KERALA STATE CIVIL SERVICE ACADEMY

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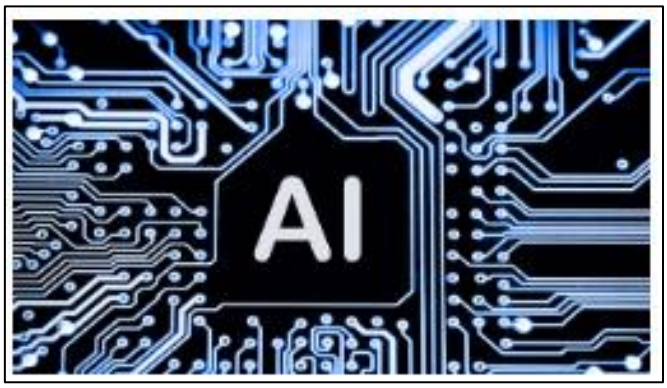
AI preparedness Index Dashboard

The International Monetary Fund (IMF) just released a full Artificial Intelligence Preparedness Index (AIPI) Dashboard. This tool will sort and rank 174 countries around the world based on how ready they are to use AI. The goal of this project, which was posted on their website, is to see how well each country can use and adapt AI technologies.



Singapore, Denmark, and the United States are at the top of the list of AEs, with scores of 0.80, 0.78, and 0.77, respectively. India, which is an EM, got a score of 0.49 and is now ranked 72nd in the world. Bangladesh, Sri Lanka, and China, which are all close by, were ranked 113th, 92nd, and 31st, with scores of 0.38, 0.43, and 0.63, respectively.

Four main areas are used to judge a country's AI readiness: its digital infrastructure, its human capital and labor market policies, its creativity and economic integration, and its rules and regulations.

The IMF can correctly figure out how each country can use AI technologies to its advantage by looking at them as a whole.

Senna Spectabilis

Environmental groups in Wayanad have asked the Forest Department to be more clear about their plan to get rid of Senna spectabilis from the Wayanad Wildlife Sanctuary. It is known that this alien species hurts the habitats of native animals in the Nilgiri Biosphere.

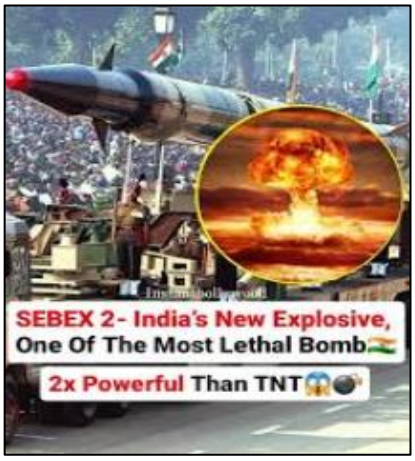
- **Native and Invasive:** Senna spectabilis, or Cassia spectabilis, is a deciduous tree from tropical South America, growing 15 to 20 meters tall. It is invasive in parts of Africa and Asia, disrupting native ecosystems.
- **Medicinal Uses:** Despite its invasive status, Senna spectabilis is valued for medicinal properties, particularly for treating constipation and skin diseases.
- **Ecological Benefits:** The tree's bright yellow flowers provide nectar for bees, and it is used in reforestation projects on degraded lands

Bharat Bill Payment System (BBPS)

From July 1, all credit card payments made through third-party apps must go through the Bharat Bill Payment System (BBPS), which is what the Reserve Bank of India (RBI) wants.

- BBPS is an **integrated bill payment system** or a platform which acts as a **connect between various billers and users.**
- It is a **one-stop ecosystem for payment of all bills** providing an interoperable and accessible **"Anytime Anywhere" Bill payment service to all customers across India** with certainty, reliability and safety of transactions.
- It offers customers the **convenience of payment by cataloguing various utility providers under one platform.**
- It acts as a **central reference for a customer who wants to make different payments** — whether utility bills, loan repayments, FasTag recharge, and so on.
- **Different Payment Channels:**
    - Bharat BillPay transactions can be **initiated through multiple payment channels like Internet, Internet Banking, Mobile**, Mobile-Banking, Mobile Wallets Bank Branch, Agents and Business Correspondents etc.
    - It provides **instant confirmation of payment via an SMS or receipt.**
- **Who are the stakeholders?**
    - BBPS was **conceptualised by the Reserve Bank of India in 2013** and is a **product of the National Payments Council of India (NPCI).**
    - It was **piloted in 2016** and **went live a year later.**
    - **By 2019, BBPS onboarded all recurring payments**.
- **Components**: There are **two key components** in the BBPS system,
    - **Bharat Bill Payment Central Unit (BBPCU):** The **BBPCU is NPCI**, which **lays downs the operating procedures and standards for BBPS.**
    - **Bharat Bill Payment Operating Units (BBPOUs):** BBPOUs **adhere to the rules set by BBPCU**. They **are the banking and non-banking entities** that handle the payments load.
    - **Then, there are billers (utility providers) and agents**, either as institutions or individuals, who provide services primarily on the collection side, to BBPOUs.

SEBEX 2



Together with Solar Industries, the Indian Navy has created SEBEX 2, a cutting-edge bomb that is 2.01 times more powerful than TNT. This is a very important step forward for India's Defense Export Promotion Scheme.

SEBEX 2 is made from High-Melting Explosives (HMX), which means it can greatly increase the destructive power of many weapons, like bombs, gun shells, and warheads, without adding any extra weight. With its approval, it is one of the most powerful non-nuclear explosives in the world.

Before SEBEX 2, the strongest conventional explosive used in India, mostly in BrahMos weapons, was about 1.50 times as powerful as TNT.

Meta 3D Gen

A new technology called Meta 3D Gen, which was launched by Mark Zuckerberg's company Meta, lets you make 3D assets by following text prompts. This new technology, which came out on July 2, is meant to save a lot of time and make it possible to make hyper-realistic video games, movie effects, and other things.

Models called AssetGen and TextureGen are used to build Meta 3D Gen. TextureGen adds high-quality textures and Physical-Based Rendering (PBR) to the original 3D model that AssetGen made. Compared to other solutions, this integration makes 3D material that is better and faster.

After typing in a text question, like "a pug made of metal," the process starts. There are textures and PBR on the first 3D model that AssetGen makes in about 30 seconds. It then takes an extra 20 seconds for TextureGen to improve the images and PBR maps. In short, making lifelike and detailed 3D models takes less than a minute.

This new technology from Meta is mostly about making it faster and easier to make 3D content. Depending on the complexity, it can cut production times by 3 to 60 times compared to usual methods.

Raimona National Park

The Mainland Serow, a vulnerable mammal species recognized by the International Union for Conservation of Nature (IUCN), has been sighted in Assam's Raimona National Park.

- Raimona National Park contributes to the Greater Manas Landscape, strengthening conservation efforts in the region.

About Raimona National Park

- Raimona National Park is located in the state of Assam along the Indo-Bhutan border, Raimona National Park is a significant conservation area.

Geography and Boundaries:

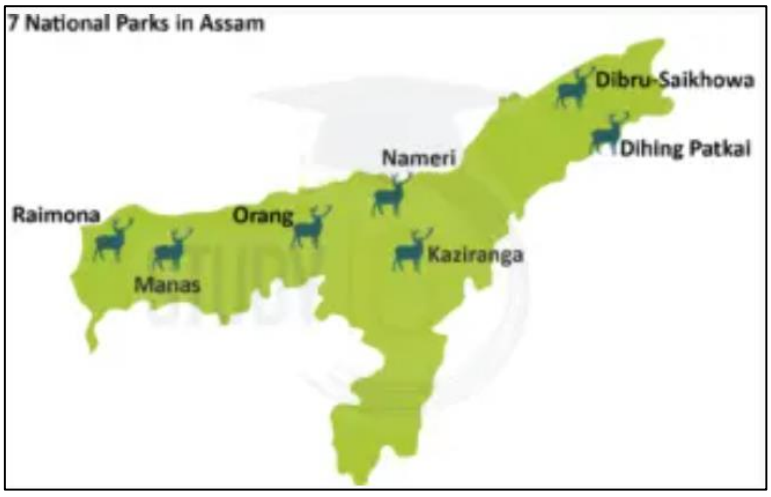
- The park shares its northern border with Bhutan's Phibsoo Wildlife Sanctuary.
- The western part is marked by the Sankosh River, forming the inter-state boundary between West Bengal and Assam.
- The eastern part is traversed by the Saralbhanga River (also known as Swrmanga), flowing southward from Bhutan's Sarphang district.

Vegetation and Flora:

- Raimona National Park boasts diverse forests, including moist sal forests, sub-Himalayan high alluvial semi-evergreen forests, savannah forests, and more.
- Orchids, tropical rainforest species, and riverine grasslands flourish within the park.

Fauna:

- The park is home to various wildlife, including the Golden Langur, Asian Elephant, Royal Bengal Tiger, and Clouded Leopard.
- Notably, a recent scientific observation recorded a Mainland Serow (Capricornis sumatraensis thar) at an unusually low elevation of 96 meters above sea level in Raimona National Park.



Mainland Serow:

- A mammal resembling a cross between a goat and an antelope.
- Inhabits altitudes ranging from 200 to 3,000 meters.
- Found across the India-Bhutan border in Phibsoo Wildlife Sanctuary and Royal Manas National Park in Bhutan.
- Other species include the Japanese serow, red serow (found in eastern India, Bangladesh, and Myanmar), and Taiwan or Formosan serow.

IUCN status : Vulnerable

Rim of the Pacific (RIMPAC) exercise

The Indian Navy's INS Shivalik has arrived at Pearl Harbour to participate in the 29th Rim of the Pacific (RIMPAC) exercise.

- RIMPAC stands for the Rim of the Pacific Exercise, which is the world's largest international maritime warfare exercise.
- It is hosted and administered by the United States Navy's Indo-Pacific Command.
- Rim of the Pacific (RIMPAC) exercise is a biennial multinational maritime exercise that fosters cooperative relationships among approximately 29 nations.
- RIMPAC 2024 will take place from June 26 to August 2 in and around the Hawaiian Islands.
- The exercise aims to enhance interoperability, strengthen strategic maritime partnerships, and ensure the safety of sea lanes in the free and open Indo-Pacific region.
- This year's theme is "Partners: Integrated and Prepared." Participating countries include Australia, Japan, the United Kingdom, and the United States, among other.

AI Washing

- AI washing is a term derived from greenwashing, where companies exaggerate their environmental friendliness to appeal to customers. Similarly, businesses that claim to have integrated AI into their products, when they're actually using less sophisticated technology, can be accused of AI washing.
- When it comes to AI washing, there are several types. Some companies claim to use AI when they're actually using less-sophisticated computing, while others overstate the efficacy of their AI over existing techniques, or suggest that their AI solutions are fully operational when they are not.

The Global Conclave on Plastics Recycling and Sustainability (GCPRS)

The Global Conclave on Plastics Recycling and Sustainability (GCPRS) will be held at Bharat Mandapam in Pragati Maidan from July 4–7, 2024. The event is being put together by the All India Plastic Manufacturers' Association (AIPMA) and the Chemicals and Petrochemicals Association (CPMA).

The main goal of this event is to raise awareness about the serious problems caused by plastic use and its effect on the earth by supporting recycling and sustainability efforts.

Conclave Goals and Themes

In 2024, GCPRS will focus on sustainable plastic use, especially problems related to getting rid of plastic waste and how it pollutes land, water, and air systems.

The conclave's goal is to find ways to make plastic waste management better by looking at things like collection, sorting, recycling (chemical and mechanical), and making goods that are easier to recycle. Also, the use of recycled products to make better use of resources will be talked about.

Industry Collaboration and Government Participation

Leaders in business and the government are working together to solve the problems that plastic trash causes around the world. Everyone in the value chain will be able to talk to each other at the meeting, which will help them come up with ideas and workable solutions.

With help from many ministries, including the Ministry of Chemicals and Fertilizers, the Ministry of Environment, Forest and Climate Change, and the Swachh Bharat Mission, the platform's main goal is to make practices and rules more circular when it comes to plastics.

The Indian Plastic Recycling Market

The Indian market for recovering plastic is expected to reach $6.9 billion by 2033, having grown very quickly. India is strongly pushing for better waste management and recycling methods.

Currently, about 60% of trash is recycled, and this is mostly done by people working in the informal sector. The conclave will show how more investment and more aware consumers are making trash pickup and recycling better.

Innovations and Business Opportunities

At GCPRS 2024, new recycling technologies and eco-friendly options, such as biodegradable and compostable plastics, will be shown off. Leaders in the industry and new businesses will talk about their latest innovations in garbage management that are in line with India's goal of zero waste. This could lead to new business opportunities in the recycling industry, thanks to the innovations shown by exhibitors.

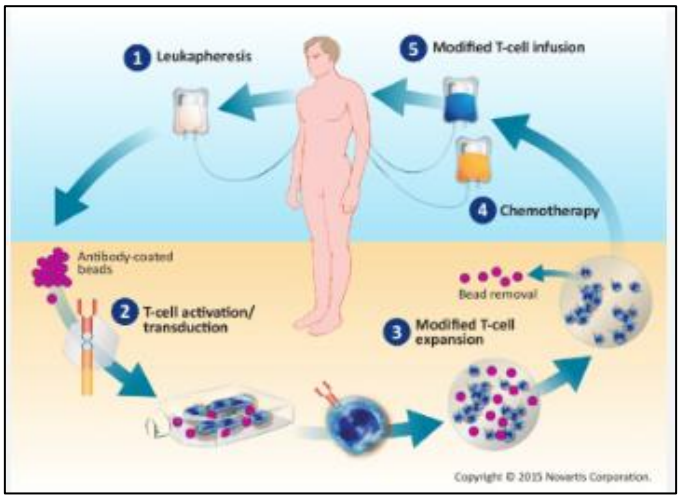
CAR-T

Car-T therapy, which is also called "chimeric antigen receptor T-cell" therapy, is a new and innovative way to treat cancer. Recently, in November 2023, the US Food and Drug Administration (FDA) began looking into whether Car-T therapy could cause new types of cancer.

By March 2024, the FDA had found 33 cases of secondary cancers in about 30,000 patients who had been treated. This led to all Car-T treatments having to have a boxed warning.

Understanding Car-T Therapy

Car-T treatment takes T-cells from a patient, changes them in a lab so they can better fight cancer cells, and then adds more of them to the patient's body. This medicine has worked very well, especially for lymphomas and multiple myeloma which are hard to treat.



Potential Causes of Secondary Cancers

The genetic changes that happen during Car-T treatment may be linked to the secondary cancers that were seen. Retroviruses used in the process could lead to "insertional mutagenesis," a process in which new genetic material could change how genes normally work and possibly cause cancer. But it's still not clear if these new cases of cancer are directly caused by Car-T treatment.

Relative Risks and Benefits

There is a chance of getting a second cancer, but it doesn't happen very often. The medicine has been very important for people with advanced cancer, where the benefits are much greater than the risks.

Also, Car-T therapy is being used more and more in other areas, like treating autoimmune diseases and stopping organ graft rejection.

Ongoing Research and Future Directions

More research is being done to make the viral vectors used in Car-T therapy safer and to see if they could be used to treat other serious diseases. Medical professionals are also dedicated to telling patients about the rare but possible risks of Car-T therapy so that patients can make smart choices about their treatment options.

About Car-T therapy

- **Revolutionary Treatment:** CAR-T therapy, or Chimeric Antigen Receptor T-cell therapy, revolutionizes cancer treatment by genetically engineering patients' T-cells to target cancer cells. Approved by the FDA in 2017, it is primarily used against acute lymphoblastic leukemia and certain non-Hodgkin lymphomas.
- **Living Drug Approach:** This one-of-a-kind "living drug" method changes a patient's T-cells outside of the body and then puts them back in to fight cancer cells.
- **Challenges and Research:** Even though CAR-T treatment works very well, it can cause neurotoxicity and cytokine release syndrome that are very bad. Researchers are still working on ways to make it safer and cheaper so that it can be used on large tumors as well.

Brain eating Amoeba

Three people have recently died in Kerala, from Primary Amoebic Meningoencephalitis (PAM), a cancerous brain illness. One of them, a 12-year-old boy from Feroke in the Kozhikode district, died at a private hospital from the illness.

What is Primary Amoebic Meningoencephalitis (PAM)?

PAM is an acute disease that can be deadly. It is caused by **Naegleria fowleri**, an amoeba that lives in warm freshwater places like lakes and rivers. When people do things like swim, this amoeba can get into their brains through their noses. It's sometimes called the "brain-eating amoeba" because it destroys brain tissue, which leads to serious swelling and death.

Infection Mechanism

When water with the amoeba in it gets into the nose, it goes into the body. From here, it goes to the brain, where it starts to do damage. Infections usually happen in warm water, where the amoeba can thrive because of the high temperatures and low water levels.

Symptoms of PAM

According to the CDC, the first signs are headaches, fevers, feeling sick, and throwing up. These can quickly get worse and lead to more serious problems like stiff neck, dizziness, loss of balance, and hallucinations. The disease moves quickly, and most people die within one to eighteen days of their first signs.

Diagnosis and Treatment

PAM is hard to diagnose because it is so rare and the early signs are so similar. For proof, lab tests are needed. Local hospitals in Kerala, like the Government Medical College Hospital in Kozhikode, are currently following CDC standards because India doesn't have its own set of treatment guidelines. These new cases show how important it is to know about this deadly infection and get medical help right away.

Junk DNA

New research from the Garvan Institute of Medical Research has shown that the non-coding regions of DNA may contain cancer-causing genes. This goes against the old idea that these regions were just "junk." This big step forward opens the door to new ways of diagnosing and treating different kinds of cancer.

Significance of Non-Coding DNA

Non-coding DNA makes up about 98% of our genome. It was once called "junk DNA" because it doesn't code for proteins. The study, which was published in Nucleic Acids Research, showed how important these areas may be. Scientists found changes in these places that might play a part in how at least 12 different types of cancer start and spread, such as prostate, breast, and colorectal cancer.

Implications for Universal Cancer Treatment

The fact that these changes are found in all types of cancer suggests that they could be used as a new target for all types of cancer treatments. This finding could lead to the creation of cancer treatments that work for more than one type. This is a big change from the way treatments are currently made, which are specific to each mutation.

Future Research Directions

The Garvan Institute wants to keep looking into this topic by changing genes with CRISVC to learn more about how these anchor mutations change the structure of the genome and help cancer grow. The results of these studies might help find important genes or pathways that could be used as early detection markers or as new therapeutic targets.

This study also shows how useful AI can be in medical research by giving researchers tools that can find important insights in huge amounts of data. The study not only helps us learn more about the genetic causes of cancer, but it also leads to new ways to diagnose and treat the disease.

Space X

Space X plans to launch Polaris Dawn, a commercial space project that is coming up soon. It is a big step forward for civilian space travel because it has the first private extravehicular activity, or "spacewalk," and its crew is made up of only civilians.

Recent Context and Significance

The mission, comes after SpaceX's Inspiration4 mission, which was the first space flight with only civilians in September 2021. Polaris Dawn is funded in large part by U.S. billionaire Jared Isaacman, who is a key figure in both missions. This shows how private people and organizations are playing an increasingly important role in space exploration.

Objectives and Innovations

Polaris Dawn wants to reach several important goals. One of the most important ones is doing the first private spacewalk. The mission will also focus on scientific study that is important for human health in space.

