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- MAHASAGAR Initiative
- Maha Kumbh Mela
- Namo Drone Didi Scheme
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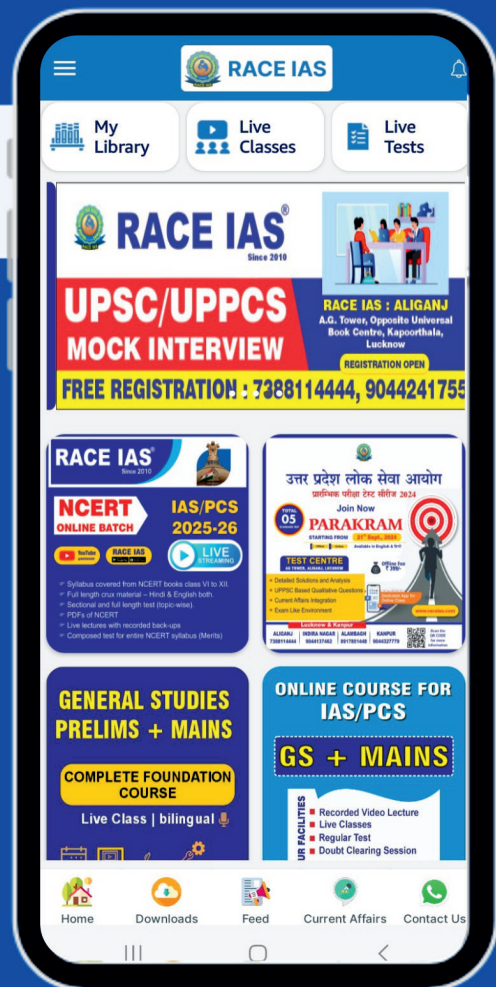
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# CURRENT AFFAIRS

## GEOGRAPHY / ENVIRONMENT & ECOLOGY / DISASTER MANAGEMENT

### Alstonia Scholaris

#### Why in the news?

Even though Cyclone Dana triggered heavy rain in Kolkata, it did bring relief to those with allergies and asthma, as the heavy showers led to chhatim trees (*Alstonia scholaris*) shedding flowers that have a strong fragrance.

#### About *Alstonia scholaris*:

- It is commonly called blackboard tree, scholar tree, milkwood, or devil's tree in English, and is an evergreen tropical tree in the dogbane family (Apocynaceae).
- It is called 'Saptaparna' in India. It has been cited in the Charaka and Sushruta Samhithas.
- Distribution: This tree is widespread across the Indian subcontinent, Southeast Asia, and southern China, thriving in tropical and subtropical climates.

#### Features of the *Alstonia scholaris*:

- It grows to a height of 10–20 meters, sometimes reaching up to 40 meters.
- It has dark grey bark and a crown of simple, whorled leaves arranged in clusters of seven, giving rise to the name "saptaparni" (meaning "seven leaves").
- Flowers: Small, fragrant, and greenish-white flowers bloom in clusters during late autumn and early winter.

#### Uses:

- The bark, leaves, and other parts of *Alstonia scholaris* have been used in traditional medicine for treating respiratory conditions, fever, skin disorders, and digestive issues.
- The soft, lightweight wood of the blackboard tree was historically used for making writing slates and blackboards, which is how it got the common name "blackboard tree."
- IUCN status: Least Concern



Source: The Times of India

### Black Hole Triple System

#### Why in the news?

A new study says scientists have discovered a “black hole triple” in space for the first time.

#### About Black Hole Triple System:

- The system comprises a black hole at its center, currently in the process of consuming a small star spiralling very close to it.
- There is also a second star, which appears to be circling the black hole but is actually far away.



