schedules delinking the counting in a particular state from the counting in the rest of the country.
- There have been adjustments to accommodate state-specific circumstances, such as in 2004 for Andhra Pradesh and in 2023 for Mizoram, to respect local practices and significant dates.

Topic 59. SON'S TRIBUTE TO FATHER, 'PIECE OF GUJARAT IN DELHI': STORY OF CHAUSATHKHAMBA

Important for the subject: History



ChausathKhamba, also spelled ChaunsathKhamba, is a tomb built during 1623–24. It is located in Nizamuddin precincts of Sufi Muslim shrines and tombs in New Delhi, India.

- The name means “64 pillars” in Urdu and Hindi.
- The structure houses the tomb of Mirza Aziz Koka, foster brother of Mughal Emperor Akbar.
- It was built by Mirza Aziz Koka, son of Ataga Khan, as a mausoleum for himself, at the time when Mughal Emperor Jahangir ruled from Delhi.
- Mirza Aziz Koka had served several times as Jahangir's Governor of Gujarat before he died in Gujarat.

- The tomb enclosure is entered through a lofty arched gateway and has a large sunken forecourt.
- The mausoleum is unique on account of it being built entirely of marble, with 25 marble domes supporting the flat roof of the structure.
- The plan for ChausathKhamba could have been inspired from the wooden garden pavilions from Persia — such as the ChihilSutun, and in turn, the ChausathKhamba seems to have inspired the architectural design for Emperor Shahjahan's Diwan-i-Aam, Hall of Audience.
- Each facade of the square structure has five marble arches inset with marble jalis or lattice screens, and a doorway in the central arch providing access to the tomb.
- The column capitals are intricately carved with simple yet striking pendentives bridging the square floor plan to the circular dome above.
- The Aga Khan Trust for Culture along with the Archaeological Survey of India (ASI) undertook the conservation of ChausathKhamba.
- The project was co-funded by the Federal Republic of Germany.

About Urs Mahal:

- Urs is the death anniversary of a Sufi saint in South Asia, usually held at the saint's dargah (shrine or tomb).
- Urs Mahal is located in front of the ChausathKhamba and it's an assembly hall where Qawwali programmes are held on festival days and on the days during Urs of Sufi saint Nizamuddin Auliya.
- It is a protected monument (refurbished in 2003).
- In most Sufi orders such as Chishtiya, etc. the concept of Urs exists and is celebrated with enthusiasm.



Topic 60. T M KRISHNA CONFERRED SANGITA KALANIDHI***Important for the subject: History***

Renowned carnatic singer T M Krishna has been conferred the Sangita Kalanidhi for 2024 by the Music Academy.

- T M Krishna highlighted the non-inclusive nature of the artform and the music season, wherein non-Brahmin musicians and certain art forms such as Pariyattam, Villupattu, Gaana-Pattu and Kuthu were being left out.
- He started a music festival in the fishing village of Urur-Olcott Kuppam(Tamil Nadu) in an attempt to unite various art forms.
- He also organized a 'Nadaswaram and Thavil Festival' in collaboration with Narada Gana Sabha.

About Sangeet Kalanidhi:

- Sangeetha Kalanidhi is the title awarded yearly to a Carnatic musician by the Madras Music Academy.
- The award is considered the highest accolade in the field of Carnatic music.
- The idea of the award was conceived in 1942 by the then Academy President KV Krishnaswami Iyer.
- In 1942, it was decided that the musician so invited would be conferred the title of Sangita Kalanidhi, the award comprising a gold medal and a birudupatra (citation).
- On 1 January 1943, all musicians who had presided over the annual conferences between 1929 and 1942 were awarded the title.

Topic 61. RAILWAYS PLANS TO DEVELOP MULTI-MODAL TRANSPORT HUBS***Important for the subject: Schemes***

The Indian Railways is embarking on a project to develop mega railway terminals with multi-modal connectivity in cities with populations exceeding 10 lakh, as part of the 'Viksit Bharat' initiative led by Prime Minister Narendra Modi.

- This ambitious project aims to enhance infrastructure in aspirational cities and may also extend to emerging cities expected to see significant population growth.
- The Ministry of Railways is focusing on improving passenger experiences, emphasizing the importance of cleanliness and maintenance of railway premises and trains, particularly in the wake of expanding the Vande Bharat Expresses network.

- These efforts are part of a broader mission to elevate the quality of travel and ensure a high standard of service, with a stern warning against any negligence from senior officers.
- Furthermore, the Railway Board has addressed the need for thorough investigations and remedial actions in response to incidents affecting the operation of passenger and freight trains, such as brake binding and train parting.