This will include experiments that will be done in conditions of low gravity. Another new technology that is being tried is adding Starlink WiFi to their spacecraft. This could make it easier for future space missions to communicate.

Mission Details

The SpaceX Crew Dragon capsule, which has been used before for crewed spaceflight, is the craft chosen for this trip. Jared Isaacman is one of the four team members that Polaris Dawn will take into space. The mission aims to reach a high orbit about 700 kilometers above Earth.

This will be the highest-altitude flight with people on board since the Apollo moon trip. The crew should spend about five days in orbit around Earth, which will give them plenty of time to do the planned tests and the spacewalk.

The Polaris Dawn mission could have a big impact on future policy and progress in international space exploration by making it easier for civilians to go into space and trying new technologies. If it goes well, it will make civilian-led missions more likely to succeed and keep people safe. This will lead to more private investment and public interest in the field.

SpaceX

- **Pioneering Achievements**:
- SpaceX was started by Elon Musk in 2002 and has reached many important milestones. For example, in 2008, Falcon 1 was launched, becoming the first privately funded liquid-fueled rocket to reach orbit. Dragon was the first commercial spaceship to bring goods to the International Space Station (ISS) in 2010.
- **Innovative Projects**: In 2018, SpaceX's Falcon Heavy, the world's most powerful working rocket, took its first flight. The company started the Starlink project in 2015 to use an array of satellites to connect everyone in the world to the internet.

- **Crewed Space Missions**: In 2020, SpaceX's Crew Dragon spacecraft finished its first crewed flight. This was the first time that the United States could send crews into space since the Space Shuttle era, and it solidified.
- Space's position as a leader in manned space exploration.

Digital Bharat Nidhi

The Department of Telecommunications (DoT) on July 4 released draft rules to operationalise the Digital Bharat Nidhi, in a fresh attempt by the central government at increasing telecom connectivity in rural areas.

Background:

- With the Centre notifying parts of the Telecom Act last month, it has also proposed additional rules for the final makeover of the Universal Service Obligation Fund (USOF) as the Digital Bharat Nidhi (DBN) – which would have a relatively wider scope than the USOF.

About Digital Bharat Nidhi

- Digital Bharat Nidhi would replace the erstwhile Universal Service Obligation Fund (USOF), which is a pool of funds generated by a 5 per cent Universal Service Levy charged upon all the telecom fund operators on their Adjusted Gross Revenue (AGR). Since its establishment in 2003, a common criticism of the USOF has been its relative underutilisation.
- The idea is that this money would be used to fund the expansion of telecom networks in remote and rural areas, where private companies may otherwise resist offering their services due to them not being revenue-generating markets.

How the Digital Bharat Nidhi will work

- As per the Telecom Act, contributions made by telecom companies towards the Digital Bharat Nidhi will first be credited to the Consolidated Fund of India (CFI). The Centre will deposit the collected funds to the DBN from time to time.

- Funds collected under the DBN will be used to support universal service through promoting access to and delivery of telecommunication services in underserved rural, remote and urban areas; fund research and development of telecommunication services, technologies, and products; support pilot projects, consultancy assistance and advisory support for improving connectivity; and for the introduction of telecommunication services, technologies, and products.

For Your Information:

- On June 26, multiple sections of the Telecommunications Act, 2023 came into effect, giving way to the first piece of the larger technology legislative puzzle to fall into place. This is among the three key laws the Centre wants to put together as a comprehensive legal framework for the country's burgeoning tech sector.

Understanding the Telecommunications Act

The Indian Telegraph Act of 1885 and the Indian Wireless Telegraph Act of 1933 are two laws that have been updated and replaced by the Telecommunications Act. This change is in response to the huge technology advances and changes in the communications field. The Act's main purpose is to set up a complex legal system for managing and allocating the telecommunications spectrum.

Spectrum Utilisation and Management

The parts that were just made public are all about making the best use of the telecommunications spectrum.

The rules allow different actions, like giving up, sharing, selling, leasing, and assigning the spectrum to someone else.

The goal of these plans is to make sure that the spectrum, which is a limited resource, is used in the best way possible and can be changed to fit new technologies. In addition, the act supports a technology-neutral method that lets spectrum use be flexible and open to more options.

Regulatory Changes and Appointments

Section 59(b) of the Act changes Section 4 of the Telecommunications Regulatory Authority of India (Trai) Act 1997. It sets new rules for how the Chairperson and members of TRAI are chosen.

This change is very important to make sure that the governing body is run by people who meet the higher standards and requirements of today's telecoms industry.

Impact and Enforcement

The Act not only changes the rules, but it also gives the Central Government the power to set up effective ways to police the rules and keep an eye on things. As part of this, it is illegal to use any communication equipment that stops calls unless the government specifically allows it.

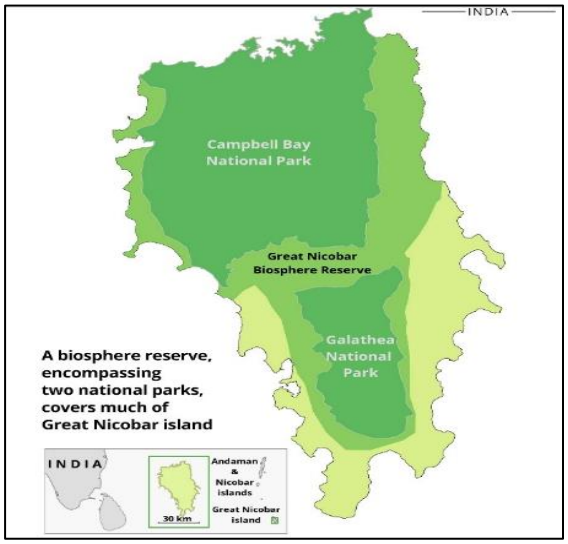
These kinds of steps are necessary to keep telecom services safe and secure. To sum up, the Telecommunications law sets up a complete and up-to-date system for handling the telecommunications spectrum and regulatory appointments. This makes sure that the sector keeps up with changes in technology and uses a system that is both efficient and adaptable.

About Telecom Regulatory Authority of India (TRAI)

- **Regulatory Oversight**: Established in 1997, the Telecom Regulatory Authority of India (TRAI) regulates the telecommunications sector in India. Its mission includes ensuring compliance, promoting competition, and ensuring efficient telecom services.
- **Consumer Protection:** In 2007, TRAI created the National Do Not Call Registry to stop telemarketing scams. In 2018, they put in place the "Telecom Commercial Communications
- Customer Preference Regulations" to stop unwanted business calls.
- **Service Quality Monitoring**: TRAI is in charge of regulating cable and television services. It also released the "MySpeed" app, which lets people check their internet speed and report it straight to the government. This makes sure that everything is clear and that the service is good.

Great Nicobar Project

A huge building project worth 72,000 crore is being closely examined on the Great Nicobar Island because of what people think are its possible effects on the environment, the law, and morality. As part of the project, services like an international airport and a trans-shipment port will be built. People don't like how the project's public consultations have been handled, especially how the Shompen and Nicobarese Indigenous groups were left out of the Social Impact Assessment (SIA) that was done in June 2020.



Consultation and Community Impact

The local tribal groups were not invited to the public hearing for the draft SIA report. This mostly affected the Shompen, a Particularly Vulnerable Tribal Group (PVTG), and the Nicobarese, a Scheduled Tribe (ST).

The draft SIA, which was an important part of meeting the requirements of the Land Acquisition Act, strangely didn't talk about the indigenous people. Instead, it focused on the landowners of the areas that were going to be taken over.

Environmental and Social Concerns

For the project to go forward, 404.8 hectares of private land will have to be bought and about 130 square kilometers of forest land will have to be diverted. This will affect about a million trees. Environmentalists and social scientists say the project could be very bad for the local

environments. They say it could destroy coral reefs, marine life, and the homes of rare species like the Nicobar Megapode bird and leatherback turtles. Native American tribes that rely on these lands for their livelihoods being forced to leave them is a serious social and moral problem.

Legal and Administrative Responses

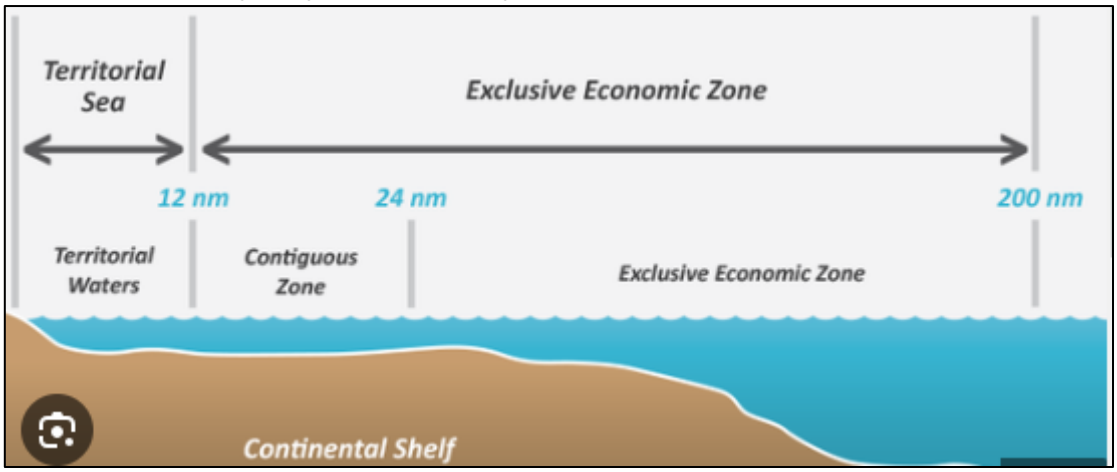
Because of the limited view on community effect, 103 retired civil servants wrote to different government bodies to criticize the shallow assessment of the local community's impact and ask that the SIA be rethought to include the Indigenous populations. Even with these complaints, officials say that the land that was bought does not touch native reserves because the project was not reported to them before.

About Great Nicobar Island

- **Geographical Significance:** Great Nicobar Island, the largest of the Nicobar Islands in India, spans roughly 1,045 square kilometers and houses Indira Point, India's southernmost tip, which partly submerged after the 2004 tsunami.
- **Unique Biodiversity:** The island features unique biodiversity, including the Nicobar megapode, a rare bird species that builds mounds to incubate eggs using solar heat. It is also home to the indigenous Shompen and Nicobarese tribes, known for their distinct cultures.
- **Strategic and Environmental Importance:** India's naval base in Great Nicobar strengthens the country's maritime position in the area, making it a strategically important island. The island is also an important part of the Great Nicobar Biosphere Reserve, which was made by UNESCO to protect its tropical forests and coastal habitats.

High Seas Treaty

The Indian government has said that it will sign and approve the High Seas Treaty. The goal of this international deal is to protect marine biodiversity and make sure that ocean resources are used in a way that doesn't harm the environment. The treaty, which was reached after almost 20 years of talks, is a plan to protect the high seas, which are places that are not controlled by any one country.



Treaty Overview

The pact, which is officially called the Agreement on Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ) aims to protect ocean environments and cut down on pollution.

National exclusive economic zones (EEZs), which are 200 nautical miles from coasts, do not cover the high seas, which make up about 64% of the world's oceans.

Importance of the Treaty

In terms of how important it is for the atmosphere, the High Seas Treaty is often compared to the Paris Agreement from 2015. It talks about problems like using up too many resources, losing species, and ocean pollution from things like plastic trash. The treaty is an implementation agreement for the 1982 United Nations Convention on the Law of the Sea (UNCLOS). UNCLOS sets rules for actions in the sea but doesn't have any specific ways to protect biodiversity.

Core Objectives and Mechanisms

The main goals of the pact are:

- Protecting and preserving sea life by creating sea Protected Areas (MPAs) where activities are limited to avoid harming the environment.
- Fair distribution of the benefits that come from using marine genetic resources, which could be very important for both scientific study and business.
- Making environmental impact assessments (EIAs) mandatory for any actions that might be bad for the environment. Even activities planned within national borders must go through these reviews if they will have an impact on the high seas.

Ratification and Implementation

It needs to be signed by at least 60 countries for the High Seas Treaty to be valid. The treaty will become international law 120 days after it has been signed by 60 countries. Ratification means that a country is legally bound by the terms of the treaty.

This can happen after the treaty is approved by the country's legislature or through an executive decision, based on the legal system of the country.

As of now, 91 countries have signed the pact, and eight have already sent in their ratifications. By joining this global effort, countries promise to take care of the ocean's resources as a group, which is important for long-term survival and ecological balance.

About the High Seas Treaty

By 2030, the UN High Seas Treaty, which was signed in 2023, plans to protect 30% of the world's seas. It sets up marine protected areas outside of national seas that cover about two-thirds of the ocean.

The treaty improves international cooperation on ocean conservation, requires commercial activities to do environmental effect assessments, makes sure that marine genetic resources are shared fairly, and encourages nations to build their skills and share technology.
To be successful, the Treaty needs to be ratified by 60 countries before it can go into effect. This will fix the problem of not having a complete set of laws that applied across national borders.

China's military presence near Pangong Lake

According to recent satellite images, China's military presence near Pangong Lake in eastern Ladakh is escalating.

Background:

- These images reveal extensive underground bunkers and hardened shelters at a crucial base. The base, located at Sirjap on the northern shore of Pangong Lake, serves as the headquarters for Chinese troops stationed around the lake.

Key Takeaways

- Pangong Tso, also known as Pangong Lake, is a high-altitude lake situated in the Changthang region of eastern Ladakh.
- Pangong Tso spans both India and China. Approximately 50% of the lake lies within Tibet (administered by China), while 40% is in Indian-administered Ladakh. The remaining 10% is a disputed buffer zone between India and China.

Disputed Territory:

- The Line of Actual Control (LAC), which separates boundary between India and China, passes through the lake.
- This geopolitical demarcation has been a point of contention between the two countries.
- India controls about 45 kilometers of the lake's stretch, while China claims the rest.
- The lake's strategic significance lies in its proximity to the Chusul Valley, a historical battlefront during the 1962 India-China war.

Zombie startups

Koo, the Indian social media platform that aimed to rival Twitter has shut down.This has brought the topic of zombie startups into limelight once again.

Background:

- Tech startups once blessed with huge fundings are transforming into "zombies".

Key takeaways

- Startups that raised a huge amount of money over the boom cycle but aren't producing nearly enough revenue to justify the valuation are called 'Zombie startups'.
- Or to define it another way, Zombie startups, also known as "walking dead" companies, are businesses that continue to operate despite being unprofitable or stagnant.

National Commission for Minorities (NCM)

The National Commission for Minorities (NCM) took initiative to discuss the implementation and registration of Sikh marriages under the Anand Marriage Act with 18 States/UTs.

Background:

- Jharkhand, Maharashtra, and Meghalaya reported that they have already implemented the Act, while the remaining States/UTs assured that they would implement it within two months.

National Commission for Minorities (NCM)

- The National Commission for Minorities (NCM) in India is a statutory body established under the National Commission for Minorities Act, 1992.
- It replaced an earlier non-statutory body called the Minorities Commission.
- The NCM's primary role is to work for the development of recognized minority communities in India.
- The NCM is composed of the following members:
    - Chairperson
    - Vice-Chairperson
    - Five Members
- These seven individuals are nominated by the Central Government from among persons of eminence, ability, and integrity.
- Each member serves a three-year term from the date of assuming office.
- Minority Communities:
- Initially, five religious communities were notified as minority communities by the Union Government: Muslims, Christians, Sikhs, Buddhists, and Zoroastrians (Parsis).
- Later, Jains were also notified as another minority community in 2014.

Functions:

- The NCM looks into matters related to the status of minority communities in India.
- It investigates complaints made by minority communities.
- The NCM safeguards and protects the interests of minorities as provided in the Constitution of India and relevant laws.

Anand Marriage Act:

- The Anand Marriage Act is a law that allows Sikhs to register their marriages under a separate act, rather than the Hindu Marriage Act.
- This act is significant for the Sikh community as it provides legal recognition to their traditional marriage ceremonies.
- It recognises the Sikh marriage ceremony called Anand Karaj.

Muslim Women (Protection of Rights on Divorce) Act

Why in News?

In the case of ***Mohd Abdul Samad v. the State of Telangana, 2024***, the **Supreme Court (SC) of India,** dismissed a petition challenging the applicability of **Section 125 of the Criminal Procedure Code (CrPC)** to a divorced Muslim woman.

What is the Muslim Women (Protection of Rights on Divorce) Act, 1986?

- **Purpose:** The Act was enacted to protect the rights of Muslim women who have been divorced by, or have obtained divorce from, their husbands. It provides for matters connected with or incidental to the protection of these rights.
  - This Act was a response to the ***Mohd. Ahmad Khan vs. Shah Bano Begum, 1985***. In which the **SC delivered held that section 125 of the CrPC** is a secular provision **applicable to all, irrespective of religion.**
  - The right to maintenance under CrPC is not negated by provisions of personal law.

Provisions:

- A divorced Muslim woman is **entitled to a reasonable and fair provision and maintenance** from her former husband, to be paid within the ***iddat*** **period.**
  - ***Iddat*** **is a period, usually of three months**, which a woman must observe after the death of her husband or a divorce before she can remarry.
- The Act also covers the payment of ***mahr*** **(dower)** and the return of properties given to the woman at the time of marriage.

- It allows a divorced woman and her former husband to choose to be governed by the **provisions of sections 125 to 128 of the CrPC, 1973**. If they make a joint or separate declaration to this effect at the first hearing of the application.

Evolution:

- A Constitution bench of the SC had in its 2001 judgement in the case *Danial Latifi & Another vs Union Of India* upheld the constitutional validity of the 1986 Act and said that its provisions do not offend **Articles 14, 15 and 21** of the Constitution of India.

- It extended the right of Muslim women to receive maintenance until they remarry **beyond the iddat period**.

- ***Shabana Bano v. Imran Khan Case, 2009:*** *The SC reiterated that divorced Muslim women could claim maintenance under Section 125 of the CrPC, even beyond the iddat period,* ***as long as they do not remarry.*** *This affirmed the principle that the CrPC provision applies irrespective of religion.*

What Does Section 125 of the CrPC Say?

- Section 125 of the CrPC mandates that a **Magistrate of the first class** may order a **person with sufficient means to make a monthly allowance for the maintenance** of:
  - His wife, if she is unable to maintain herself.
  - His legitimate or illegitimate minor child, whether married or not, unable to maintain itself.
  - His legitimate or illegitimate adult child with physical or mental abnormalities or injuries that render them unable to maintain themselves.
  - His father or mother, unable to maintain themselves.

What are the Supreme Court Observations?

- SC held that **Section 125 CrPC applies to all women,** not just married women. It emphasised that the provision would apply universally.
- The SC's judgement reaffirms the rights of divorced Muslim women to claim maintenance under Section 125 CrPC, ensuring legal parity and safeguarding constitutional **guarantees of equality and non-discrimination.**
- The Supreme Court dismissed the appeal, reaffirming that Muslim women can seek maintenance under **Section 125 CrPC despite the existence of the 1986 Act.**
- The Court noted that Section 3 of the 1986 Act, starting with a **non-obstante clause, does not restrict the application** of Section 125 CrPC, but rather provides an additional remedy.
- The SC emphasised the need for **Indian men to financially empower their wives who lack independent income.** It highlighted the **difference between financially independent or employed married women** and those who stay at home without any means to meet their personal expenses.
- The Court affirmed that divorced Muslim women, including those divorced through **triple talaq (now deemed illegal),** can claim maintenance under Section 125 CrPC irrespective of personal laws.
  - Triple talaq has been declared as void by the SC and criminalised by the **Muslim Women (Protection of Rights on Marriage) Act 2019.**

"Zorawar"

India recently got a new light tank called the "Zorawar." It is a big addition to their military and is meant to help them fight better in difficult terrains and at high elevations.