- The discovery of the system, located about 8,000 light years away from Earth has raised questions about how black holes are formed.
- Many black holes discovered until now have been part of binary systems, consisting of a black hole and a secondary object (such as a star or another black hole).
- But the black hole triple not only has one star which orbits the black hole about every 6.5 days, but also a more far-off star which orbits it every 70,000 years.
- It is situated in the constellation of Cygnus, the system features one of the oldest known black holes, the V404 Cygni, which is nine times as big as the Sun in our solar system.
- V404 Cygni has two stars around it as the black hole did not arise from a supernova, which typically kicks away outer stars in the explosion.
- Instead, it was formed through another process called “direct collapse”, where the star caves in after expending all its fuel, but does not explode.

Source: Indian Express

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## Mount Lewotobi Laki-Laki

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### Why in the news?

Recently, at least 10 people died after Mount Lewotobi Laki-laki in eastern Indonesia erupted and forced authorities to evacuate several nearby villages.



### About Mount Lewotobi Laki-Laki:

- It is located on Flores Island.
- It is a volcanic mountain situated in East Nusa Tenggara province of:
  - The volcano is part of a twin-volcano system that the local residents perceive as male and female mountains.
  - The ongoing volcanic eruption has occurred at the male counterpart of the system (Lewotobi Lakilaki) while the female mountain is known as Lewotobi Perempuan.
  - The two mountains are classified as stratovolcanoes which are the most commonly occurring volcanoes around the world and are formed by the layers of lava that repeatedly oozes out of the crater.
- It is not uncommon for Indonesia to witness such volcanic eruptions as it is situated along the famous ‘Ring of Fire’ in the Pacific region- an encirclement dotted by active volcanoes that sit on top of vigorous tectonic plates that often collide and lead to seismic activity causing earthquakes and tsunamis.

### What are Stratovolcanoes?

- It is a tall, steep, and cone-shaped type of volcano.
- Unlike flat shield volcanoes, they have higher peaks.
- They are typically found above subduction zones, and they are often part of large volcanically active regions, such as the Ring of Fire that frames much of the Pacific Ocean.
- Stratovolcanoes comprise the largest percentage (~60%) of the Earth's individual volcanoes, and most are characterized by eruptions of andesite and dacite, lavas that are cooler and more viscous than basalt.

Source: Down to earth

## Common Cat Snake

### Why in the news?

The elusive common cat snake was recently discovered in the Valmiki Tiger Reserve, Bihar.

### About Common Cat Snake:

- Common Cat Snake, also known as Indian gamma snake, is a species of rear-fanged snake endemic to South Asia.
- Scientific Name: *Boiga trigonata*
- In India, it is found all over the country, excluding north-east states after Sikkim; it is also not found in Indian islands.
- Habitat: It can be found in almost all kinds of forests and wide ranges of elevations.
- While venomous, the Common Cat Snake's venom is not considered highly dangerous to humans. It primarily uses its venom to subdue prey.



### Features of the Common Cat Snake :

- It is a medium-sized snake that is usually found in the 70-100 cm range.
- Its body is slender, thin, and bears a thin tail.
- Its upper body colour is grey-brown, with cream-coloured irregular markings, margined with black colour.
- Its underside is yellow-white or yellow-brown.
- Its head is large, triangular-shaped, and distinctly broader than the neck.
- Unlike other cat snakes of its range, this species bears characteristic “gamma” or “Y”-shaped marking that helps in its quick identification on the field.
- Lifespan: 12-20 years
- Diet: It primarily consists of small vertebrates.
- IUCN Red List: Least Concern

### Key facts about the Valmiki Tiger Reserve:

- It is the only tiger reserve in Bihar and forms the easternmost limit of India's Himalayan Terai forests.
- The forest contains a mix of bhabar and terai tracts and is located in the Gangetic Plains biogeographic zone.
- In 1978, it was designated as a Wildlife Sanctuary.
- In 1990, Valmiki National Park was established.
- The Valmiki Wildlife Sanctuary and National Park is the country's 18th Tiger Reserve. Valmiki National Park and Valmiki Wild Sanctuary make up the Valmiki Tiger Reserve.
- The tiger reserve shares a border with Nepal's Chitwan National Park.
- The park is bisected by two rivers: the Gandak and the Masan River. Valmiki wildlife sanctuary is bordered on the west by the River Gandak.
- It enters India at Valmikinagar, where it is joined by two rivulets, Sonha and Pachnad, to form the holy Triveni confluence.
- A diverse range of flora and fauna can be found in the Valmiki National Park. Moisture-bearing Sal forests, dry-bearing Sal forests, moist mixed deciduous forests without Sal, cane, and tropical seasonal swamp forests with reed beds and wet grasslands make up the park.
- Fauna includes – Mammals: tiger, rhinoceros, black bear, leopard, wild dog, wild buffalo, wild boar, hyena, leopard cat, wild cat, etc