“Viksit Bharat”@2047:

- The ‘Viksit Bharat 2047’ agenda is a comprehensive vision plan by the Government of India, aiming to transform India into a developed nation by the year 2047, marking the 100th anniversary of its independence.
- The vision encompasses various aspects of development, including economic growth, social progress, environmental sustainability, and good governance.
- The soul of Indian Version of notion of development is emphasised through Hon’ble PM’s Sankalp of Panch Pran, with Viksit Bharat being one of them and of utmost importance.
- The four pillars of Viksit Bharat are Yuva (Youth), Garib (Poor), Mahila (Women) and Kisan (Farmers).
- Other aspects like happiness ought to be the central pursuit in this journey. Without achieving happiness, development has no meaning. Ironically, the nations have developed, but people are not happy.

Current status:

- Presently, India is a lower-middle income category.
- To become a high-income economy, it needs to cross the barrier of per capita GNI of \$13,846 by 2047.
- To achieve the target, there is need to focus and work upon the three major indicators of prosperity:
- Incremental increases in overall GDP and per capita incomes over specified long periods.
- Changes in inequality of incomes in that country.
- The rate of overall inflation and exchange rate changes in the currency of that country.

Topic 62. GEM ENCOURAGING START-UPS AND SMALL ENTERPRISES***Important for the subject: Schemes***

The Government e-Marketplace (GeM), the Union government’s procurement portal, is actively working to promote the participation of start-ups and small enterprises as sellers.

Inclusion of Start-ups:

- Since its inception, almost 23,000 start-ups have registered on the GeM platform.
- GeM has been a successful digital initiative of the Indian government, with the gross merchandise value (GMV) expected to cross the ₹4-lakh crore mark this year, up from ₹422 crore in 2016.

Seller Base:

- GeM boasts a diverse seller base of 21 lakh, including a significant number of small and micro-enterprises.
- The platform caters to 1.5 lakh buyers across all tiers of government – Central, State, and local.

GeM Sahay 2.0:

- GeM is introducing GeM Sahay 2.0, a mobile-based lending platform aimed at supporting start-ups.
- This initiative offers collateral-free loans of up to ₹10 lakh to start-ups and entrepreneurs.
- Loans will be provided at interest rates of up to 10% and will be approved within just 10 minutes.

Market Linkages:

- GeM provides easy market linkages for start-ups, exempting them from certain listing requirements.
- The platform serves as a marketplace where start-ups fulfilled 84,000 orders worth ₹9,725 crore in the previous year.

Start-up Runway Initiative:

- GeM's 'Start-up Runway' initiative offers direct visibility to start-ups with the buyers on the public procurement portal.
- This program encourages start-ups to showcase their offerings and engage with potential buyers effectively.

Conclusion

- GeM's efforts to onboard and support start-ups and small enterprises reflect the government's commitment to promoting entrepreneurship and facilitating business growth.
- With GeM Sahay 2.0 offering quick and hassle-free loans, and initiatives like Start-up Runway enhancing visibility, the platform aims to create a conducive environment for start-up success in the public procurement space.

- **GeM Sahay:** Empowering Proprietorships on Government e-Marketplace (GeM)

Introduction:

- GeM Sahay is an innovative initiative launched by the Government e-Marketplace (GeM).
- It offers a comprehensive financing solution tailored for Proprietorships operating on the GeM platform.

Partnerships:

- GeM has collaborated with top financial lending banks to facilitate these loans.
- Proprietorships can access loans at the point of order acceptance, ensuring timely financial support.

Registration:

- Easy registration process via Udyam and Aadhar, free of charge.
- Proprietorships can seamlessly apply for loans with minimal paperwork, enhancing convenience.

Interest Rates:

- Loans offered through GeM Sahay come with competitive interest rates.
- Proprietorships benefit from favourable terms, making financing more accessible and affordable.
- Through GeM Sahay, GeM is poised to transform the financing experience for Proprietorships, fostering a conducive environment for business expansion and success. This initiative reflects GeM's dedication to innovation, efficiency, and support for the entrepreneurial ecosystem in India.

GeM Startup Runway Program: Fostering Growth for Startups

- The GeM Startup Runway Program is an initiative by the Government e-Marketplace (GeM) to support and promote startups in India.
- It aims to provide direct visibility and business opportunities to startups on the GeM platform.
- The program is designed to empower startups by offering them a dedicated platform to showcase their products and services.
- It facilitates easy access to government buyers and procurement opportunities, accelerating the growth of startups.