India's Defense Research and Development Organization (DRDO) and the tech company Larsen & Toubro worked together to make this new tank.

Design and Capabilities

The "Zorawar" tank was created and built in an impressive two years, showing how quickly India's defense technology sector is growing. The 105mm rifled gun that it comes with lets it fire accurately.

In addition, the tank has cutting-edge hybrid modular armor to make it safer. With John Cockerill's help, a complex turret was added that lets electro-optical cameras and anti-tank guided rockets be used, which increases its effectiveness.

Engine and Mobility

At first, it had a 750 HP engine from Cummins, but that will be replaced with one made in India in the future as part of India's plan to become more self-sufficient in defense manufacturing. "Zorawar" can also operate from both land and water, so it can be used effectively on a variety of terrains, including those with water hazards.

Xenophrys apatani

Xenophrys apatani is a new species of horned frog that was just named by scientists from the Zoological Survey of India (ZSI). The find was made in the Tale Wildlife Sanctuary in Arunachal Pradesh, which is in the heavily forested northeastern parts of India. At first, this species was thought to be the Maoson horned frog (Xenophrys maosonensis), which lives in Vietnam and China.

About Xenophrys apatani

- **Discovery and Habitat**: This type of megophryid frog was found in the Talle Valley Wildlife Sanctuary in Arunachal Pradesh, India. This amphibian lives mostly under leaves in subtropical woods. It was named after the Apatani tribe from the Ziro Valley.

- **Distinctive Features**: Xenophrys apatani is a unique brown plant with dark spots that adds to the diverse range of plants and animals that live in the Eastern Himalayas. Because it looks different from other animals, it can hide in its natural environment.
- **Conservation Significance**: Indian researchers found Xenophrys apatani for the first time in 2019. It shows how important it is to protect these ecologically sensitive places, especially since habitats are being lost.

No Child labour in mica mines of Jharkhand

The National Commission for Protection of Child Rights (NCPCR) just recently said that there is no child labor in the mica mines of Jharkhand. The news was made at a big party in Koderma. It was a big step forward in the long-running fight against child labor in the area.

Background and Challenges

About twenty years ago, disturbing facts came to light about child labor in the mica mining business in Jharkhand. This was the start of the journey.

In 2004, Bachpan Bachao Andolan did a study that showed that more than 5,000 kids were digging for and collecting mica in dangerous ways.

It was scary to see that this number had grown to more than 20,000 by 2019. This showed how important it is to have a focused and successful plan to stop child labor right away.

The 'Child Labour Free Mica' Initiative

A strategy plan called "Child Labor Free Mica" was created and put into action by a group of people from different groups, such as the community, non-governmental organizations (NGOs), and state and local governments.

A big part of this project was getting kids and people in the neighborhood to directly fight for their rights and come up with solutions.

The program's main goals were to find children who were digging mica, save them, and get them into school. The program also tried to keep these kids in school so that they wouldn't have to go back to dangerous work.

Achievements and Impact

Priyank Kanoongo, head of the NCPCR, says that all children who were involved in mica mining have been taken off the job and put in school. Not only is this a big win for the regions involved, but it also sets an example for similar steps to be taken around the world to stop child labor in unorganized sectors.

About NCPCR

Establishment and Purpose: The National Commission for Protection of Child Rights (NCPCR) was established in 2007 under the CPCR Act, 2005 in India to safeguard child rights.

It functions under the Ministry of Women and Child Development.

- The Commission is further mandated to monitor the proper and effective implementation of
  - **Protection of Children from Sexual Offences (POCSO) Act, 2012**.
  - **Juvenile Justice (Care and Protection of Children) Act, 2015**.
  - **Right to Free and Compulsory Education (RTE) Act, 2009**.
- India has acceded to the **Convention on the Rights of the Child (CRC) in 1992** which is an international treaty that makes it incumbent upon the signatory States to take all necessary steps to protect children's rights enumerated in the Convention.

Exercise Pitch Black

The Royal Australian Air Force (RAAF) will start "Exercise Pitch Black" on July 12, 2024. This is a major multinational aerial warfare practice that is held in Australia every two years.

Over 140 planes from around the world are taking part in this year's drill, which is the biggest one in the 43-year history of the event.

The India Air Force (IAF) has said it will take part in the drill, which will run from July 12 to August 2, 2024, sending Su-30 MKI fighter jets.

National Registry of Citizens

An apex body of the Kuki-Zo community on July 6 said it would not oppose the implementation of the National Register of Citizens (NRC) in Manipur if it was carried out under the supervision of the Supreme Court.

Background:

- Meitei and Naga organisations have been demanding the implementation of the National Register of Citizens to check infiltration from Myanmar.

About National Register of Citizens (NRC) :

- The National Register of Citizens (NRC) is a register of all Indian citizens.
- Its creation was mandated by the 2003 amendment of the Citizenship Act, 1955.
- The purpose of the NRC is to document legal citizens of India, allowing authorities to identify and deport illegal immigrants.
- The National Register of Citizens (NRC) was first implemented in the northeastern state of Assam.

- The nodal office for the implementation of the National Register of Citizens (NRC) is the Office of the Registrar General & Census Commissioner, India, which is responsible for preparing and updating the NRC.
- The main objective of the National Register of Citizens (NRC):
  - Detect illegal immigrants living in different states of India
  - Identify and separate legal and illegal immigrants in India
  - Prevent voter fraud
  - Enhance internal security

National Population Register (NPR)	National Register of Citizens (NRC)
All people staying in India 6 months and above and who intends to reside for 6 months or more including foreigners	Indian born or Indian parents or staying in India for 11 years are eligible for Indian Citizenship
Prepared with Census 2011 and was updated in 2015. The next update is scheduled during the next census from April 1, 2020 and September 30, 2020. Only Assam would not participate in this activity	First prepared during 1951 census and it is not updated regularly. Assam is the only state in the country where the NRC is updated
NPR is not a citizenship enumeration drive as it includes foreigners as well	NRC is a citizenship enumeration drive as it includes Indian citizens only
It is compulsory for all Indian residents to register with the NPR. The main purpose of the NPR is to identify illegal migrants and identify them as foreign nationals.	NRC is a subset of NPR where only the citizens of Indian are taken into account

Axiom-4 mission and Gaganyaan

The Indian Space Research Organisation (ISRO) has selected two out of its four trained Gaganyaan astronauts to participate in the Axiom-4 mission.

Background:

- Only one of the shortlisted astronauts will go on the mission which is supposed to take place "no earlier than October 2024," according to the information available on NASA website.

About AXIOM-4 :

- The Axiom-4 mission is a private spaceflight to the International Space Station (ISS) conducted by Axiom Space in collaboration with NASA.
- It will be the fourth private astronaut mission to the ISS.
- The mission will last for fourteen days.

Spacecraft:

- The spacecraft used for the Axiom-4 mission is a SpaceX Crew Dragon.

Indian Involvement:

- The Indian Space Research Organisation (ISRO) has shortlisted two of its four trained Gaganyaan astronauts to participate in the mission.
- These Indian astronauts will receive training from NASA, international partners, and SpaceX.

Objectives:

- The mission aims to facilitate commercial activities in space, including scientific research, technological development, and space tourism.
- It will demonstrate the viability of commercial space stations as platforms for business and innovation.

Diverse Crew:

- The Axiom-4 mission will carry a diverse crew of astronauts from different countries.

Scientific Experiments:

- During the mission, various scientific experiments and technological tests will be conducted in the unique microgravity environment of space.

Gaganyaan Mission

- The Gaganyaan Mission is India's ongoing project to send a 3-day manned mission to the Low Earth Orbit (LEO) of 400 km with a crew of 3 members and bring them safely back to Earth.
- The objective of the program is to demonstrate India's human spaceflight capabilities.
- As part of this program, two unmanned missions and one manned mission are approved by the Government of India.
- Upon its completion, India will become the fourth nation, after the US, Russia, and China, to undertake a manned spaceflight mission.

Super Earth

New information has been found about LHS 1140 b, an exoplanet 48 light-years away in the constellation Cetus. The team of foreign researchers was led by the Université de Montréal.

Their study, which was published in The Astrophysical Journal Letters, suggests that LHS 1140 b may be a super-Earth that is probably full of water or ice. This goes against the earlier idea that it was a miniature Neptune.

Initial Assumptions

LHS 1140 b was once thought to be a small Neptune with a thick, hydrogen-rich atmosphere. This classification was based on how big it was and what scientists thought it was made of based on studies made with telescopes in the past.

Groundbreaking Data from JWST

Scientists' ideas about LHS 1140 b have changed since they got new information from the James Webb Space Telescope (JWST).

Based on the findings, the planet might not have a gas envelope but instead have a rocky or water-rich surface.

Ibiza wall lizard

The IUCN recently updated the Red List that make it more important to protect a number of lizard and cactus species. The Ibiza wall lizard has been reclassified as threatened, mostly because of invasive species and other problems caused by people.

Key Factors Contributing to Decline

1. **Invasive Species:** The horseshoe whip snake that was brought to Ibiza and the California kingsnake that was brought to Gran Canaria have had a big effect on local reptiles. These invasive species fight with native species for resources and eat them.
2. **Illegal Trade:** There is a lot of illegal trade of ornamental cacti because they are so popular. This trade hurts populations in their natural environments the most. This problem has gotten worse thanks to social media and world trade.
3. **Changes in the environment:** Climate change and building new roads and bridges are changing landscapes and natural processes that are very important for local plants and animals to stay alive. For example, it has been said that changes in marine fog patterns are important for keeping Copiapoa cacti moist.

Impact on Specific Species

- Since 2010, the number of Ibiza wall lizards has dropped by 50%.

Proposed Solutions and Future Outlook

To stop these drops, strong laws are being put in place to stop illegal trade, habitat management is being changed to benefit conservation, and countries are working together to stop poaching. Research and educating the public are also very important for making safety measures better.

Growing cacti in greenhouses is a safe way to grow species that are in danger of going extinct, which could help wild populations.

The IUCN's most recent updates show how important it is to start world conservation efforts right away. These attempts are very important if we want to stop the trends that are putting these unique species at risk of going extinct

Lebanon-Israel 'Blue Line' frontier

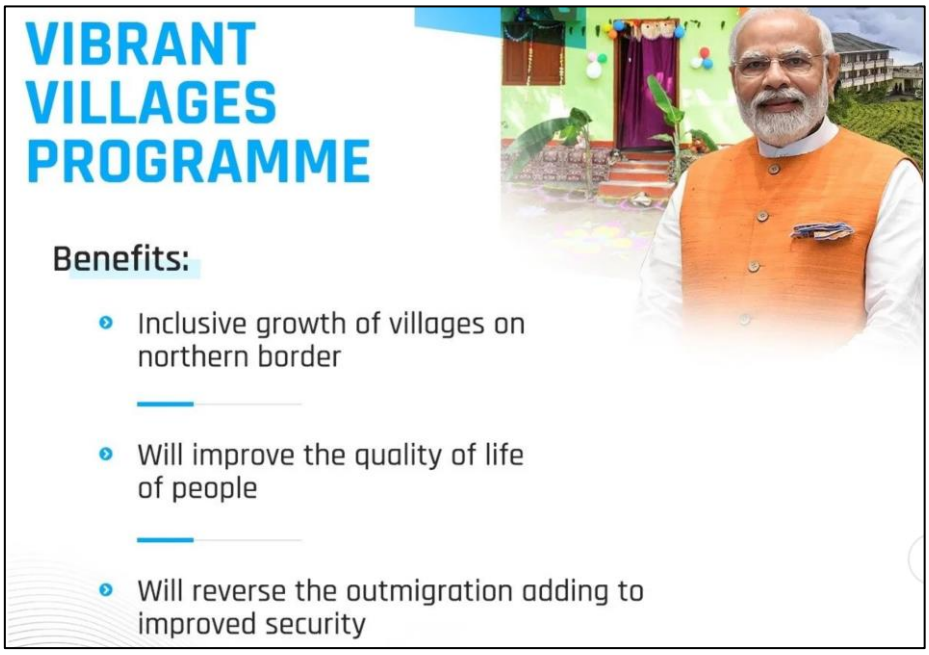
The United Nations (UN) has expressed deep concern over the recent escalation of tensions along the Lebanon-Israel 'Blue Line' frontier.

Vibrant Villages program

Union Home Minister Amit Shah recently reviewed the implementation of Vibrant Villages Programme.

Background:-

- Vibrant Villages Programme was **first announced in the 2022 Budget.** The programme's targets are to provide comprehensive development of villages on the border with China and improvement in the quality of life of people living in identified border villages.



About Vibrant Villages Programme

- Government approved Vibrant Villages Programme (VVP) as a Centrally Sponsored Scheme in February 2023, with financial outlay of ₹4800 crore for the FY 2022-23 to 2025-26.
- It aims for comprehensive development of the select villages in 46 blocks in 19 districts abutting northern border in the States of Arunachal Pradesh, Himachal Pradesh, Sikkim, Uttarakhand and UT of Ladakh.
- The objective of the programme is comprehensive development of these villages to improve the quality of life of people & thereby reversing outmigration.
- The programme envisages focused areas of interventions in the select villages for creation of opportunities for livelihood generation through promotion of tourism & cultural heritage, skill development & entrepreneurship and development of cooperative societies including agriculture/horticulture, cultivation of medicinal plants/herbs etc. the interventions also include providing road connectivity to unconnected villages, housing & village infrastructures, energy including renewable energy, television & telecom connectivity.
- VVP has been conceived as an outcome oriented programme with outcome indicators at three levels- village, household & individual beneficiary.

Salvinia Molesta

An exotic beetle released into a vast reservoir in Betul district (Madhya Pradesh) has successfully eradicated an invasive weed species, Salvinia molesta, within 18 months.

Background:

- Cyrtobagus salvinia, the exotic beetle , was imported to India after thorough research and with the necessary governmental approvals. Within 15 to 18 months, its population multiplied significantly, effectively consuming and destroying the weed.

SALVINIA MOLESTA :

- Salvinia molesta, commonly known as giant salvinia, or as kariba weed after it infested a large portion of Lake Kariba between Zimbabwe and Zambia, is an aquatic fern, native to south-eastern Brazil.
- It is a free-floating plant that does not attach to the soil, but instead remains buoyant on the surface of a body of water.
- It thrives in slow-moving, nutrient-rich, warm, freshwater. A rapidly growing competitive plant, it is dispersed long distances within a waterbody (via water currents) and between waterbodies (via animals and contaminated equipment, boats or vehicles).

- Salvinia molesta may form dense vegetation mats that reduce water-flow and lower the light and oxygen levels in the water. This stagnant dark environment negatively affects the biodiversity and abundance of freshwater species, including fish and submerged aquatic plants.
- Salvinia molesta can alter wetland ecosystems and cause wetland loss and also poses a severe threat to socio-economic activities dependent on open, flowing and/or high quality waterbodies.
- It is on the list of the World's 100 Most Invasive Species.

SDG India Index 2023-24

NITI Aayog recently released the SDG India Index 2023-24, which evaluates India's progress on the 16 Sustainable Development Goals (SDGs).

Background:

- India's commitment to the SDGs since adopting the 2030 Agenda on Sustainable Development is reflected in concerted efforts on SDG localisation spearheaded by NITI Aayog, which works closely with States and UTs.

About SDG India Index :

- The SDG India Index provides a holistic view of the social, economic, and environmental status of the country and its states and union territories.
- The NITI Aayog, in collaboration with the United Nations in India, releases the SDG India Index.
- It helps in monitoring and evaluating the progress towards the 16 SDGs adopted by the United Nations in 2015.
- The Index uses a set of 113 indicators to assess performance across various parameters such as health, education, gender equality, climate action, economic growth, and environmental sustainability.
- SDG India Index 2023-24 measures and tracks national progress of all States and UTs on 113 indicators aligned to the Ministry of Statistics and Programme Implementation's (MoSPI) National Indicator Framework (NIF).

SDG India Index 2023-24 Highlights:

- Overall Score: India's overall SDG score improved to 71 in 2023-24, up from 66 in 2020-21 and 57 in 2018.
- Top Performing States: Kerala and Uttarakhand achieved the highest scores of 79 each.
- Significant Progress: Notable advancements in Goals 1 (No Poverty), 8 (Decent Work and Economic Growth), 13 (Climate Action), and 15 (Life on Land).
- Fastest Moving States: Uttar Pradesh (increase by 25 points), followed by J&K (21), Uttarakhand (19), Sikkim (18), Haryana (17), Assam, Tripura, and Punjab (16 each), Madhya Pradesh and Odisha (15 each).
- New Entrants in Front-Runner Category: Arunachal Pradesh, Assam, Chhattisgarh, Madhya Pradesh, Manipur, Odisha, Rajasthan, Uttar Pradesh, West Bengal, and Dadra and Nagar Haveli and Daman and Diu.

Key Initiatives Contributing to Progress:

- Government Programs: Pradhan Mantri Awas Yojana, Ujjwala, Swachh Bharat, Jan Dhan, Ayushman Bharat-PMJAY, Ayushman Arogya Mandir, PM-Mudra Yojana, Saubhgaya, Start-up India.
- SDG Localisation: Efforts spearheaded by NITI Aayog, working closely with States and UTs to promote competitive and cooperative federalism.

PM SHRI Schools

The Education Ministry has stopped funds under the Samagra Shiksha Abhiyan (SSA), the flagship school education programme, to Delhi, Punjab and West Bengal because of their reluctance to participate in the Pradhan Mantri Schools for Rising India (PM-SHRI) scheme.

Background:-

- Delhi and Punjab refused to participate since the two states, ruled by the Aam Aadmi Party, already run a similar scheme for exemplar schools called "Schools of Eminence". West Bengal opposed prefixing "PM-SHRI" to the names of their schools.

About Pradhan Mantri Schools for Rising India (PM-SHRI)

- The PM SHRI is a centrally sponsored scheme initiated by the Government of India.
- Its objective is to establish over 14,500 PM SHRI Schools, overseen by the Central Government, State/UT Governments, local bodies, as well as Kendriya Vidyalaya Sangathan (KVS) and Navodaya Vidyalaya Samiti (NVS).
- These schools aim to create an inclusive and welcoming atmosphere for every student, ensuring their well-being and providing a secure and enriching learning environment.
- The goal is to offer a diverse range of learning experiences and ensure access to good physical infrastructure and appropriate resources for all students.
- These schools will not only focus on enhancing cognitive development but also creating holistic and well-rounded individuals equipped with key 21st-century skills.
- The pedagogy adopted in these schools will be more experiential, holistic, integrated, play/toy-based (particularly in the foundational years), inquiry-driven, discovery-oriented, learner-centred, discussion-based, flexible, and enjoyable.
- The focus will be on the learning outcomes of every child in every grade. Assessment at all levels will be based on conceptual understanding and application of knowledge to real-life situations and will be competency-based.
- PM SHRI Schools will help showcase the implementation of the National Education Policy 2020 and emerge as exemplar Schools over a period of time.

Indian Leopard

The Indian leopard (Panthera pardus fusca) is suspected to have declined 24.5 per cent over the last three generations, according to the latest assessment by the International Union for Conservation of Nature (IUCN).