- Reptiles – Python, Cobra, King cobra, Krait, Banded krait, Sand boa, Crocodiles, etc
- Indian bison and one-horned rhinoceros frequently migrate from Chitwan to Valmikinagar.

Source: Down to earth

## Gravity Energy Storage

### Why in the news?

Gravity energy storage is emerging as a viable solution to address a major challenge of solar and wind power.

#### About Gravity Energy Storage:

- It is a new technology that stores energy using gravity.

#### How does it work?

- It involves lifting a heavy mass during excess energy generation and releasing it to produce electricity when demand rises or solar energy is unavailable.
- The types of weights used are often water, concrete blocks or compressed earth blocks.
- Unlike pumped-hydro energy storage, gravity energy storage offers more flexibility in site selection.
- A typical setup involves a heavy piston within a fluid-filled cylindrical container.
- When solar energy production exceeds demand, surplus electricity lifts the piston, converting the surplus electrical energy into stored energy.
- When demand surpasses supply, the piston descends, driving water through a turbine to generate electricity supply to meet demand.

#### Advantages of Gravity Energy Storage:

- It can last for decades with minimal maintenance, unlike batteries that degrade over time.
- It avoids harmful chemical reactions, reducing environmental impact and disposal issues, an important consideration in the move towards a greener planet.
- It can also be more cost-effective for large-scale applications, with lower level costs of energy and storage.
- It is particularly advantageous in areas with space constraints or environmental concerns that restrict the deployment of other storage systems.



Source: Down to earth

## Ottavalo's Andean Mouse

### Why in the news?

A new species of mouse with a remarkably long tail, dubbed Ottavalo's Andean mouse, has been discovered near a dormant volcano in Ecuador.

#### About Ottavalo's Andean Mouse:

- It is a new species of mouse with a remarkably long tail.
- It was discovered near Mojanda, a dormant volcano with a caldera filled with The site is about a 50-mile





trip from Quito, a city situated in the high Andes of northern Ecuador.

- It has been identified as endemic to the temperate, high-altitude Andean regions of the montane forest.
- It was named in honor of the local Otavalo culture, which is widely recognized for its musical heritage and skilled weaving and textile commerce.

#### **Features of the new species :**

- In comparison to related species, the Otavalos Andean mouse is slightly larger, with shorter hair on its back.
- It has a coat of “fine, dense, and soft” fur.
- The fur on its back and sides is described as “dark drab,” while its sides show a more brownish tone.
- On its stomach, the fur is a lighter gray with a hint of “ground cinnamon,” giving it a distinct color gradient across its body.
- The most distinguishable feature of the new mouse species is its tail, which is longer than the length of the entire body
- The tail is overall covered with fine hairs and a row of scales with a white tip.

**Source: News on Air**

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## **Lightning**

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### **Why in the news?**

Climate change is making lightning strikes around the world more common and deadlier.

### **About Lightning:**

- It strikes are possible because electrical charges can build up in a cloud beyond the ability of air to keep resisting their movement.
- It is an electrical discharge between charged particles in a cloud and the ground.
- It can occur between opposite charges within the thunderstorm cloud (intra-cloud lightning) or between opposite charges in the cloud and on the ground (cloud-to-ground lightning).
- It is one of the oldest observed natural phenomena on Earth. It can be seen in volcanic eruptions, extremely intense forest fires, surface nuclear detonations, heavy snowstorms, large hurricanes, and obviously, thunderstorms.
- While a lightning strike occurs between a cloud and an object on or near the ground, it takes the path of least resistance, which means it moves towards the closest object with the highest electric potential.