Background:

- The decline is suspected from range loss and inferred based on actual or potential levels of exploitation.

About Indian Leopard :

- The Indian leopard (Panthera pardus fusca) is a subspecies of the leopard (P. pardus) widely distributed on the Indian subcontinent.

- Nine subspecies of the leopard have been recognized, and they are distributed across Africa and Asia.
- The leopard is the smallest of the big cats, and known for its ability to adapt in a variety of habitats.
- Melanism is a common occurrence in leopards, wherein the entire skin of the animal is black in colour, including its spots. A melanistic leopard is often called black panther or jaguar, and mistakenly thought to be a different species.
- A nocturnal animal, the leopard hunts by night. It feeds on smaller species of herbivores found in its range, such as the chital, hog deer and wild boar.
- An extremely agile creature, it spends most of its resting time on top of trees, using land only to move locations, but rarely to rest or nap.
- It is classified as Near Threatened by IUCN.
- It is Listed in Schedule I of the Indian Wildlife (Protection) Act, 1972 and included in Appendix I of CITES.

Mahabodhi temple complex

A geospatial analysis utilising satellite images and ground surveys has found evidence of the presence of "huge architectural wealth" buried in the Mahabodhi temple complex and its surroundings in Bihar's Bodh Gaya.

Background:

In the context of philosophical and cultural history, Mahabodhi Temple Complex is of great relevance as it marks the most important event in the life of Lord Buddha, the moment when Prince Siddhartha attained Enlightenment and became Buddha, an event that shaped human thought and belief.

About Mahabodhi Temple Complex:

- It is one of the four holy sites related to the life of the Lord Buddha, and particularly to the attainment of Enlightenment.
- The Mahabodhi Temple Complex is the first temple built by Emperor Asoka in the 3rd century B.C., and the present temple dates from the 5th–6th centuries.
- It is one of the earliest Buddhist temples built entirely in brick, still standing, from the late Gupta period and it is considered to have had significant influence in the development of brick architecture over the centuries.
- The present Mahabodhi Temple Complex at Bodh Gaya comprises the 50 m high grand Temple, the Vajrasana, sacred Bodhi Tree and other six sacred sites of Buddha's enlightenment, surrounded by numerous ancient stupas, well maintained and protected by inner, middle and outer circular boundaries.
- Next to the Bodhi Tree there is a platform attached to the main temple made of polished sandstone known as Vajrasana (the Diamond Throne), originally installed by Emperor Asoka to mark the spot where Buddha sat and meditated.

Syphilis

Improved testing has led to the detection of over 6,000 cases of syphilis, according to data from the Mumbai AIDS Control Society (MDACS) between 2018-19 and 2022-23.

Background:

- The antibiotic penicillin is effective in eradicating the disease completely.

What is syphilis?

- Syphilis is a sexually transmitted infection (STI).
- It is caused by a bacteria called Treponema pallidum
- Syphilis is transmitted during sex, through blood transfusion.
- Syphilis in pregnancy may lead to stillbirth, newborn death and babies born with syphilis (congenital syphilis).
- Antibiotic medication treats syphilis.
- Untreated syphilis can lead to serious health problems, including blindness and damage to your brain, heart, eyes and nervous system.

Late Blight Disease

The Central Potato Research Institute (CPRI) has issued an advisory for potato farmers across the country, warning of a high risk of late blight disease in the crop due to changes in weather conditions.

Background:

- Late blight disease, a **fungal infection** is a significant threat to potato crops, causing substantial yield losses and reducing tuber quality.
- The disease is favoured by cool, moist weather conditions, making the current weather scenario conducive to its spread.

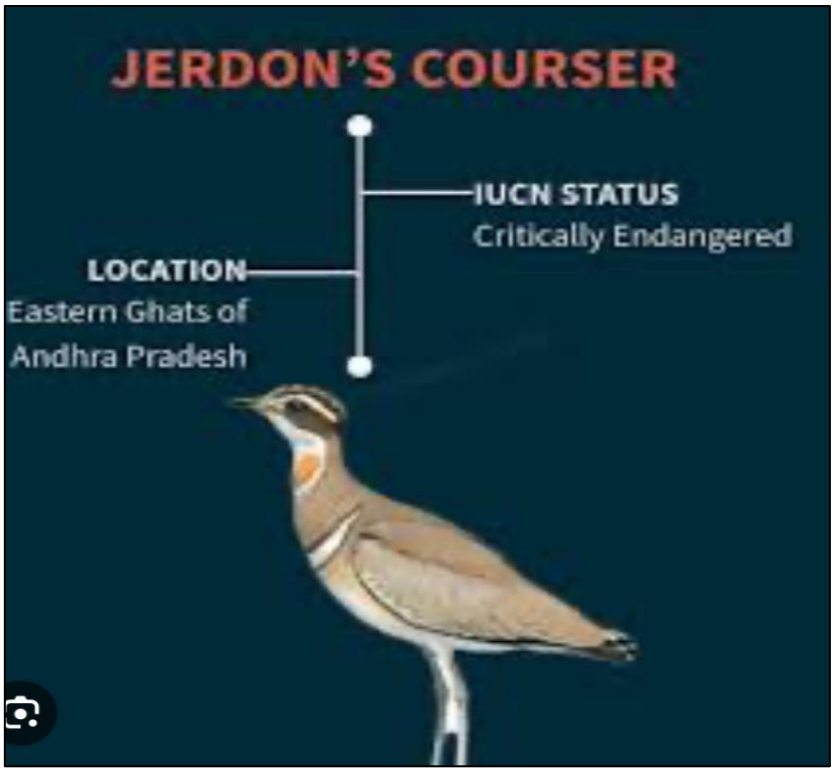
What is late blight disease?

- It is a disease of potato and tomato plants that is caused by the water mold Phytophthora infestans.
- The disease occurs in humid regions with temperatures ranging between 4 and 29 °C (40 and 80 °F). Hot dry weather checks its spread.
- Potato or tomato plants that are infected may rot within two weeks.
- When plants have become infected, lesions (round or irregularly shaped areas that range in colour from dark green to purplish black appear on the leaves, petioles, and stems.

- The disease can be managed with a timely application of fungicide, though epidemics can occur rapidly once crops are infected.
- In addition to fungicide application, the CPRI advisory stresses the need for proper drainage in fields and preventing weed growth — which can in turn harbour the disease-causing fungus and increase the risk of infection in potato crops.

Jerdon's Courser

Jerdon's Courser has not been visually spotted in over a decade. This courser is a restricted-range endemic found locally in India in the Eastern Ghats of Andhra Pradesh.



Background:

- Once thought extinct, the species was miraculously rediscovered in 1986 near Reddipalli village in Kadapa, prompting the establishment of the Sri Lankamalleswara wildlife sanctuary.

About Jerdon's courser :

- The Jerdon's courser (Rhinoptilus bitorquatus) is a nocturnal cursorial (adapted for walking and running) bird endemic to India.
- The bird was discovered by the surgeon-naturalist Thomas C. Jerdon in 1848 but not seen again until its rediscovery in 1986.
- The Jerdon's courser is categorised as "Critically Endangered" by BirdLife International and the International Union for the Conservation of Nature and Natural Resource (IUCN) because it is believed to have a small and declining population.
- Information on its distribution, population, and habitat requirements is sparse for numerous reasons: its nocturnal habits, nature of its habitat, its shy habits and extreme rarity

Article 341 of Indian constitution

The recent Supreme Court ruling emphasizes that states do not have the authority to modify the Schedule Caste (SC) list published under Article 341 of the Indian Constitution.

Background:

- The court quashed a Bihar government notification from 2015 that classified the Tanti-Tantwa community as SC, reverting them back to the category of Extremely Backward Class.
- The court called the notification "mala fide" and emphasized that only Parliament has the authority to amend the SC list through legislation, not state governments.

About Article 341 :

- Article 341 of the Indian Constitution plays a crucial role in the recognition and identification of Scheduled Castes (SC).
- The list of Scheduled Castes is intended to provide special privileges and benefits to these communities, promoting their social and educational advancement.

Presidential Authority:

- Article 341(1) empowers the President to specify, through a public notification, the castes, races, or tribes deemed as SCs in relation to a particular State or Union territory.
- The President consults with the Governor (in the case of a State) during this process.

Parliament's Power:

- Article 341(2) grants Parliament the authority to include or exclude any caste, race, or tribe from the list of Scheduled Castes specified in the Presidential notification.
- **Changes to the list can only be made through legislation by Parliament.**

National Company Law Tribunal (NCLT)

Recently, the Bengaluru bench of the National Company Law Tribunal (NCLT) admitted the Board of Control for Cricket in India (BCCI)'s petition seeking insolvency proceedings against ed-tech giant Byju's.

Background:

- The BCCI – which administers professional cricket in India – had sought initiation of insolvency proceedings against Byju's over alleged unpaid dues of Rs 158.90 crore under their sponsorship contract for the Indian cricket team.

About National Company Law Tribunal (NCLT) :

- The National Company Law Tribunal (NCLT) is a quasi-judicial body established by the Central Government of India under section 408 of the Companies Act, 2013.
- NCLT was constituted on June 1, 2016.
- It operates under the provisions of the Companies Act, 2013.

- NCLT was formed based on the recommendation of the V. Balakrishna Eradi committee on law relating to the insolvency and the winding up of companies.

Functions:

- The NCLT disposes of proceedings under the Companies Act, including arbitration, compromise, reconstruction, and winding up of companies.
- It is also the Adjudicating Authority for insolvency proceedings under the Insolvency and Bankruptcy Code, 2016.
- Under the Companies Act, 2013, the National Company Law Tribunal (NCLT) has the authority to approve the merger of firms in India. This is part of its jurisdiction.
- The NCLT's role is to oversee the legal aspects of corporate transactions, including mergers and acquisitions, to ensure they comply with statutory provisions and are in the best interest of shareholders and creditors.

Appeals:

- Decisions taken by the NCLT can be appealed to the National Company Law Appellate Tribunal (NCLAT), and further appeals can be made to the Supreme Court on points of law.

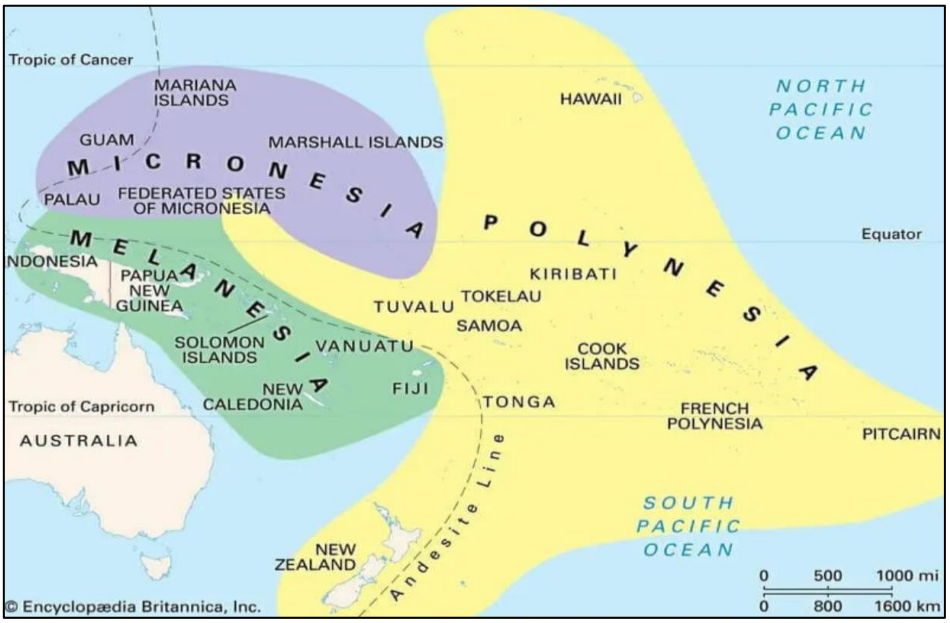
India-Pacific Islands Cooperation (FIPIC)

Last month,India had sent humanitarian aid to Papua New Guinea following a devastating landslide in Enga province.

This action according to experts, underscores the growing engagement between India and the Pacific Island nations under the Forum for India-Pacific Islands Cooperation (FIPIC).

Background:

- India has consistently supported Papua New Guinea during challenging times and natural disasters, such as the earthquake in 2018 and volcanic eruptions in 2019 and 2023.



About Forum for India-Pacific Islands Cooperation

- The Forum for India-Pacific Islands Cooperation (FIPIC) was established in 2014.

Members:

- India and 14 Pacific Island nations (Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu)

Objectives:

- Strengthen diplomatic, economic, cultural, and technical ties between India and Pacific Island nations.
- Promote sustainable development and address common challenges such as climate change, health, and education.

Key Summits:

- First Summit: Suva, Fiji (2014)
- Second Summit: Jaipur, India (2015)
- Third Summit: Port Moresby, Papua New Guinea (2023).

Significance for India:

- Geopolitical: Enhances India's strategic presence in the Pacific region.
- Economic: Opens new markets and opportunities for trade and investment.
- Cultural: Strengthens people-to-people ties and promotes cultural exchange.

Recent Initiatives:

- Healthcare: Establishment of a super-specialty cardiology hospital in Fiji and introduction of dialysis units and sea ambulances in all 14 Pacific Islands Countries.
- Clean Energy: Support for renewable energy projects.
- Water Scarcity: Provision of desalination units to address water scarcity issues.

Mackenzie River

The Mackenzie River is currently experiencing record-low water levels.

Background:

- The low water levels are primarily due to extreme hot conditions and very little precipitation, which have led to significant evaporation. This has impacted local communities that rely on the river for transportation and fishing.

About MACKENZIE RIVER

- The Mackenzie River is located in Canada, flowing through the Northwest Territories.
- It is the longest river system in Canada, with a length of approximately 1,650 km (1,025 miles).
- The river originates from Great Slave Lake and empties into the Beaufort Sea in the Arctic Ocean.
- The river has been historically significant for transportation and natural resources.

Chromium contamination

The National Green Tribunal (NGT) has directed the Odisha government to supply safe potable drinking water in the different regions where the joint inspection committee had detected contamination of ground water due to chromium pollution.

Background:

- Hexavalent chromium is recognized to have a negative impact on the human body, both in the short and long term.

About chromium contamination

- Chromium is an odorless and tasteless metallic element.
- Chromium is found naturally in rocks, plants, soil and volcanic dust, and animals.
- The most common forms of chromium that occur in natural waters in the environment are:
    - Trivalent chromium (chromium-3)
    - Hexavalent chromium (chromium-6)

- Chromium-3 is an essential human dietary element. It is found in many vegetables, fruits, meats, grains, and yeast.
- Chromium-6 occurs naturally in the environment from the erosion of natural chromium deposits. It can also be produced by industrial processes. There are demonstrated instances of chromium being released to the environment by leakage, poor storage, or inadequate industrial waste disposal practices.
- The sources of chromium in water include industrial wastes from leather and tanning, petroleum and ore refining, electroplating and pulp industries. These industries contribute liquid and solid forms of chromium to subsurface water.
- The tanneries play a significant part in occurrence of chromium in groundwater.
- Hexavalent chromium is dangerous and can easily dissolve in water, whereas Trivalent chromium is stable and harmless in nature .
- The hexavalent chromium causes health effects due to its mobility, high solubility and oxidizing behaviour.
- Health issues like pulmonary congestion, vomiting, diarrhea and liver damage are commonly caused by hexavalent chromium.

Umling La pass

A Bengaluru-based firm has claimed to have successfully tested a 100-kg Max Take Off Weight (MTOW) Unmanned Aerial Vehicle (UAV) at Ladakh's Umling La pass

Background:-

- If proved workable, it can give a huge boost to support logistics carriage, disaster and rescue events and medical relief in the higher regions of J&K, Uttarakhand, and the North Eastern states.

About UMLING LA :

- Umling La or Umlung La is the highest paved road and mountain pass in the world, located in Ladakh, India.
- The Umling La pass is traversed by a road between Chisumle and Demchok, also called the Umling La Road, which ascends to a height of 5799 metres (19024 feet) in the vicinity of the pass.

Chisumle-Demchok road/Umling La Road

- A 52-kilometre paved road was constructed between the villages of Chisumle and Demchok by the Border Roads Organization of India.
- The elevation at Umling La surpassed the record previously held by the 18,953-foot Uturuncu volcano road, Bolivia, making it the world's highest motorable road and pass.
- It is higher than Everest Base Camp, and over half the cruising altitude of commercial jet airlines.
- This seemingly impossible feat has been achieved by the BRO (Border Road Organization) as part of "Project Himank".

Section 125 CrPc

In a landmark judgment on the right to maintenance of Muslim Women, the Supreme Court (SC) bench of Justice B.V. Nagarathna and Justice Augustine George Masih has held that a divorced Muslim woman can seek alimonyfrom her husband under Section 125 of the Code of Criminal Code (CrPc). The court held that Section 125 of CrPC is a "religion neutral" provision that applies to all married women, including Muslims.

Post the enaction of The Muslim Women (Protection of Rights on Divorce) Act 1986, which provided maintenance rights to Muslim women during the Iddat Period, there has always been an ambiguity, on whether the Muslim Women could seek remedy under Section 125 of the CrPC. Several High Court judgments took different views on whether Muslim women should avail of Section 3 of the 1986 Act or Section 125 of CrPC.

Now the verdict settles this question by holding that the codification of a Muslim woman's maintenance rights in the 1986 Act, was only in addition to and not in derogation of her right to seek maintenance like a woman of any other religion, provided under Section 125 of the CrPC.

What are the four main pillars of the SC Verdict?

1. Social justice measure must be insulated from applicable personal laws- The SC held that Section 125 of CrPC was introduced as a measure of social justice to protect women and children. The provision manifested the constitutional commitment of social justice under Article 15(3) , which provided for special measures to ensure a life of dignity for women at all stages of their lives.

A claim under Section 125 CrPC is maintainable, irrespective of the applicable personal laws of the parties.

2. Equivalent rights of maintenance- The SC held that both- the secular provision of Section 125 of the CrPC and the personal law provisionof Section 3 of the 1986 Act– provide equivalent rights of maintenance in their distinct domains.

The SC held that passage of the 1986 Act did not 'militate against or dilute' relief under Section 125 of the CrPC. The intent of the Parliament behind the 1986 Act was to provide an additional remedy for divorced Muslim women.

3. Harmonious Interpretation- The SC has held that the two conflicting statutes should be harmoniously and purposively interpreted. SC has held that a divorced Muslim woman is entitled to seek recourse to either or both the provisions.

The choice lies with the Muslim woman to apply for maintenance either under Section 125 of the CrPC or the 1986 Act. If the woman is unable to provide for herself, she can seek remedy under Section 125 of the CrPC. If she is financially independent, she can seek maintenance under the 1986 Acttill the expiry of the iddat period.

4. Muslim women divorced through triple talaq entitled to relief-The SC has held that Muslim women who have been divorced through illegal methods such as triple talaq are entitled to maintenance under Section 125of the CrPC.

World Population Prospects 2024

The most recent "World Population Prospects 2024" study from the United Nations gives us a lot more information about how many people are expected to live on Earth in the future.

Factors Affecting Population Growth

Lower birth rates in some of the world's most popular countries, like China, are to blame for the change in population predictions.

These changes are having a big effect on the demographic picture and give us a new way to think about how populations will change in the future.

The earlier coming of this population peak is also seen as a good thing for the environment because it could reduce the stress that human consumption puts on the planet's resources.

Global Distribution and Ageing

Over a quarter of the world's people live in places like China, Russia, Japan, and Germany where population growth has stopped.

This group is going to grow because countries like Brazil, Iran, and Turkey are going to have their most populous decades in the next 30 years.

Also, after 2054, the populations of more than 120 countries will still be growing. This includes big countries like India, Indonesia, Nigeria, Pakistan, and the United States. The ages of people in the population are also changing.

In line with trends seen after Covid, life expectancy will rise from an average of 73.3 years in 2024 to 77.4 years in 2054. It is expected that by the late 2070s, there will be more adults aged 65 and up than people under 18 years old. This means that the world's population is getting older quickly.

Implications

The world's population is getting older and will finally go down, which brings both problems and chances. It might help the environment in some ways by lowering total consumption, but it also makes people more aware of the need to live in a way that is good for the environment.

Also, governments around the world may face problems because of populations that are getting older, such as a lack of workers and higher healthcare needs.
In conclusion, it is important to understand these population trends for policymaking and long-term growth, as they will have big effects on the world's social, economic, and environmental settings in the future.

About UN Population Prospects

- **Global and Regional Trends**: The UN Population Prospects study projects the world's population to peak at about 10.4 billion by 2100, with India surpassing China as the most populous country by 2023.
- Africa is highlighted for its significant population growth, with Nigeria expected to be the third most populous country by 2050.
- **Longevity and Migration**: By 2050, the global life expectancy is projected to reach nearly 77 years, reflecting improvements in healthcare.
- Conversely, Europe's population may decline due to falling birth rates and increased longevity. Migration plays a crucial but complex role in shaping demographic changes, especially in developed regions.

Mars Dune Alpha - Project Chapea

It is called "Mars Dune Alpha" and is a 1,700-square-foot building made with 3D printing at the Johnson Space Center in Houston, Texas.

It has bedrooms, bathrooms, a work area, a robot station, a gym, and a vertical farm, among other things. It is next to a 1,200-square-foot area that is used to simulate events that would happen outside of vehicles on Mars.

The setup includes red, rocky cliffs and simulated Martian dirt to make the experience more real.

Mission Objectives and Experiences

The main reason for this long-term engagement was to collect information on the physical and mental effects of a Mars-like environment, such as being alone, having limited resources, and having to wait for messages to arrive.

These new ideas are very important for getting astronauts ready for the mental and physical difficulties of longer-term space missions in the future. Crew members did a wide range of jobs, from simulating spacewalks to growing vegetables.

They gave NASA useful information about how to keep people healthy in confined and remote environments.

Participants of the Simulation

Professionals from research scientists to doctors were carefully chosen to be part of the CHAPEA project.

Understanding Mars' Environment

The climate and landscape of Mars are not suitable for living in. Temperatures change quickly, and the atmosphere is mostly made up of carbon dioxide. It has canyons, volcanoes, and huge dust storms in its scenery.

These are some of the things that make manned trips hard. Beyond getting people ready for moral problems on Mars, the mission's results are meant to help us learn more about the planet so that we can figure out if it has been inhabited in the past and what that means for Earth.

Following this first CHAPEA trip, more simulations are planned for 2025 and 2026. The ultimate goal is to send people to Mars by the 2030s.

India's Involvement in Martian Exploration

Along with NASA's progress, India's ISRO has shown a lot of interest in Mars with its successful 2014 Mars Orbiter Mission (MOM). As India's focus on interplanetary study grows, it has plans for more exploratory missions in the future.

MeDeViS

The Medical Devices Information System (MeDevIS), which was just released by the World Health Organization (WHO), is a major step forward in healthcare around the world. This online tool, which anyone can use, aims to improve how medical devices are given out and used around the world.

Objective of MeDevIS

The main reason MeDevIS was created was to help governments, healthcare officials, and end users. This directory has a lot of information to help people make smart choices about buying, choosing, and using different medical equipment.

Scope of Medical Devices Covered

The site has a list of 2,301 different kinds of medical equipment. These cover a wide range of health issues, from reproductive, maternal, newborn, and child health to important infectious diseases like Covid-19 and infectious diseases that don't spread.

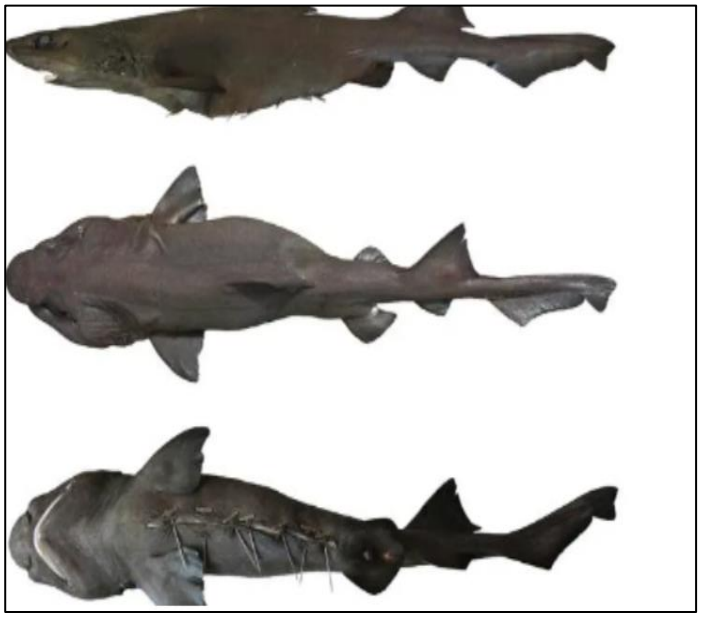
Features of MeDevIS

MeDevIS has a central, complete database that has important information about every medical gadget.

It tells users what kind of technology they need, what level of healthcare system they need, how big it's supposed to be, and what kind of infrastructure it needs to work with.

WHO has made a big step toward making knowledge about medical devices easier to find and accessible to everyone with MeDevIS. This will improve public health and healthcare around the world. This platform not only helps people make better decisions, but it also helps fill in the gaps in healthcare knowledge around the world.

Deep water dogfish shark



At Sakthikulangara fishing harbor in Kerala, scientists from the Zoological Survey of India (ZSI) found a new species of deep-water dogfish shark. They named it Squalus hima. This new finding, which was published in the journal Records of the ZSI, helps us learn more about the different kinds of life that live in the Arabian Sea.

Spurdogs are a type of dog in the genus Squalus, which is in the family Squalidae. These dogfish sharks are known for having smooth spines on their dorsal fins and can be found in many marine settings around the world.

The introduction of the R21/Matrix-M vaccine in Cote d'Ivoire was a big step forward in the fight against malaria around the world. The World Health Organization (WHO) approved the vaccine last year, and this is the first time it has been given to everyone in the country.

Development and Approvals

Novavax contributed its Matrix-M adjuvant technology to the R21/Matrix-M vaccine, which was made by the University of Oxford and the Serum Institute of India (SII). It was put through strict WHO regulatory and clinical tests that proved it worked and was safe.

"Loss and Damage" fund

The Philippines was recently chosen to house the board of the "Loss and Damage" fund. This is a big step toward helping people who have been hurt by climate change.

This choice was made during talks at the United Nations, which were mostly about giving money to countries that are being hit hard by global warming. Following that, the World Bank agreed earlier that month to oversee this fund for four years temporarily.

About Loss and Damage fund

The "Loss and Damage" fund was set up at the COP27 UN Climate Change Conference in 2022 Egypt to help countries that are weak and have been hit by natural disasters. With a focus on the economic and non-economic effects in emerging countries, it talks about "loss and damage" as opposed to "mitigation and adaptation." Even though it has support from around the world, the fund's operations and funding sources are still not clear in early 2023.

This plan is a big step forward in climate talks because it recognizes that developed countries are responsible for past pollution that hurt poorer countries more than they hurt rich countries. International discussions about contributions and governance systems are still going on.

The Consumer Affairs Ministry wants to change the Legal Metrology (Packaged Commodities) Rules, 2011. The goal of the change is to require that important information about pre-packaged goods sold in stores that are bigger than 25 kilograms or 25 liters be

made public. The goal of this move is to get rid of the current exemption for bulk packages and give customers more information.

Proposed Changes Explained

At the moment, important information like the maximum retail price (MRP), best before date, manufacturer information, and country of origin are not needed on bulk-packed things that are meant to be sold. The new plan supports putting this important information on all pre-packaged goods meant for retail, no matter how big or small they are. In this way, the government hopes to give people clear and easy-to-find information that will help them make smart buying choices.

Scope and Impact

The suggested rules would require all manufacturers, packers, and importers of pre-packaged goods that are going to stores to label them completely. Bear in mind that these changes will only affect markets for consumer goods. They will not affect markets for goods used in businesses or institutions. The business will probably have better rules after these rules are put in place. This could help avoid misunderstandings and legal problems.

Public Participation and Timeline

To make sure that everyone has a chance to be a part of this regulatory process, the Ministry has given the public until July 29 to comment on the planned change. With this method, stakeholders and the public can give their opinions and concerns, which could help make the proposed changes even better before they are finalized.

About Legal Metrology (Packaged Commodities) Rules

India's Legal Metrology Act of 2009 created the Legal Metrology (Packaged Commodities) Rules. These rules say that pre-packaged goods must clearly show important details like the net quantity, the manufacturing date, the expiration date, the highest retail price, and information on how to contact the company for customer service. Online stores must make sure that the same information can be found on their sites. For added safety, these rules say that the statement on packages has to be clear and easy to read. It is against the rules to use non-standard units, and the rules require specific statements, like the name and address of the manufacturer, packer, and importer. People who break these rules may have to deal with fines and civil action. The rules also give customers the power to file complaints, which shows a dedication to openness and customer rights.

MANAS (Madak Padarth Nisedh Asuchna Kendra)

The Union Home Minister, Amit Shah, is set to launch India's first-ever toll-free national helpline for narcotics-related issues, termed MANAS (Madak Padarth Nisedh Asuchna Kendra), or the Narcotics Prohibition Intelligence Centre. The launch is set to happen on July 18 during the seventh meeting of the Narco-Coordination Centre (NCORD). The helpline, which has a specific phone number (1933) and an email address (info.ncbmanas@gov.in), is meant to give people a safe and easy way to report drug-related activities.

Objectives and Functioning of MANAS

MANAS is an all-in-one service that helps fight drug trafficking and related crimes. It does this by letting people report crimes directly through a website (ncbmanas.gov.in) and other

methods. Crimes like illegal drug dealing, selling, buying, storing, making, and growing drugs or substances that make you feel high are what the focus is on. As required by the Narcotic Drugs and Psychotropic Substances (NDPS) Act, the Narcotics Control Bureau (NCB) will verify the information given by reporters and take action based on that information.

The Narco-Coordination Center (NCORD) was opened in 2021 in Maharashtra, India. It helps law enforcement agencies work together to fight drug crime. NCORD uses digital platforms to share information and coordinate actions from different offices, like the Narcotics Control Bureau, police, and customs. Through real-time information and coordinated law enforcement efforts, the center hopes to stop drug abuse and trafficking from getting worse. This project shows that the Indian government is taking action to stop the drug problem from getting worse. The "war on drugs" order from the government tells NCORD how to run its business.

Yuan challenge

India has been trying to become less dependent on the US dollar and lower its oil import costs by trading more with Russia in recent years. Trade between the two countries is supposed to reach $100 billion by 2030.

However, after the war in Ukraine in 2022, the relationship changed, with India buying a lot more oil from Russia. Russia is benefiting from India's trade imbalance because it saves money by buying cheaper oil from Russia but not exporting enough to balance the trade, which is currently at a deficit of $57 billion out of $66 billion in FY24.

The Challenge of Unbalanced Trade

Due to India's huge trade gap with Russia, Russian oil exporters want to be paid in Chinese yuan instead of US dollars or Indian rupees. With more equal trade between China and Russia, where the yuan is widely used, this change has happened. Chinese currency (yuan) has become more common in the Russian market, which makes it harder for the rupee to become used around the world.

Efforts to Internationalize the Rupee

India's plan to make the rupee more widely used around the world has been slowed down by its trade partners' reluctance and the rupee's limited use in offshore foreign exchange markets. The Reserve Bank of India intended to increase the role of the rupee by introducing a plan in July 2022 that let rupees be used as payment in foreign trade. However, the rupee's instability and limited use in trade deals, compared to the strong US dollar and the rising yuan, continue to be problems.

Export Challenges to Russia

India's exports to Russia are affected by worries about possible Western penalties among private banks, which are necessary for international trade financing. Concerned about how working with Russia might affect their operations in the West, most private banks are cautious when doing business with Russia. Swapping rupees for rubles is a complicated issue that makes using local currencies for trade payments even more difficult.

Future Trade Prospects and Strategic Plans

Overcoming the trade deficit and promoting economic unity is something that India and Russia are working on in many areas. Focusing on lowering trade barriers, talking about a

possible trade deal with the Eurasian Economic Union (EEU), and improving cooperation in important areas like chemicals, metals, and transportation planning.
This is meant to make trade between the two countries easier and more widespread, possibly getting around current problems and helping both countries' economies grow.

NATO

The recent NATO summit held in Washington included the Indo-Pacific Four (IP-4): Japan, South Korea, New Zealand, and Australia. This shows how NATO's strategy has changed because of new global risks, like the tension over Taiwan and closer cooperation between Russia and China. These countries are taking part because they are worried about China's actions and goals in the area, which could upset the balance of power in the world.

About NATO

- **Establishment and Membership**: NATO, or the North Atlantic Treaty Organization, was established on April 4, 1949. It originally included 12 countries and has since grown to 30 members.
- **Collective Defense and Military Action:** Article 5 of NATO says that an attack on one country is an attack on all. This article has only been used once, after the September 11 attacks in the United States. The first time NATO sent troops into battle was in Bosnia in the 1990s.
- **Standardization and Headquarters:** The NATO script was created to make military communication more uniform, but it is now used all over the world. The group's main office is in Brussels, Belgium, and its secretary-general is replaced every few months.

NATO's Strategy and Its Expansion Beyond the North Atlantic

NATO used to only be concerned with security in the Euro-Atlantic area, but as risks around the world have changed, it has slowly grown to include more areas. Because Russia and China are becoming bigger problems, the 2023 meeting stressed how important the Indo-Pacific is to the politics of the Euro-Atlantic region. In addition to protecting the "rules-based international order," NATO is now also working to stop China from using force, and it is tackling structural threats to European security.

Indo-Pacific Alignment with NATO Objectives

NATO is building ties with non-member countries in the Indo-Pacific to improve global security, even though it is usually an alliance between countries in the Euro-Atlantic region. This includes projects that bring together people from different fields to work on new areas like cybersecurity, AI, and fighting misinformation. This change also backs up larger U.S. plans to work together with Indo-Pacific forces more closely, which makes NATO even better at adapting to the needs of global security.

European Involvement in the Indo-Pacific Region

Even though European involvement in the Indo-Pacific is growing, it is still pretty low-key. For example, the U.K. is a part of the AUKUS deal, and Europe's military is only sometimes present in the area. But some NATO members and Indo-Pacific countries are worried that NATO's reach is growing too far beyond its original regional focus.

Future Perspectives on NATO and the Indo-Pacific

Since things are getting worse in the area, especially around Taiwan, NATO may play a bigger role there. Some people say that a strong NATO in Europe could give the U.S. more time to deal with growing problems in the Indo-Pacific. Still, some people aren't sure what the real effects of NATO's role in Asian conflicts are. They say that the European militaries aren't as strong as they could be because of a history of underinvestment and their need for U.S. help with logistics. The main point is that NATO's growing attention on the Indo-Pacific shows how global security problems are linked and how the roles of international alliances in keeping different areas stable are changing.

Davis Strait Proto-Microcontinent

Scientists have recently found a hidden microcontinent in the Davis Strait, west of Greenland. They have named it the Davis Strait proto-microcontinent. This finding shows how complicated tectonic movements have changed the Earth's geological structure over time.

Formation of the Davis Strait Proto-Microcontinent

The tectonic action in the area is directly linked to the formation of this newly found geological feature. Researchers have found that the microcontinent formed during the Paleogene time, 33 to 61 million years ago. The area is different from mainland Greenland and Baffin Island because it has a piece of continental crust that is thicker than usual and bands of continental crust that are smaller and slightly thinner around it.

Plate Tectonics and Continental Development

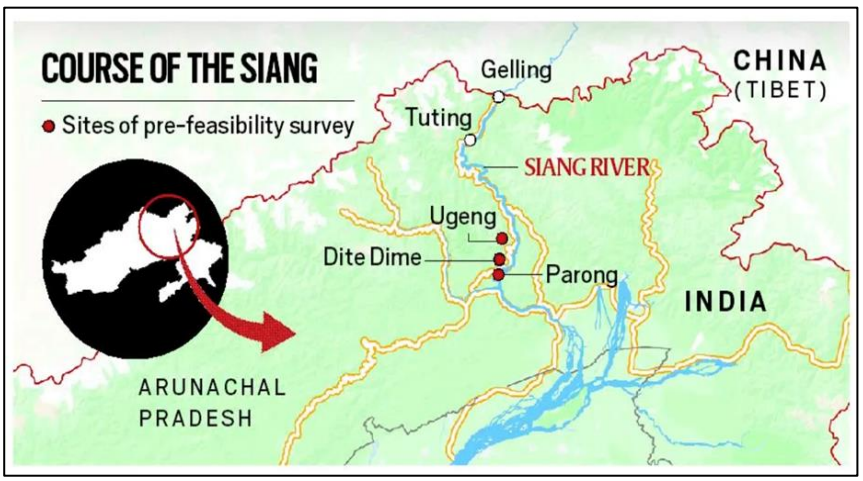
Plate tectonics is the study of how the Earth's lithospheric plates move and interact with each other. It has a direct effect on how countries form and on natural events like volcanoes, earthquakes, and mountain ranges. The area around Davis Strait, which is between Canada and Greenland, is very important because it is on the edge of two plates where a lot of seismic activity has happened.

Upper Siang hydropower project

Locals are protesting against the Upper Siang hydropower project in Arunachal Pradesh.

Background:

- Authorities are in the process of launching a massive public outreach campaign to drum up support for the project.
- The Upper Siang project is a proposed 11,000 megawatt hydropower project on the Siang river in the Upper Siang district of Arunachal Pradesh.



- The Siang originates near Mount Kailash in Tibet, where it goes by the name of Tsangpo. It traverses more than 1,000 km eastward, before forming a horseshoe bend around the towering Namcha Barwa peak, and enters Arunachal Pradesh as the Siang. Further downstream, in Assam, the river becomes the mighty Brahmaputra.
- In 2017, the government proposed to replace the planned 5,500 MW Siang Upper Stage-I and 3,750 MW Siang Upper Stage-II hydel projects with a single, multi-purpose project of higher capacity — the aforementioned Upper Siang project.
- Set to be built by the National Hydroelectric Power Corporation (NHPC), the project would entail the construction of a 300-metre high dam, the largest in the subcontinent, when completed.
- According to a 2022 report by the Central Electrical Authority, there are 29 hydroelectric projects (installed capacity of over 25 MW) in the Siang river basin, with a combined installed capacity of 18,326 MW. The proposed Upper Siang project's installed capacity is roughly 60% of this figure.
- More than its hydropower potential, the dam is being projected as a strategic imperative to counter China's hydel projects on the Tsangpo.
- China plans for a 60,000 MW 'super dam' in Tibet, right on the border with Arunachal Pradesh. The super dam's installed capacity is almost three times that of the largest hydropower station on the planet — the Three Gorges Dam on the Yangtze river in China's Hubei province. It will be used to divert water to China's water-scarce northern regions.
- Upper Siang project will act as a reservoir to counter the effects of a potentially-reduced flow if Chinas dam project materialises.