### **What is a lightning rod?**

- It is a metallic rod (usually copper) that protects a structure from lightning damage by intercepting flashes and guiding their currents into the ground.
- Lightning rods are pointy and pointed things create stronger electric fields near them.
- The lightning rod is connected to a wire that drops through the length of the building into the ground, where it dissipates its electric charges into its surroundings.

**Source: The Hindu**

## Eurasian Otter

### Why in the news?

A rescue operation conducted by the Pune Forest Department and RESQ Charitable Trust has revealed a rare Eurasian Otter in Indapur, Pune District, a species previously unrecorded in this area.



### About Eurasian Otter:

- The Eurasian otter, also known as the European otter, Eurasian River otter, common otter, and Old-World otter, is a semi aquatic carnivorous mammal native to Eurasia.
- Scientific Name: *Lutra lutra*

### Distribution of the Species :

- It has one of the widest distributions of all palearctic mammals, spanning countries in the Middle East, Europe, and Northern Africa, across to Eastern Russia, China, and other Asian countries.
- In India, it occurs in northern, northeast and southern India.

### Habitat of the Eurasian Otter:

- It lives in a wide variety of aquatic habitats, including highland and lowland lakes, rivers, streams, marshes, swamp forests, and coastal areas, independent of their size, origin, or latitude.
- In the Indian subcontinent, it is found in cold hills and mountain streams.

### Features of the Species:

- It is an elusive, solitary otter.
- It has sleek brown fur, which is often paler on the underside, and a long, lithe body with a thick tail and short legs.
- Adaptations for an aquatic lifestyle include webbed feet, the ability to close the small ears and the nose when underwater, and very dense, short fur that traps a layer of air to insulate the animal.
- Many sensitive hairs ('vibrissae') frame the snout; these help the otter to locate prey.
- It has an acute sense of sight, smell, and hearing.
- Vocalizations include a high-pitched whistle between a mother and her cubs, twittering noises produced during play-fighting, and cat-like noises when fighting.

### Conservation Status:

- IUCN: Near threatened
- Wildlife Protection Act, 1972: Schedule II
- CITES: Appendix I

Source: Indian Express

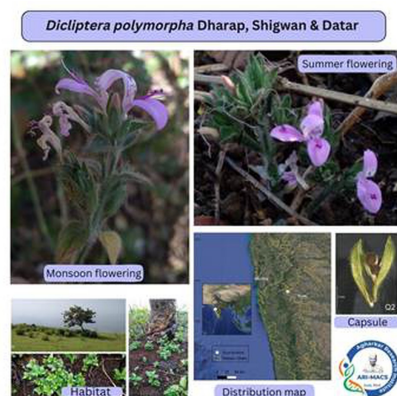
## Dicliptera Polymorpha

### Why in the news?

Recently, researchers discovered a new species of the genus *Dicliptera* in the Northern Western Ghats of India and named it as *Dicliptera polymorpha*.

### About *Dicliptera Polymorpha*:

- It is a distinctive species, notable for its fire-resilient, pyrophytic habit and its unusual dual-blooming pattern.
- In addition to its typical post-monsoon flowering, the species exhibits a second, vigorous burst of flowering triggered by the grassland fires commonly set by locals in the region.



- This species is taxonomically unique, with inflorescence units (cymules) that develop into spicate inflorescences.
- It is the only known Indian species with this spicate inflorescence structure, with its closest allied being found in Africa.
- The species was named *Dicliptera polymorpha* to reflect its diverse morphological traits.
- It thrives on slopes in open grasslands of the northern Western Ghats, an area exposed to extreme climatic conditions such as summer droughts and frequent human-induced fires. Despite these harsh conditions, the species has adapted to survive and bloom twice a year.
- The first flowering phase occurs from post-monsoon (early November) to March or April, while the second flowering phase in May and June is triggered by fires.
- During this second phase, the woody rootstocks produce dwarf flowering shoots, leading to a more abundant but shorter flowering period.
- The species' unique adaptation to fire and its limited habitat range in the Western Ghats highlight the need for careful management of grassland ecosystems.