Environmental & social concerns

- Activists are concerned that the proposed dam project will displace over 300 villages belonging to the Adi tribe, threatening their way of life and cultural heritage.
- Activists are particularly concerned by a provision of last year's Forest (Conservation) Amendment Act which exempts from clearance the diversion of forest land for strategic projects within 100 km from India's borders.
- The Upper Siang district administration has called multiple meetings to lay the ground for a pre-feasibility survey in the area, a preliminary analysis to assess the probable cost of a project and its feasibility in a given area.
- The NHPC has chosen three sites along the Siang — Ugeng, Dite Dime and Parong — for its feasibility study.
- The NHPC has sanctioned a Rs 325 crore CSR package which will be used for the implementation of livelihood schemes, as well as the development of health, education, and sports infrastructure.

Carbonate Compensation Depth

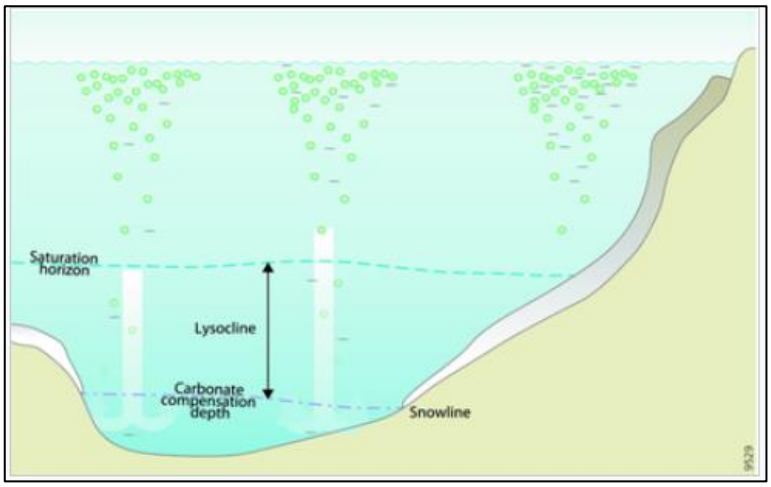
Carbonate Compensation Depth is expanding according to latest research

Background:

- Below the CCD no calcium carbonate is preserved—generally there is no $CaCO_3$ beneath about 15,000 feet (4500 meters)

About Carbonate Compensation Depth

- The carbonate compensation depth (CCD) is the depth, in the oceans, at which the rate of supply of calcium carbonates matches the rate of solvation. That is, solvation 'compensates' supply.
- Below the CCD solvation is faster, so that carbonate particles dissolve and the carbonate shells (tests) of animals are not preserved.
- Carbonate particles cannot accumulate in the sediments where the sea floor is below this depth.



Detailed information:

- When CaCO3-shelled organisms die, their skeletal remains begin sinking towards the bottom of the ocean. This creates a calcareous ooze that can, under pressure from the overlying water, form limestone or chalk.
- Not everything that sinks in the sea reaches the bottom, however, because the chemistry of ocean water changes with depth.
- Surface water, where most plankton live, is safe for shells made from calcium carbonate. These minerals are almost insoluble there.
- But the deep water is colder and under high pressure, and both of these physical factors increase the water's power to dissolve CaCO3. More important than these is a chemical factor, the level of carbon dioxide (CO2) in the water.
- Deep water collects CO2 because it's made by deep-sea creatures, from bacteria to fish, as they eat the falling bodies of plankton and use them for food. High CO2 levels make the water more acidic.
- The depth where all three of these effects show their might, where CaCO3 starts to dissolve rapidly, is called the lysocline.
- As you go down through this depth, seafloor mud starts to lose its CaCO3 content — it is less and less calcareous.
- The depth at which CaCO3 completely disappears, where its sedimentation is equaled by its dissolution, is the compensation depth.

Regional Analysis of Indian Ocean (RAIN) system

Recently, the Indian National Centre for Ocean Information Services (INCOIS) has upgraded its Regional Analysis of Indian Ocean (RAIN) system for gathering information on the health of the Indian Ocean.

Background:

- RAIN data is a valuable resource for various stakeholders, contributing to scientific research, sustainable development, and informed decision-making in the Indian Ocean region.

About Regional Analysis of Indian Ocean System (RAIN)

- Regional Analysis of Indian Ocean System (RAIN) is a data assimilation system developed by the Indian National Centre for Ocean Information Services (INCOIS).
- RAIN is designed to gather information on the health of the Indian Ocean.
- The recent upgrade incorporates sea surface height anomaly (SSHA) in addition to the previous parameters of salinity and sea surface temperature.
- This enhancement improves the accuracy of ocean current analysis.
- The system collects observations at the ocean's surface and below the water at depths ranging from 3 meters to 2,000 meters, depending on the requirement.

Important applications of the Regional Analysis of Indian Ocean (RAIN) :

Ocean Forecasting:

- RAIN provides improved initial conditions for ocean forecast, enhancing the accuracy of predictions related to ocean currents, sea surface temperature, and other oceanographic variables.
- Better forecasts benefit marine navigation, offshore operations, and disaster management.

Climate Research:

- Researchers use RAIN data to study long-term trends, variability, and climate change in the Indian Ocean.
- It contributes to understanding ocean-atmosphere interactions, monsoons, and El Niño-Southern Oscillation (ENSO) events.

Fisheries Management:

- Accurate oceanographic data helps fisheries managers make informed decisions about fishing zones, stock assessments, and sustainable fishing practices.
- RAIN aids in identifying productive fishing grounds and potential fish migration patterns.

Environmental Monitoring:

- Monitoring ocean health, pollution levels, and changes in water quality.
- Detecting harmful algal blooms, oil spills, and other environmental hazards.

Disaster Preparedness and Response:

- RAIN data assists in predicting and monitoring cyclones, storm surges, and tsunamis.
- Early warnings help coastal communities prepare and mitigate risks.

Shipping and Maritime Operations:

- Ocean currents, temperature, and salinity data are crucial for safe navigation, route optimization, and avoiding hazardous areas.
- RAIN contributes to efficient shipping operations.

Renewable Energy:

- Understanding ocean currents and temperature gradients aids in harnessing tidal and wave energy.
- RAIN data informs the placement of offshore wind farms.

Sarus crane

The latest census in Uttar Pradesh has revealed a positive trend in the Sarus crane population.

About Sarus Crane:

- The Sarus Crane is the tallest flying bird in the world.
- It was declared as the state bird of Uttar Pradesh in 2014.
- Distribution:
  - It is found in Southeast Asia, northern India, and northern Australia.
- Habitat:
  - Prefers wetlands such as canals, marshes, and ponds, often near human habitation.
  - Sarus Cranes are least social among crane species, usually found in pairs or small groups.
- Threats:
  - Habitat Loss: Due to agricultural expansion and urbanization.
  - Predation: By feral dogs, mongoose, and snakes.
  - Human Activities: Hunting and disturbance from human activities.
- Conservation Efforts:
  - Projects: The Sarus Crane Conservation Project in Uttar Pradesh involves local volunteers, NGOs, and the U.P. Forest Department.
- Census: Regular population monitoring and habitat protection efforts are ongoing.
- Conservation Status:
  - The Sarus is listed as vulnerable on the International Union for Conservation of Nature (IUCN) red list.

"Hannibal Directive"

On October 7 last year, as Hamas raided southern Israel, the Israel Defence Forces (IDF) activated the "Hannibal Directive," a doctrine of using maximum force to prevent soldier capture, even at the cost of military and civilian lives, according to a recent media investigation.

Background:

- The IDF has not confirmed or denied the claims in the report, and has said that the results of internal investigations would be presented once complete.

what is the Hannibal Directive?

- The expression refers to a IDF operational policy that aims to pre-empt politically painful prisoner swaps by immediately eliminating everyone in the vicinity of a captive Israeli soldier, even if it poses a risk to the soldier himself.
- The full text of the purported doctrine has never been published, even though its existence has been an open secret.
- Describing the procedures to be used in the minutes and hours immediately following a possible abduction, the directive states: "In case of capture, the main mission becomes rescuing our soldiers from the captors, even at the cost of hitting or wounding our soldiers."

Thane-Borivali Twin Tunnel Project

Narendra Modi, the Prime Minister of India, led the event to break ground on the Thane-Borivali Twin Tunnel project in Mumbai on July 13, 2024. This Rs. 16,600 crore project is part of a bigger plan to improve Mumbai's infrastructure that will cost a total of Rs. 29,000 crores and will aim to make it much easier to move around and connect with other places in the city.

Overview of the Thane-Borivali Twin Tunnel Project

The Thane-Borivali Twin Tunnel, which is India's longest and biggest urban tunnel project, is expected to cost Rs. 16,600 crore. It will connect Thane and Borivali through a direct subway line that runs for 11.8 km and finishes at Borivali on National Highway 8. With this route's two regular lanes and one emergency lane, the journey will go from taking over an hour to only 12 minutes, and the distance will be cut by 12 km.

Strategic Implications and Benefits

This tunnel is not only a way to get people from one place to another, but it is also a smart move to help clear up traffic on Ghodbundar Road and the Western Express Highway. Its goal is to improve east-west suburban connectivity by building a quick, direct route that will make journey easier and keep roads from getting too crowded.

Environmental and Technical Details

The Mumbai Metropolitan Region Development Authority (MMRDA) says that the building of the tunnel will not have any impact on the nearby Sanjay Gandhi National Park because it is environmentally friendly. India's longest tunnel-boring machine will be used for the project. It can bore a tunnel 10.25 km long and has cross passages every 300 m for safety and upkeep. In addition, it is expected to cut carbon pollution by 150,000 MT per year.'

Constituent Assembly Meeting and National Flag

The Constituent Assembly of India officially accepted the National Flag on July 22, 1947. This was a big step in India's journey to become free from colonial rule. This adoption was a sign of the hopes and togetherness of the country during hard times.

Constituent Assembly Meeting

The Constituent Assembly met in New Delhi at 10:00 AM, with Dr. Rajendra Prasad in charge. Since its start on December 9, 1946, the Assembly has met many times to talk about

a wide range of important issues. A move about the flag, led by Jawaharlal Nehru, was the main item on the agenda.

Nehru's Resolution for the Flag

Nehru wanted the National Flag to have a white band with an Ashoka Chakra in navy blue in the middle of the white band. The flag should be a horizontal triangle with deep golden, white, and dark green colors.

The goal of this design was to capture India's spirit and past while also being aesthetically pleasing. At a ratio of 2:3, the measurements were made uniformly. In his speech, Nehru talked about his pride and memories, relating the flag to the deaths of freedom fighters. He knew that the country would face problems in the future, but he still saw this as a victory over the empire.

Nehru stressed that the flag wasn't just a sign of Indian nationalism; it was also a word of freedom to people all over the world who were being ruled over.

The Symbolism of the Flag

Nehru said that the flag was chosen because it was liked by many people and had historical importance, not because it had anything to do with a particular group. The colors showed the country's rich history.

The Ashoka Chakra was chosen to connect the current flag to India's long past because it represents the ideals of India's ancient civilization.

Assembly Support and Amendments

Two changes were suggested, but they were not made. Several assembly members, such as Sarojini Naidu and S. Radhakrishnan, said they liked the style of the flag. Some people were against adding the Swastika to the flag, but in the end, everyone agreed to go with the suggested design.

About the National Flag of India

- There are three horizontal bands on the Indian National Flag. They are saffron, white, and green.
- The saffron color stands for bravery, the white color for peace and honesty, and the green color for faith and honor.
- It was made by Pingali Venkayya and was approved on July 22, 1947.
- The 24-spoke navy blue wheel that is the Ashoka Chakra stands for the endless wheel of law.
- There are two equal parts on the flag, and it is made of khadi cloth. The Flag Code of India tells people how to fly the flag.

Carbon Border Adjustment Mechanism

- CBAM is part of the **"Fit for 55 in 2030 package"**, which is the EU's plan to reduce greenhouse gas emissions **by at least 55% by 2030** compared to 1990 levels in line with the **European Climate Law.**
- The CBAM is a policy tool aimed at reducing **Carbon Emissions** by ensuring that imported goods are subject to the same carbon costs as products produced within the EU.

- **Implementation:**
  - The CBAM will be implemented by **requiring importers to declare the quantity of goods imported into the EU** and their embedded Greenhouse Gas (GHG) emissions on an annual basis.
  - To offset these emissions, importers **will need to surrender a corresponding number of CBAM certificates,** the price of which will be based on the weekly average auction price of **EU Emission Trading System (ETS)** allowances in **€/tonne of CO2 emitted.**
- **Objectives:**
  - CBAM will ensure its **climate objectives are not undermined by carbon-intensive imports** and spur cleaner production in the rest of the world.
- **Significance:**
  - It can encourage **non-EU countries to adopt more stringent environmental regulations**, which would reduce global carbon emissions.
  - It can prevent carbon leakage by discouraging companies from relocating to countries with weaker environmental regulations.
  - The revenue generated from CBAM will be **used to support EU climate policies, which** can be learned by other countries to support **Green Energy.**

How can it Impact India?

- **Impact India's Export:**
  - It will have an adverse impact on India's exports of metals such as **Iron, Steel and aluminum products to the EU**, because these will face extra scrutiny under the mechanism.
  - India's major exports to the EU, such as iron ore and steel, face a significant threat due to the **carbon levies ranging from 19.8% to 52.7%.**
    - From 1st January 2026, the EU will start collecting the carbon tax on each consignment of steel, aluminum, cement, fertilizer, hydrogen and electricity.

DIGIPIN

The Department of Posts releases a beta version of DIGIPIN (Digital Postal Index Number) for public comments and expert opinion.

Background:

- The concept of a standardized, geo-coded system like DIGIPIN can greatly enhance efficiency and accuracy in delivering services.

About DIGIPIN :

- Digital Postal Index Number (DIGIPIN) is an initiative by the Department of Posts in India.

Purpose and Objective:

- DIGIPIN aims to establish a geo-coded addressing system across India.
- It is designed to create a National Addressing Grid and simplify addressing solutions for citizen-centric delivery of public and private services.

Development and Collaboration:

- The Department of Posts developed DIGIPIN in collaboration with IIT Hyderabad.
- It serves as a strong and robust pillar for Geospatial Governance and acts as a base layer for other ecosystems.

Features:

- DIGIPIN allows for logical location of addresses with directional properties built into it.
- It provides a unique code for each location, facilitating precise identification.

Significance:

- As India continues to digitize and improve its postal services, DIGIPIN plays a crucial role in enhancing address accuracy and accessibility.

India AI Mission

- The Cabinet approved the IndiaAI Mission with an allocation of Rs 10,300 crore in march, 2024.
- The Mission will be implemented by 'IndiaAI' Independent Business Division (IBD) under Digital India Corporation (DIC) and has the following components:
    - **IndiaAI Compute Capacity:** The IndiaAI compute pillar will build a high-end scalable AI computing ecosystem to cater to the increasing demands from India's AI start-ups and research ecosystem.

- The ecosystem will comprise AI compute infrastructure of 10,000 or more Graphics Processing Units (GPUs), built through public-private partnership.
- **IndiaAI Innovation Centre:** It will undertake the development and deployment of indigenous Large Multimodal Models (LMMs) and domain-specific foundational models in critical sectors.
- **IndiaAI Datasets Platform** – The IndiaAI Datasets Platform will streamline access to quality non-personal datasets for AI Innovation.
- **IndiaAI Application Development Initiative –** It will promote the AI applications in critical sectors for the problem statements sourced from Central Ministries, State Departments, and other institutions
- **IndiaAI FutureSkills** – It is conceptualized to mitigate barriers to entry into AI programs and will increase AI courses in undergraduate, masters-level, and Ph.D. programs. Further, Data and AI Labs will be set-up in Tier 2 and Tier 3 cities across India to impart foundational level courses.
- **IndiaAI Startup Financing:** It is conceptualized to support and accelerate deep-tech AI startups and provide them streamlined access to funding to enable futuristic AI Projects.
- **Safe & Trusted AI** – Recognizing the need for adequate safeguards to advance the responsible development, deployment, and adoption of AI, the Safe & Trusted AI pillar will enable the implementation of Responsible AI projects including the development of indigenous tools and frameworks, self-assessment checklists for innovators, and other guidelines and governance frameworks.

Dark Oxygen

Researchers have discovered "dark oxygen" being produced in the deep ocean.

Background:

- The recent study published in Nature Geoscience, a journal dedicated to Earth sciences research, shows oxygen emitted from mineral deposits 4,000 meters (about 13,000 feet) below the ocean's surface on the seafloor of the Pacific Ocean's Clarion-Clipperton Zone (CCZ).

Key takeaways

- Oxygen is essential for life on Earth, and we've long associated it with photosynthesis—the process by which plants and algae produce oxygen using sunlight.
- However, recent discovery challenge this understanding. Scientists have found evidence of an additional source of oxygen called dark oxygen.

What Is Dark Oxygen?:

- Dark oxygen is produced deep under the sea without sunlight.
- Polymetallic nodules, which are naturally occurring mineral masses found on the ocean floor, play a crucial role in this newly discovered process.

These nodules, made up of metals like manganese, iron, cobalt, nickel, copper, and lithium, can generate oxygen through electrochemical activity even in the absence of light.

Implications and Significance:

- Until now, we believed that all oxygen came from photosynthetic organisms (plants and algae).
- Dark oxygen challenges this notion, suggesting that there might be alternative oxygen sources.
- It raises intriguing questions about the origins of life on Earth.

Where Did Dark Oxygen Come From?:

- Scientists discovered dark oxygen at a depth of 4,000 meters (about 13,000 feet) below the ocean's surface , specifically from the pacific ocean's Clarion-Clipperton Zone (CCZ).
- The fact that it's produced without sunlight implies that life might have existed before photosynthesis emerged.

Enemy properties

The Indian government has recently taken a significant step to auction properties classified as "enemy properties."

Background:

- Over 9,400 'enemy' properties, worth more than Rs 1 lakh crore, are set to be auctioned with the home ministry starting the process of identifying all such estates.

About Enemy properties :

- Enemy properties are those that were once owned by individuals who took Chinese or Pakistani citizenship after India fought wars with these countries.
- Enemy properties include both immovable (real estate) and movable (such as bank accounts, shares, and gold) properties left behind by those who migrated to Pakistan and China.
- These properties are vested with the Custodian of Enemy Property for India (CEPI), an authority created under the Enemy Property Act, 1968.
- The Enemy Property Act, 1968 governs the allocation and management of these properties. It was enacted in the aftermath of the 1965 Indo-Pakistani war.

The Enemy Property (Amendment and Validation) Act 2017:

- In 2017, the Enemy Property (Amendment and Validation) Act clarified that
  - Successors of those who migrated to Pakistan or China no longer have a claim over these properties.
  - The law of succession does not apply to enemy properties.
  - Transfers of such properties by enemies, enemy subjects, or enemy firms are prohibited.
  - The custodian preserves these properties until they are disposed of according to the Act's provisions.
- CEPI currently manages 13,252 enemy properties across India.
- Their total value exceeds Rs 1 lakh crore.
- Most of these properties belong to individuals who migrated to Pakistan, while a smaller number are associated with those who migrated to China.

State-wise Distribution:

- Uttar Pradesh has the highest number of enemy properties (5,982).
- West Bengal follows closely with 4,354 properties.

Global Forest Area

India has made great progress in protecting forests. From 2010 to 2020, 266,000 hectares of new forest will be added each year. According to the Food and Agriculture Organization (FAO), this makes India the third country in the world in terms of forest area growth.

Global Forest Area Gains
China and Australia lead the rankings, having increased their forest areas by 1,937,000 and 446,000 hectares respectively. Other countries in the top ten include Chile, Vietnam, Turkey, the United States, France, Italy, and Romania.

India's Initiatives
When India worked hard to fix up damaged lands and promote agroforestry using new ideas and new national policies meant to support these practices, the FAO praised the country.

Deforestation Trends
The FAO's study shows that the rate of deforestation has gone down significantly in many parts of the world.

In 2023, the rainforests in Indonesia shrank by 8.4%, and the rainforests in Brazil's Amazon shrank by a shocking 50%.
Climate change makes woods more vulnerable to wildfires and pests, even though there are some good signs. A big part of the world's carbon emissions in 2021 came from boreal woods. In 2023, wildfires are expected to release 6,687 megatonnes of carbon dioxide into the air.

Mangrove Losses and Forest Health

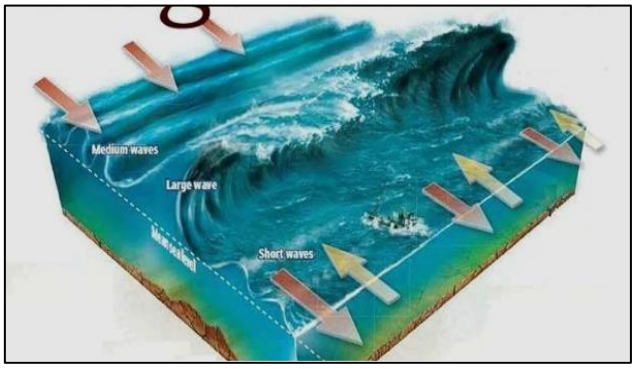
The amount of gross world mangrove loss went down by 23% between 2000 and 2010 and will continue to go down until 2020. The FAO did say, though, that insects and diseases pose a major threat to U.S. forests, and they expect big losses by 2027.

About the Food and Agriculture Organisation (FAO)

- **Foundation and Membership:** The Food and Agriculture Organization (FAO) was established in 1945 and comprises 194 member countries along with the European Union. The FAO's headquarters is located in Rome, Italy. As a specialized agency of the United Nations, it is dedicated to leading international efforts to defeat hunger and improve nutrition and food security worldwide.
- **Role and Initiatives**: FAO plays a key role in combating hunger and improving nutrition through global initiatives such as the "Zero Hunger" goal. The organization also hosts the Codex Alimentarius Commission, which sets international food standards to ensure the safety and quality of food products.
- By monitoring food security and agricultural sustainability, the FAO provides critical data and analysis to support informed policy-making and effective interventions.
- **Support and Development Projects:** FAO actively supports rural development through various projects in over 130 countries. Its work encompasses a wide range of activities, from improving crop production and improving livestock management to promoting sustainable agricultural practices.
- These efforts aim to boost productivity, increase resilience to climate change, and improve the livelihoods of farmers and rural communities around the world.

Rogue Waves

Rogue waves, much bigger than the waves around them, have historically been very dangerous to ships and structures. Mathematicians at the University of Maryland have recently made progress that led to the creation of an artificial intelligence (AI) model that can use data from 172 ocean buoys to predict these dangerous waves.



Understanding Rogue Waves

The World Meteorological Organization rates sea states from 0 (calm) to 9 (very high). Rogue waves are usually over twice as high as close waves. These strange events can happen when faraway waves come together or when ocean currents squeeze waves together, making the water dangerous for ships and people living near the coast.

Historical Impact

Before, rogue waves were unpredictable and dangerous, even though people knew they existed. From 2011 to 2018, they killed at least 386 people and sank 24 ships, which shows how important it is to have early warning systems.

AI Development Process

An AI program was taught by looking at 20-minute datasets from buoys and samples where rogue waves happened. The AI learned to find trends by comparing these to data of waves that weren't rogue. It could predict rogue waves 75% of the time one minute before they happened and 73% of the time five minutes before.

Encouraging Results

The model's ability to make predictions was tested at different ocean levels that weren't in the original training dataset. This suggests that it could be used in more situations. Adding more environmental data, like wind speeds and water levels, could lead to improvements in the future.

Researchers think that rogue wave predictions could become much more accurate if stronger AI methods and more data are added. Eventually, they think that this could lead to almost perfect forecasting. The study that showed these improvements came out in *Scientific Reports* on July 18.

U-WIN Portal

The Indian government has made a 100-day health plan that includes U-WIN, an online platform for managing vaccines that aims to increase the number of children in the country who get vaccinated. U-WIN is about to go live across the whole country, building on the successful digital infrastructure that was set up during the Covid-19 vaccination program by CoWIN.

What is U-WIN?

U-WIN is a website that helps people keep track of immunization records for kids younger than six and women who are pregnant. Users sign up with a government ID (like Aadhaar) and a cellphone number, which lets the system keep track of their vaccination records.

How Does U-WIN Work?

When a kid signs up for U-WIN, all of their required vaccinations can be added, which creates a color-coded vaccination certificate. Users are reminded of future vaccines by text message, and the platform makes it easy to find vaccination centers and make appointments. It gets rid of the need for actual vaccination books, making them easy to get all over the country.

Integration with Existing Systems

U-WIN will be linked to eVIN, a system that keeps track of vaccine stock and temperatures all along the cold chain. Using digital frameworks that health workers already know how to use, this integration aims to make sure that vaccine stocks are managed efficiently and that waste is kept to a minimum.

Benefits of U-WIN for Immunisation

U-WIN is expected to offer several advantages:

- **Improved Compliance**: SMS reminders are likely to improve adherence to vaccination schedules.

- **Portability:** It allows vaccinations to be recorded across different geographical locations, accommodating mobile populations.
- **Error Reduction:** The platform provides safeguards against incorrect dose administration.
- **Granular Data:** Individual vaccination records will help identify gaps in coverage, tackling the issue of "zero dose" children more effectively.
- **Centralised Database:** A comprehensive data repository could support informed policy-making, improving immunization strategies over time. U-WIN represents a significant step toward modernizing childhood immunization processes in India, promising to enhance healthcare delivery and governance.

Carbon fibre hi speed train

China has shown off a revolutionary passenger train made of only carbon fiber. This is a big step forward in high-speed rail technology. China is now even more of a world leader in this field thanks to this progress.

Key Features of the Carbon Fiber Train

Since the new train is so much lighter than old steel trains, smog levels will drop by a large amount. The main goal is to move vehicles that are as light as possible without sacrificing performance. It is planned that the carbon fiber train will reach speeds of up to 87 mph and use 7% less energy than regular steel trains. This new idea is very important for a healthy, low-carbon future in transportation.

High-Speed Rail's Eco-Friendly Reputation

It is already known that high-speed train is the most eco-friendly way to travel long distances. As a percentage of its passengers, it makes less noise, takes up less space, and pollutes the air less than cars and trains.

China has a high-speed train network that covers about 28,000 miles and can go as fast as 125 mph. This makes travel quick and cheap. AI has recently been added to operations and repair management, which makes things more reliable and efficient.

About high-speed rail technology

High-speed rail (HSR) goes faster than 250 km/h (155 mph). Japan's first high-speed rail line, the Shinkansen, opened in 1964. The world record is held by France's TGV, which went 357 mph (574 km/h) in 2007.

HSR systems use less energy per person than cars, so they are more environmentally friendly. A lot of them run on dedicated lines, which cuts down on delays. With more than 22,000 miles (35,000 km) of HSR tracks, China has the world's biggest network. HSR can cut travel times by a lot, which can improve the economy and connectivity in the area.

UN Water commission

With its recent membership, Ivory Coast became the 10th country in Africa to sign the UN Water Convention.
This accession is very important because it makes it easier for everyone to work together to manage water resources better, which is especially important now that water shortages and the effects of climate change are getting worse in the area.

Background of the UN Water Convention
Its full name is the Convention on the Protection and Use of Transboundary Watercourses and International Lakes. The UN Water Convention was created in 1992 mainly for the European area.
In 2016, its goals were made more global so that all UN Member States could join and support the long-term management of shared water supplies.

Ivory Coast's Water Resource Challenges
Ivory Coast shares eight transboundary river basins with its six neighboring countries. These areas have a lot of water stress. Climate change is making important rivers, like the Niger, very vulnerable, and their flows are expected to drop by a lot.

Importance of Cooperative Water Management
Countries must work together to make sure that transboundary waters are used in a way that doesn't harm the environment. Because Ivory Coast is very vulnerable to climate change and doesn't have a lot of water, joining the agreement should make it easier for countries in the region to work together on water management.

More About UN Water Convention
The "Convention on the Protection and Use of Transboundary Watercourses and International Lakes," as the UN Water Convention is legally known, was signed in 1992. It encourages sustainable control of water across borders.

It has only been approved by 47 countries, mostly in Europe. The Convention stresses the fair and sensible use of shared water supplies.

It motivates people to be involved in managing water. The 2016 change lets states that aren't UN members join. UNWCE is in charge of the staff. It also has rules for keeping the water clean and stopping waste.

National Quantum Mission

India set up the National Quantum Mission in 2022 with a budget of Rs 6,000 crore, which is about $0.75 billion. India is now one of only a few countries that is actively spending in quantum technology in order to use it to solve problems in energy, healthcare, and other areas.

India knows it needs to speed up its efforts to catch up to leading countries like China and the US in quantum sciences, even though it already has a strong study base in the field.

Understanding Quantum Technologies

Quantum technologies use the strange and often counterintuitive behavior of subatomic objects like electrons, which can be in more than one place at the same time (superposition) and be entangled over long distances. After being tested in many experiments, these qualities are now being used in real-world things like quantum computing, communications, sensors, and materials.

The Scale of Global Investment and Competitiveness

In the area of quantum science, China and the US are investing and producing a lot more than India. China is investing about $15 billion, while the US is investing about $3.75 billion, which is more than India is spending right now. These countries also do a lot more research and invention filings than India does. This makes the competition in this field very tough.

Strategic Steps Forward

Many people see the National Quantum Mission as the start of a planned and serious effort to make India better at using quantum technologies. To help reach this goal, India should strongly encourage young people to become scientists.

This could help the country build a devoted group of quantum scientists, similar to what it does in the atomic energy or space science fields.

The goal of this strategic aim is to build an ecosystem that can finally lead to technological leadership and big economic gains. India wants to catch up to and maybe even beat its global competitors in quantum technologies by building on its current strengths and focusing on strategy development and working with other countries.

Legal Metrology (Packaged Commodities) Rules, 2011

The Consumer Affairs Ministry wants to change the Legal Metrology (Packaged Commodities) Rules, 2011.

The goal of the change is to require that important information about pre-packaged goods sold in stores that are bigger than 25 kilograms or 25 liters be made public.

The goal of this move is to get rid of the current exemption for bulk packages and give customers more information.

Proposed Changes Explained

At the moment, important information like the maximum retail price (MRP), best before date, manufacturer information, and country of origin are not needed on bulk-packed things that are meant to be sold.

The new plan supports putting this important information on all pre-packaged goods meant for retail, no matter how big or small they are.

In this way, the government hopes to give people clear and easy-to-find information that will help them make smart buying choices.

Scope and Impact

The suggested rules would require all manufacturers, packers, and importers of pre-packaged goods that are going to stores to label them completely. Bear in mind that these changes will only affect markets for consumer goods.
They will not affect markets for goods used in businesses or institutions. The business will probably have better rules after these rules are put in place. This could help avoid misunderstandings and legal problems.

Public Participation and Timeline

To make sure that everyone has a chance to be a part of this regulatory process, the Ministry has given the public until July 29 to comment on the planned change.
With this method, stakeholders and the public can give their opinions and concerns, which could help make the proposed changes even better before they are finalized.

About Legal Metrology (Packaged Commodities) Rules
India's Legal Metrology Act of 2009 created the Legal Metrology (Packaged Commodities) Rules.
These rules say that pre-packaged goods must clearly show important details like the net quantity, the manufacturing date, the expiration date, the highest retail price, and information on how to contact the company for customer service.

Online stores must make sure that the same information can be found on their sites. For added safety, these rules say that the statement on packages has to be clear and easy to read. It is against the rules to use non-standard units, and the rules require specific statements, like the name and address of the manufacturer, packer, and importer.

People who break these rules may have to deal with fines and civil action. The rules also give customers the power to file complaints, which shows a dedication to openness and customer rights

Uranium Contamination

A new study by Bhabha Atomic Research Centre (BARC) has concluded that concentration of uranium up to 60 micrograms per litre (millionth of a gram per litre or µg/l) in drinking water was entirely safe, suggesting that the recently formulated "more stringent" national standard of 30 µg/l could be counterproductive.

Background:

- For years, the acceptable level of uranium concentration in drinking water in India was 60 µg/l. In 2021, the Bureau of Indian Standards (BIS), the custodian of standards and quality in India announced a new limit of 30 µg/l, in line with recommendations of the World Health Organization (WHO).

About Uranium :

- Uranium is a silvery-white metallic chemical element, with atomic number 92. It is assigned the chemical symbol U.
- A uranium atom has 92 protons and 92 electrons, of which 6 are valence electrons.
- Uranium has the highest atomic weight of all naturally occurring elements.
- Uranium occurs naturally in low concentrations in soil, rock and water, and is commercially extracted from uranium-bearing minerals such as uraninite.
- Uranium ore can be mined from open pits or underground excavations. The ore can then be crushed and treated at a mill to separate the valuable uranium from the ore.
- Uranium may also be dissolved directly from the ore deposits in the ground (in-situ leaching) and pumped to the surface.
- Its radioactive properties were not recognized until 1866, and its potential for use as an energy source was not manifested until the mid-20th century.

About the new standards

- The BARC study cited several medical researches to argue that small concentrations of uranium in drinking water pose no threat.
- According to the researchers, the WHO's standards of uranium concentration in drinking water — 30 µg/l — were mere guidelines, and not a recommended safety limit.
- Finland and Slovakia — two nations with considerable amounts of uranium consumption — have prescribed safety limits of 100 and 350 µg/l respectively; another uranium-rich country, South Africa, has a limit of 70 µg/l.
- The limits in countries like Canada and Australia that have the largest deposits of uranium among others, however, are 20 and 15 µg/l, respectively. Germany, which does not have uranium, has even lower limits.
- According to the BARC study, in the absence of any evidence of adverse health impacts at such small concentrations, considerations like geological (prevalence of uranium) and socio-economic conditions, and population dynamics must also be taken into account while deciding on national standards on uranium contamination.

International Court of Justice (ICJ)

The International Court of Justice (ICJ) said on July 19 that Israel's occupation of the West Bank and East Jerusalem violated international law, and its presence in Palestinian territories should come to an end as soon as possible.

Background:

- Israel has occupied the West Bank and East Jerusalem since the Six-Day War in 1967. Prior to this, the territories were under Jordanian control.

About International Court of Justice :

- The ICJ is the principal judicial organ of the United Nations (UN).
- It was established in June 1945 by the Charter of the United Nations and began work in April 1946.
- The court is the successor to the Permanent Court of International Justice (PCIJ), which was brought into being through, and by, the League of Nations, 1922. Like the PCIJ, the ICJ is based at the Peace Palace in The Hague.
- It is the only one of the six principal organs of the UN that is not located in New York City. The other five organs are the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, and the Secretariat.
- According to the ICJ's own description, its role is "to settle, in accordance with international law, legal disputes submitted to it by States and to give advisory opinions on legal questions referred to it by authorized United Nations organs and specialized agencies". The court "as a whole must represent the main forms of civilization and the principal legal systems of the world".

English and French are the ICJ's official languages.

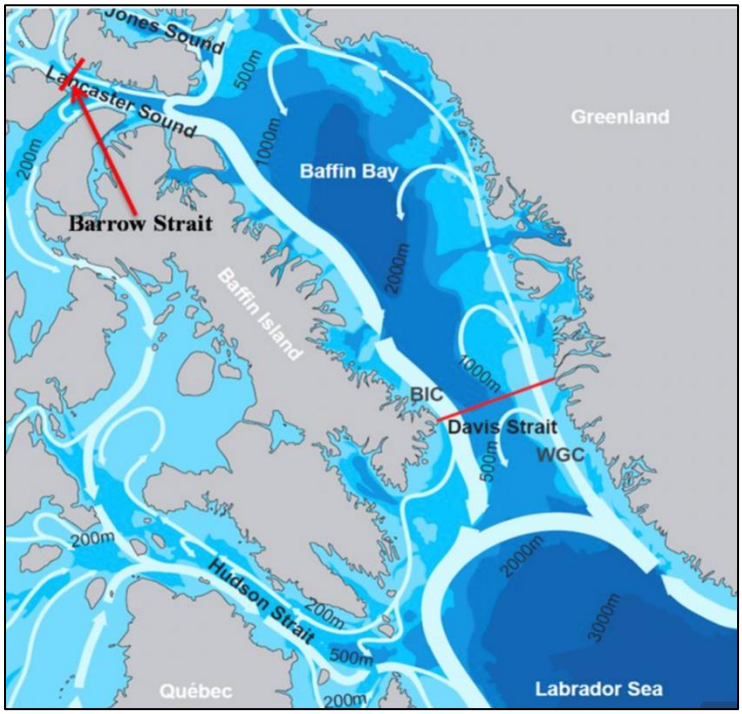
- All members of the UN are automatically parties to the ICJ statute, but this does not automatically give the ICJ jurisdiction over disputes involving them. The ICJ gets jurisdiction only if both parties consent to it.
- The judgment of the ICJ is final and technically binding on the parties to a case. There is no provision of appeal; it can at the most, be subject to interpretation or, upon the discovery of a new fact, revision.
- However, the ICJ has no way to ensure compliance of its orders, and its authority is derived from the willingness of countries to abide by them.
- The ICJ has 15 judges who are elected to nine-year terms by the UN General Assembly and Security Council, which vote simultaneously but separately.
- To be elected, a candidate must receive a majority of the votes in both bodies.
- A third of the court is elected every three years.
- Four Indians have been members of the ICJ so far.

ICJ vs. ICC

	International Court of Justice (ICJ) La Cour Internationale de Justice (CIJ)	International Criminal Court (ICC) La Cour pénale internationale (CPI)
Year Court Established	1946	2002
UN-Relationship	Official court of the U.N., commonly referred to as the "World Court."	Independent. May receive case referrals from the UN Security Council.
Location	The Hague, The Netherlands	The Hague, The Netherlands
Types of Cases	Contentious between parties & Advisory opinions	Criminal prosecution of individuals
Subject Matter	Sovereignty, boundary, & maritime disputes, trade, natural resources, human rights, treaty violations, treaty interpretation, and more.	Genocide, crimes against humanity, war crimes, crimes of aggression
Funding	UN-funded.	Assessed contribution from state parties to the Rome Statute; voluntary contributions from the U.N.; voluntary contributions from governments, international organizations, individuals, corporations and other entities.

Davis Strait

Davis Strait has long intrigued scientists due to its complex geological features. Recent research has uncovered a fascinating aspect of this region – a microcontinent that was formed through intricate plate tectonic processes.