Source: PIB

## Bio-Derived Foam

### Why in the news?

Researchers from the Indian Institute of Science (IISc) have developed a biodegradable foam that could transform the packaging industry while addressing critical environmental concerns.

### About Bio-Derived Foam:

- Bio-derived foam offers a sustainable alternative to plastic materials used in traditional Fast-Moving Consumer Goods (FMCG) packaging.
- The foam is made from bio-based epoxy resins, non-edible oils approved by the US Food and Drug Administration (FDA) and hardeners derived from tea leaves.
- It offers industries an environmentally responsible alternative to conventional expanded polystyrene (EPS) and polyurethane foam.
- The new foam's unique chemical structure features dynamic covalent bonds that can break and reform under external stimuli. This allows the foams to be mechanically reprocessed or dissolved in eco-friendly solvents without losing strength.
- Unlike conventional packaging materials that persist in landfills for centuries, these bio-foams can disintegrate within three hours when exposed to eco-friendly solvents at 80°C.
- It disintegrates safely in landfills without contaminating groundwater, offering a sustainable alternative to traditional plastic foams.
- Significance: The Indian foam market is currently valued at \$7.9 billion and is expected to reach \$11.1 billion by 2032, according to an analysis report by Research and Markets.
- With less than 1% of the 2.3 million tonnes of plastic foam produced annually being recycled, this innovation addresses a pressing environmental challenge.



Source: The Times of India

## Zebrafish

### Why in the news?

Recently, Chinese astronauts successfully reared four zebrafish in space which was part of the Shenzhou-18 mission.

#### About Zebrafish:

- It is a small (2-3 cm long) freshwater fish found in tropical and subtropical regions.
- The vertebrate takes its name from the horizontal blue stripes running the length of its body.
- **Habitat:** It is native to South Asia's Indo-Gangetic plains, where they are mostly found in the paddy fields and even in stagnant water and streams.



#### Features of the Zebrafish:

- It attracts developmental biologists due to its adequate regeneration capacity of almost all its organs, including the brain, heart, eye, and spinal cord.
- It possesses several advantages over rodent models in the study of vertebrate development and disease.
- These include hundreds of embryos in a single clutch and optical clarity of the developing embryo (have transparent larvae and embryos), which allows live imaging at the organism level.
- They are easily bred in large numbers with a relatively low maintenance cost.
- Approximately 70 percent of zebrafish genes are also present in a similar form in humans.
- Over 80 percent of genes that are known to trigger disease in humans are also present in this fish.

#### Conservation status

- IUCN: Least concerned.

Source: India Today

## Leucism

### Why in the news?

Tamil Nadu Forest Department staff and members of a non-governmental organization recently rescued a rare peacock with white feathers, caused by a genetic condition called leucism.

#### About Leucism:

- It is an abnormal condition of reduced pigmentation affecting various animals (such as birds, mammals, and reptiles) that is marked by overall pale color or patches of reduced coloring.
- It is caused by a genetic mutation which inhibits melanin and other pigments from being deposited in feathers, hair, or skin.
- In birds, leucism affects only the bird's feathers, this means they do not have the normal, classic plumage colors.
  - They may have white patches where the bird should not have any, or their overall plumage may look pale or bleached out.

#### Albinism vs. Leucism:

- Albinism is a rare genetic mutation with a complete absence of (or very little) melanin production.
  - Melanin is a natural pigment in the skin, hair, eyes, and even brain tissue.
  - The type and amount of melanin in animals determine the colour of the skin, hair, and eyes.





- With the lack of melanin production, albinos have white or pinkish coloured skin and red eyes due to the underlying blood vessels showing through from behind the eyes.
- With leucism, there is only a partial loss of melanin production and/or distribution.
  - The animal can have white or patchy coloured skin, hair, and/or feathers. The pigment cells in the eyes, legs, and bills of birds, however, are not affected.

**Source: The Hindu**

## **Tsunami Ready Recognition Programme**

### **Why in the news?**

Recently, twenty-four coastal villages in Odisha were recognised by the Intergovernmental Oceanographic Commission of UNESCO as 'Tsunami Ready'.

### **About Tsunami Ready Recognition Programme:**

- It is an international community-based recognition programme developed by Intergovernmental Oceanographic Commission (IOC) of UNESCO.
- Aim: It aims to build resilient communities through awareness and preparedness strategies that will protect life, livelihoods and property from tsunamis in different regions.
- The main goal of the Programme is to improve coastal community preparedness for tsunamis and to minimize the loss of life, livelihoods and property.
- This is achieved through a collaborative effort to meet a standard level of tsunami preparedness through the fulfillment of a set of established indicators.
- To get this recognition, communities must meet all 12 indicators, which cover Assessment, Preparedness, and Response, and will be recognized as 'Tsunami Ready' by the UNESCO/IOC. The recognition is renewable every four years.
- It is implemented as a voluntary, performance-based community recognition programme that promotes an understanding of the concept of readiness as an active collaboration among national and local warning and emergency management agencies, and government authorities, scientists, community leaders and the public.



### **What is a Tsunami?**

- These are large waves generated by sudden movements of the ocean floor that displace a large volume of water. These are usually associated with earthquakes
- A tsunami is a series of extremely long waves caused by a large and sudden displacement of the ocean, usually the result of an earthquake below or near the ocean floor. This force creates waves that radiate outward in all directions away from their source, sometimes crossing entire ocean basins.

**Source: The Hindu**

## **King Cobra**

### **Why in the news?**

In ground-breaking research, a well-known wildlife biologist from Agumbe has proved that king cobra (*Ophiophagus hannah*), the longest venomous snake in the world, has four different species.

### **About King Cobra:**

- It is the world's largest venomous snake and an active hunter.



- The main feature that distinguishes the king cobra from other cobras is the possession of 11 large scales on the crown of its head.
- It preys almost exclusively on other snakes, prowling in forests, fields, and villages in the daytime as well as at night.
- It was in 1836 that a broad spectrum of king cobra species was named as *Ophiophagus hannah* by Danish naturalist Theodore Edward Cantor.
- The amount of venom that they can deliver in a single bite is enough to kill 10 people or even an elephant.
- The neurotoxin venom of king cobra affects the respiratory centers, causing respiratory arrest and cardiac failure.
- The king cobras are the only snakes in the world to build nests that are 4 ft x 3 ft and the female king cobras are found ferociously guarding them.

**The study identified four species of king cobra:**

- *Ophiophagus kaalinga*: Found in the Western Ghats of southwestern India, this species has fewer than 40 bands on its body.
- *Ophiophagus hannah*: Inhabiting northern and eastern India, the Andaman Islands, eastern Pakistan, Indo-Burma, Indo-China, and Thailand, this species displays 50 to 70 bands.
- *Ophiophagus bungarus*: Found in the Malay Peninsula, Greater Sunda Islands, and parts of southern Philippines, it features more than 70 bands.
- *Ophiophagus salvatana*: Native to Luzon in the northern Philippines, this species lacks bands altogether.

**Conservation status**

- IUCN: Vulnerable
- CITES: Appendix II
- Threats: Their survival is threatened by habitat destruction and exploitation for their skin, food, medicine, and the pet trade.

**Source: The Hindu**

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**Cao Bang crocodile new**

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**Why in the news?**

A new species of crocodile newt, the Cao Bang crocodile newt, has been discovered in Vietnam.

**About Cao Bang crocodile newt:**

- Cao Bang crocodile newt, or *Tylototriton Koliaensis*, is a new species of crocodile newt.
- It was found in Vietnam's mountainous farm.
- It lives in a mountain forest at elevations of 3,300 feet or more where the weather fluctuates from a colder dry season to a warmer rainy season.