- A team of geologists identified an isolated block of thick continental crust in the Davis Strait.
- This formation, measuring 19-24 kilometres thick, was likely separated from Greenland due to east-west extension along its margin. It has been named the Davis Strait proto-microcontinent.

About Davis Strait :

- TheDavis Strait is a southern arm of the Arctic Ocean that lies north of the Labrador Sea.
- Davis Strait lies between the southeastern Baffin Island (Canada) and southwestern Greenland.
- The strait separates the depths of Baffin Bay (north) from those of the Labrador Sea (south) and forms part of the Northwest Passage, a route through the Canadian Arctic Archipelago linking the Atlantic and Pacific oceans.
- It is approximately 400 miles (650 km) north to south and 200 to 400 miles wide.

International Covenant on Civil and Political Rights (ICCPR)

India successfully concluded its 4th periodic review by the Human Rights Committee under the International Covenant on Civil and Political Rights (ICCPR).

Background:

- The Human Rights Committee, comprising 18 independent experts serving in their individual capacity, monitors implementation of ICCPR and reviews reports of all States Parties (countries) by conducting periodic reviews, and then making observations and recommendations.

About International Covenant on Civil and Political Rights (ICCPR)

- The International Covenant on Civil and Political Rights (ICCPR) is a multilateral treaty that commits nations to respect the civil and political rights of individuals, including the right to life, freedom of religion, freedom of speech, freedom of assembly, electoral rights and rights to due process and a fair trial.
- It was adopted by United Nations General Assembly Resolution 2200A (XXI) on 16 December 1966 and entered into force on 23 March 1976 after its thirty-fifth ratification or accession.
- As of June 2024, the Covenant has 174 parties and six more signatories without ratification, most notably the People's Republic of China and Cuba; North Korea is the only state that has tried to withdraw.
- The ICCPR, together with the Universal Declaration of Human Rights and the International Covenant on Economic Social and Cultural Rights, are considered the International Bill of Human Rights.
- The ICCPR obligates countries that have ratified the treaty to protect and preserve basic human rights, such as: the right to life and human dignity; equality before the law; freedom of speech, assembly, and association; religious freedom and privacy; freedom from torture, ill-treatment, and arbitrary detention; gender equality; the right to a fair trial; right to family life and minority rights.
- The Covenant compels governments to take administrative, judicial, and legislative measures in order to protect the rights enshrined in the treaty and to provide an effective remedy.

- Compliance with the ICCPR is monitored by the United Nations Human Rights Committee, which reviews regular reports of states parties on how the rights are being implemented.
- States must report one year after acceding to the Covenant and then whenever the Committee requests (usually every four years).

Ratapani Wildlife Sanctuary

The Madhya Pradesh State Wildlife Board has accorded approval to declare Ratapani Wildlife Sanctuary, on the outskirts of Bhopal, as the eighth tiger reserve of MP.

The Central Government can declare a sanctuary through notification if it determines that an area holds adequate ecological, faunal, floral, geomorphological, natural, or zoological significance for the protection, propagation, or development of wildlife or its environment.

Background:

- Ratapani's diverse ecosystem make it a valuable addition to India's tiger conservation efforts.

About Ratapani Wildlife Sanctuary :

- Ratapani Wildlife Sanctuary is located in Madhya Pradesh.
- Ratapani was first notified in 1976 and later extended in 1983.
- The proposal to declare Ratapani wildlife sanctuary as tiger reserve has been in discussion since 2008.
- The National Tiger Conservation Authority (NTCA) has accorded in principle approval to notify Ratapani wildlife sanctuary as the tiger reserve in 2011.
- It is situated in the Vindhya ranges and spans an area of 824 square kilometers.
- Ratapani tiger reserve, when notified, will be the first tiger reserve in the country to have proximity to a state capital.
- The proposed tiger reserve will be the eighth one in Madhya Pradesh. The seven other existing tiger reserves are Bandhavgarh, Kanha, Panna, Pench, Sanjay-Dubri, Satpura and Veerangana Durgavati.

Flora:

- The sanctuary features a diverse landscape with teak forests, hills, plateaus, valleys, and plains.
- Two major reservoirs, Barna Reservoir and Ratapani Dam (Barrusot lake), enhance its ecological significance.

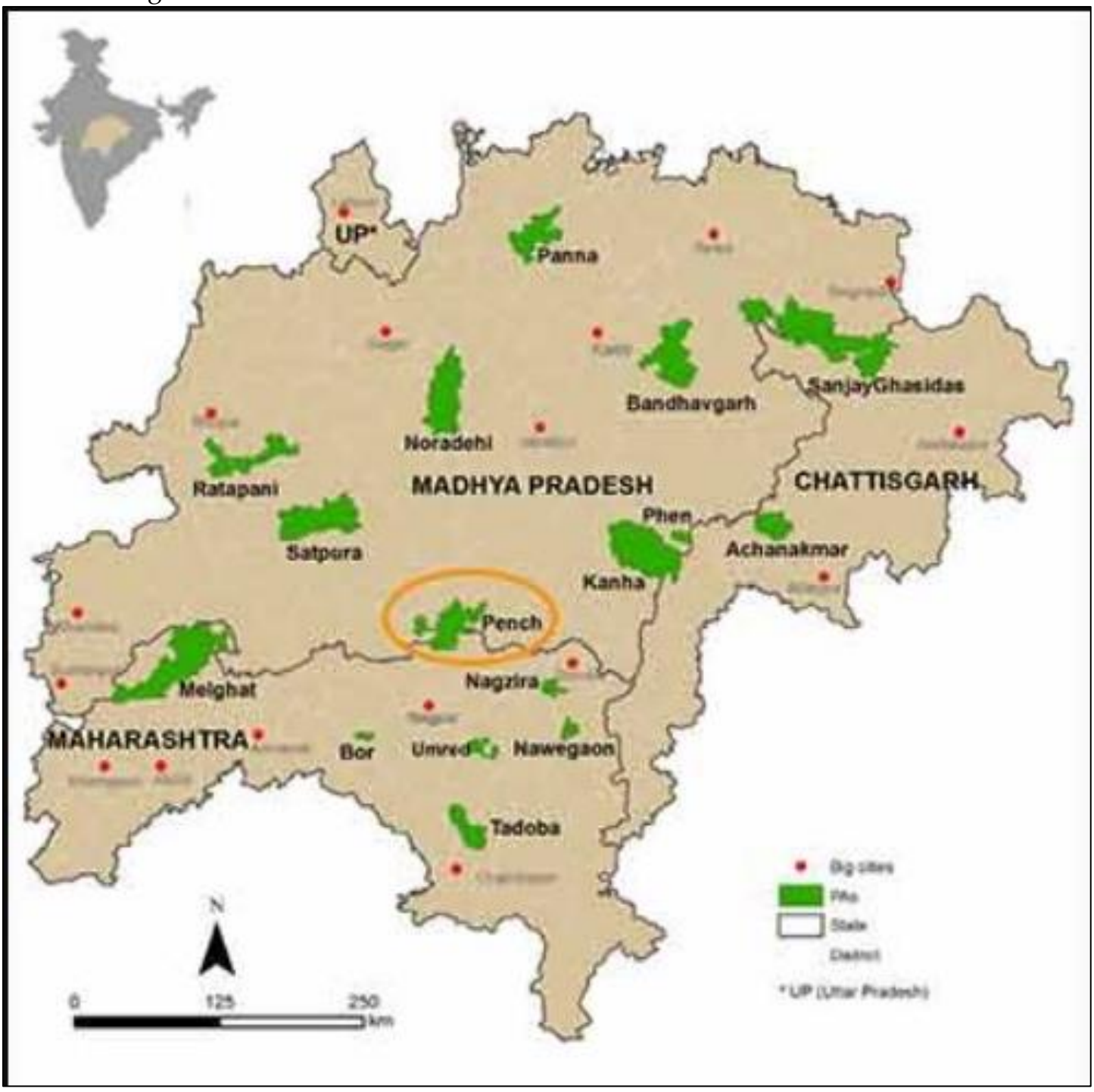
Fauna:

- Ratapani hosts over 150 species of birds, including the paradise flycatcher, which is the state bird of Madhya Pradesh.
- The wildlife includes tigers, leopards, wild dogs, hyenas, jackals, foxes, spotted deer, blue bulls, sambhar, barking deer, chinkara, black bucks, and monkeys.
- Historical and Cultural Significance:
- The Bhimbetka rock shelters, adorned with ancient rock paintings, are a UNESCO World Heritage Site within the sanctuary.

- The Chinkara, an endangered species, also finds refuge here.
- Other inhabitants include the Panther, Hyena, Jackal, Indian Fox, Wild Dog, Jungle Cat, Small Indian Civet, Blue Bull, Chinkara, Black Buck, Chausingha, Spotted Deer, and Barking Deer.

Historical Connection:

- Ratapani is home to the Bhimbetka rock shelters, adorned with ancient rock paintings dating back over 30,000 years. UNESCO has recognized Bhimbetka as a World Heritage Site.



Colombo Security Conclave

The Colombo Security Conclave (CSC) is a group of regional security experts who work together to solve naval security problems in the Indian Ocean.

The CSC was created in 2020 by India, Sri Lanka, and the Maldives as starting members. Its goal is to encourage member states to work together on security issues. Since then, Mauritius and, most recently, Bangladesh have joined the group.

About Colombo Security Conclave (CSC)

● Regional Security Collaboration: The Colombo Security Conclave (CSC), which began in 2011 as the Colombo Security Dialogue, grew out of coastal security cooperation between India, Sri Lanka, and the Maldives. Its goal was to encourage more cooperation in the region on security and counterterrorism.

● Expanded Membership and Focus Areas: Mauritius joined the CSC in 2021, which widened its focus to include cybercrime, trafficking in persons, and disaster response. This shows how flexible it is in dealing with new problems in the area.

● High-Level Dialogues and Practical Measures: The CSC has changed over time to include organized, high-level dialogues and working groups that focus on real-world, doable ways to work together to solve problems in the region's security.

Recent Expansion of the CSC

Bangladesh became the fifth member state of the CSC on July 10, during the 8th Deputy National Security Adviser (DNSA) level meeting, which was held virtually by Mauritius. The meeting was a big step toward improving safety in the area and increasing the conclave's power in the Indian Ocean.

Member States and Structure

India, Sri Lanka, the Maldives, Mauritius, and now Bangladesh are all part of the CSC. Each of them contributes to the goals and plan of the conclave. As an observing state, Seychelles is also taking part. The fact that the CSC's secretariat is based in Colombo, Sri Lanka, shows how important the city is for maritime security in the area.

International Centre for Audit of Local Governance (iCAL)

The International Centre for Audit of Local Governance (iCAL) was inaugurated by the Comptroller and Auditor General (CAG) of India.

Background:

- By establishing iCAL, the Comptroller and Auditor General (CAG) aims to create a cooperative ecosystem, elevate auditing standards, and enhance financial accountability at the grassroots level in India.

About The International Centre for Audit of Local Governance (iCAL):

- The International Centre for Audit of Local Governance (iCAL), a pioneering initiative by supreme audit institutions (SAIs) India, was officially inaugurated in Rajkot, Gujarat on 18th July 2024.
- iCAL's primary objectives are to develop and enhance standards for Local Government Audits, strengthen data collection and reporting, and empower auditors, executives, and elected representatives through comprehensive training programs and leadership development initiatives.
- It aims to improve financial performance assessment and service delivery by providing Technical Guidance and Support to Local Government auditors.
- iCAL would assist Local Governments in achieving the Sustainable Development Goals, fostering community engagement, and addressing global challenges, like climate change and the blue economy, as they play a crucial role in effective policy implementation and economic growth at the grassroots level.

Need for iCAL:

- Increased Funding: With significant funds flowing to local bodies, proper auditing is essential to ensure efficient utilization.
- Global Practices: The CAG highlighted the need to adopt global best practices in local government auditing, noting that 40 countries have supreme audit institutions (SAIs) for this purpose.
- Capacity Building: Building the capacity of auditors and local government employees is essential to improve financial management practices and internal controls.

How are local bodies audited in India?

- Many state governments have an Examiner of **Local Fund Accounts** (ELFA) or **Director of Local Fund Accounts** (DLFA) for auditing their accounts.
- ELFA audits the utilisation of funds granted by the state government to local bodies.
- The CAG, on the other hand, conducts audits of all funds (including the state and Central governments).
- It also exercises control and supervision over the proper maintenance of accounts and auditing for all **three levels of PRIs/ULBs.** Under its technical guidance and support initiative, CAG also advises and supports ELFA or DLFA.

Itanagar wildlife sanctuary

Researchers from the Botanical Survey of India (BSI) have identified a new plant species, Phlogacanthus sudhansusekharii, in the Itanagar Wildlife Sanctuary, Arunachal Pradesh. This find brings attention to the area's wide range of plants and animals.

Species Overview

The newly discovered species belongs to the family Acanthaceae and the genus Phlogacanthus, which includes 13 known species primarily found in northeastern and eastern Himalayan states. Named in recognition of Dr Sudhansu Sekhar Dash, a BSI scientist, the species acknowledges his significant contributions to plant and ecological research in the Indian Himalayan region.

About Phlogacanthus sudhansusekharii

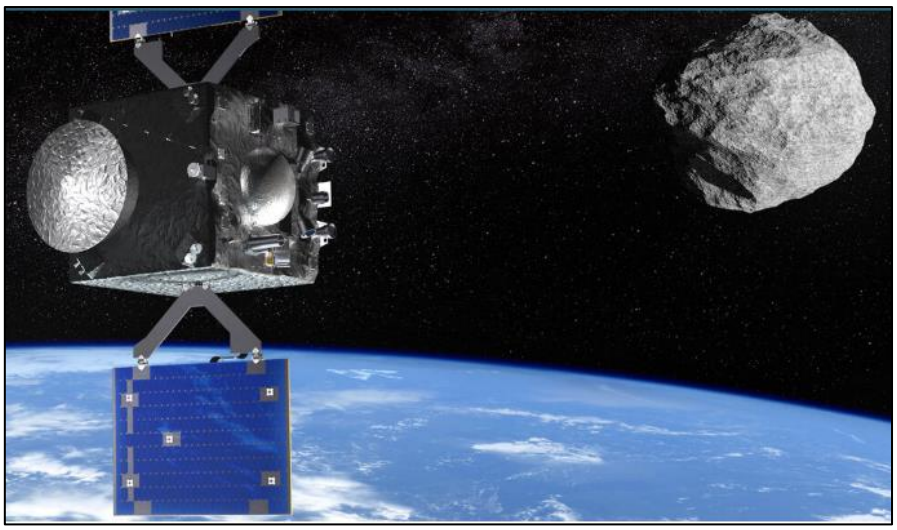
The Phlogacanthus sudhansusekharii plant species is only found in India, in the Northeast area. It was found in 2015 and is in the family Acanthaceae. This plant has bright purple flowers and unique leaves. It was named after Sudhansu Sekhar Das.

It usually grows in damp, shady woods and is an important part of the ecosystems in those places. Loss of habitat makes conservation activities very important. Its health benefits haven't been fully studied yet, which shows that it might have important uses in traditional medicine.

RASMES Mission

The Shoemaker-Levy 9 comet broke up and hit Jupiter in 1994, which sparked a lot of interest in protecting planets. People talked about how to stop similar events from happening on Earth after this one.

Planetary defense systems are getting a lot of attention around the world because asteroids could hit Earth. Space Safety is an ESA program that works to lower these risks through its future flights.



Introduction of Ramses

ESA has started getting ready for Ramses, the Rapid Apophis Mission for Space Safety. The goal of Ramses is to study asteroid 99942 Apophis when it comes close to Earth in 2029.

Apophis, which is about 375 meters across, will pass within 32,000 km of Earth on April 13, 2029, and billions of people will be able to see it. This event is very rare; it only happens about once every 5,000 to 10,000 years. It won't be a crash threat for at least 100 years.

Scientific Goals of the Ramses Mission

During its flyby, the Ramses spaceship will see how Earth's gravity affects Apophis. This includes looking at how the asteroid's shape, rotation, and surface features change over time. This will help us learn more about these qualities, which will be important for future defense plans.

NASA's OSIRIS-REx spacecraft will also go after Apophis, which will help experts figure out what changes happened after the flyby. This two-pronged method lets us fully compare the asteroid's state before and after.

Ramses is a good example of how to quickly send out reconnaissance missions to keep an eye on possibly dangerous asteroids. Accurate data will help with tactics for deflecting asteroids and avoiding impacts.

Ballistic Missile defence system

The Phase-II Ballistic Missile Defense (BMD) system was successfully flight-tested by the Defense Research and Development Organization (DRDO) on July 24, 2024. This test showed that India is getting better at protecting itself against ballistic missiles with lengths of up to 5,000 kilometers. This is a big step forward from the current Phase-I system.

Phases of the BMD System

There are two parts to the BMD program:

- **Phase I:** Already set up and working, this step can stop missiles from up to 2,000 km away.
- **Phase II:** This phase, which was just tried, makes it easier to intercept targets up to 5,000 km away.

Test Procedure

As part of the test, a target missile was fired from LC-IV Dhamra to mimic a threat from an enemy. Both land and sea radars picked up the signal, which turned on the Air Defence (AD) interception system. Two minutes later, the Phase-II AD endo-atmospheric missile fired from the Integrated Test Range in Chandipur was used to intercept the target.

Technology and Capabilities

The Phase-II system combines cutting-edge technologies with a network-based structure for warfare:

- Long-range sensors
- Low latency communication systems
- Mission Control Centre
- Advanced interceptor missiles

Together, these parts improve national security by stopping different types of enemy ballistic missile risks within a certain range of altitudes.

National Bioenergy Programme

The Central government has revised the financial assistance rates for Biomass Pellet manufacturing under the National Bioenergy Programme.

Background:

- This strategic funding revision is designed to accelerate the adoption of biomass pellets, particularly in states like Punjab, Haryana, and Uttar Pradesh, where the burning of paddy straw and other agricultural residues has been a persistent challenge.

About National Bioenergy Programme

- The Ministry of New and Renewable Energy (MNRE) notified the National Bioenergy Programme in 2022.
- This programme has a provision of Central Financial Assistance (CFA) for various components related to Power generation, Biogas/BioCNG generation and Briquette/Pellet manufacturing, wherein Biomass is one of the major feedstock material, which primarily shall be sourced from rural areas.
- The Programme will not only promote the utilization of surplus biomass but also provide an additional source of income for rural households.
- The National Bioenergy Energy Programme supports setting up of Bioenergy projects in the country under the following components:
    - Waste to Energy Programme: The objective of this programme is to support setting up of waste to energy projects for generation of Biogas/BioCNG/Power/producer or syngas from urban, industrial and agricultural wastes/residues. The programme provides Central Financial Assistance (CFA) to project developers and service charges to implementing/inspection agencies in respect of successful commissioning of Waste to Energy plants.
    - Biomass Programme: The objective of this programme is to support setting up of Biomass Briquette/Pellet manufacturing plants and Biomass (non-bagasse) based cogeneration projects in the country. This programme provides Central Financial Assistance (CFA) to project developers and service charges to implementing/inspection agencies for setting up of Biomass projects.
    - Biogas Programme: The objective of this programme is to support setting up of biogas plants for clean cooking fuel, lighting, meeting thermal and small power needs of users which ultimately results in GHG reduction, improved sanitation, women empowerment and creation of rural employment.