**Features of the new species:**

- The Cao Bang crocodile newts are medium-sized and are about 5-inches in length.
- It has stout bodies with rough skin, and its scales are like knobs or warts.
- The heads of the crocodile are large, and their limbs are very long and thin.



- It is completely black in colour with a uniform hue of bright orange on marks of fingertips and toes.
- The bottom part of the crocodile has a dark gray stomach and an orange stripe down to the center of the tail.
- The newts breed during the rainy summer in the slow-flowing streams or temporary pools, and they hide under rocks and cavities during the winter.

#### **What is a crocodile newt?**

- It is a genus of salamanders found primarily in Asia.
- They are called "crocodile newts" because of their rough, textured skin that resembles the hide of a crocodile.
- Most species are dark brown or black with bright orange or red markings on their head, back, and tail.
- They often live near slow-moving streams, ponds, or marshes where they can lay eggs and find food.
- Species Examples: *Tylotriton verrucosus* (Himalayan crocodile newt), *Tylotriton shanjing* (Emperor newt), *Tylotriton kweichowensis* (Kweichow crocodile newt).

**Source: The Times of India**

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## **Climate Change Performance Index**

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### **Why in the news?**

Recently, the Climate Change Performance Index (CCPI 2025) report was released at the annual UN climate conference in Baku.

#### **About Climate Change Performance Index:**

- It is published by think tanks Germanwatch, New Climate Institute, and Climate Action Network International.
- It tracks the progress of the world's largest emitters in terms of emissions, renewables, and climate policy.
- It was first published in 2005.



#### **Highlights of the report:**

- India ranked 10th on a list of over 60 countries assessed for efforts to fight climate change.
- The 63 countries, along with the European Union, assessed in the CCPI are responsible for 90% of global emissions.
- According to CCPI experts, over the past year, India has made considerable progress in renewable energy policy, particularly with large-scale solar power projects and the launch of the Rooftop Solar Scheme.
- Energy efficiency standards have been introduced, but their coverage remains inadequate, the report said, adding, India is also advancing in electric vehicle deployment, especially with two-wheelers.
- The experts said that despite these positive developments, India remains heavily reliant on coal.
- India is among the 10 countries with the largest developed coal reserves and is currently planning to increase its production.
- India and the U.K. are the only two G20 countries among the high performers in the CCPI.
- Denmark ranks at the top (but technically fourth place), followed by the Netherlands and the U.K. The U.K., this year's big climber, benefitted from its coal phase out and the government's pledge to halt new licenses for fossil fuel projects

**Source: The Hindu**

## Raorchestes asakgrensis

### Why in the news?

A new frog species named *Raorchestes asakgrensis* was recently discovered from Meghalaya.

#### About *Raorchestes asakgrensis*:

- It is a new species of frog.  
It was named after the Eman Asakgre Community Reserve in the Garo Hills of Meghalaya, where it was discovered, to honour the local community's support in conservation efforts.

#### Features of the new species:

- Found at an elevation of 174 meters in Eman Asakgre, this small arboreal frog is distinctive for its pointed snout and visible tympanum.
- Males measure about 20.49 mm in snout-vent length, with females slightly larger at 22.8 mm.
- Males call from shrubs at dusk, perched 1.5 meters or higher, with calling activity peaking after the first monsoon rains.

#### What is a Community Reserve?

- Conservation reserves are protected areas which typically act as buffer zones to or connectors and migration corridors between established national parks, wildlife sanctuaries, and reserved and protected forests.
- Such areas are designated as conservation reserves if they are uninhabited and completely owned by the Government of India but used for subsistence by communities and community reserves if part of the lands is privately owned.
- These protected area categories were first introduced in the Wildlife (Protection) Amendment Act of 2002, the amendment to the Wildlife Protection Act of 1972.
- There are 220 existing community reserves in India, covering an area of 1455.16 sq.km.
- 108 of the 220 community reserves are in the northeastern states of Arunachal Pradesh, Manipur, Meghalaya, and Nagaland.
- Maximum number exists in Nagaland (114).



Source: The New Indian Express

## Eastern Imperial Eagle

### Why in the news?

A rare imperial eagle, scientifically known as *Aquila heliaca*, was recently spotted from the Kole fields, Kerala.

#### About Eastern Imperial Eagle:

- It is a large, graceful bird of prey that breeds in southeastern Europe and extensively through West and Central Asia.
- Scientific Name: *Aquila heliaca*
- Like all eagles, the Eastern imperial eagle is a member of the family Accipitridae. Furthermore, its well-feathered legs mark it as a member of the subfamily Aquilinae.





- It tends to live in forests, where it will build a huge, conspicuous nest in an isolated tall tree.
- Most populations are migratory and winter in northeastern Africa, the Middle East, and South and East Asia.
- Habitat: Old forests, and the forests in mountains, hills, and along rivers are all common habitats.

#### **Features of the Eastern Imperial Eagle :**

- It is a large eagle. Adult total length can range from 68 to 90 cm with a typical wingspan of 1.76 to 2.2 m.
- The species displays reverse sexual dimorphism as do most birds of prey, in which males are usually smaller than the females.
- They have a pale golden crown and nape and a grey base that extends to the tail. They also have very apparent white "braces" on their scapulars.
- Like other eagles, they have strong legs and feet. Their feet include long, curved talons that they use to seize, kill, and carry their prey.
- They also have large eyes that are located slightly to the side of the head. These eyes provide them with extremely keen eyesight, allowing them to spot prey from high in the air.

**Source: The Hindu**

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### **Phytoplankton Bloom**

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#### **Why in the news?**

The research found that drought in southern Africa's drylands had caused the strongest phytoplankton bloom in about 27 years, south-east Madagascar.

#### **About Phytoplankton Bloom:**

- Phytoplanktons are microscopic plants, but they play a huge role in the marine food web.
- Like plants on land, phytoplankton perform photosynthesis to convert the sun's rays into energy to support them.
- Phytoplankton population explosion-blooms occur when sunlight and nutrients are abundantly available to the plants.
- When light, nutrients and other conditions, such as temperature, are at the best level for phytoplankton, they can rapidly multiply and flourish. This leads to the development of phytoplankton bloom.
- They grow and reproduce to a point where they are so dense that their presence changes the color of the water in which they live.
- Blooms can be quick events that begin and end within a few days or they may last several weeks.



#### **Ecological significance:**

- Phytoplankton is estimated to produce about 50 percent of Earth's oxygen.
- They have a crucial role in the global carbon cycle.
- They provide an essential food source for organisms like zooplanktons.
- Just like terrestrial plants, they grow more in certain seasons.

**Source: Down to earth**

### Asia-Pacific Tele community (APT)

#### Why in the news?

The Telecom Regulatory Authority of India has hosted the South Asian Telecommunication Regulators' Council (SATRC), organized by the Asia Pacific Tele community (APT), in Delhi recently.

#### About Asia-Pacific Tele community (APT):

- It is an intergovernmental organization established in February 1979 to promote Information and Communication Technology (ICT) development in the Asia-Pacific region.
- It was founded on the joint initiatives of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the International Telecommunication Union (ITU). Currently, the APT has a strength of 38 Members, 4 Associate Members and more than 140 Affiliate Members (private companies and academia whose works are relevant to the ICT field).

#### Functions of the Asia-Pacific Tele community:

- APT fosters the development of telecommunication services and information infrastructure throughout the region.
- It plays a crucial role in coordinating and harmonizing policies, regulations, and technical standards related to ICT.
- APT conducts various preparatory activities for international conferences, including the ITU Plenipotentiary Conference (PP), World Radiocommunication Conferences (WRCs), World Telecommunication Standardization Assemblies (WTSAs), World Summit on the Information Society (WSIS), and World Telecommunication Development Conferences (WTDCs).
- The organization also hosts working groups and forums to address specific issues such as spectrum management, policy, and standardization.
- It also organizes a variety of capacity-building programs related to ICT topics and implements several pilot projects to promote ICT development in the region.
- In addition, APT provides sub-regional platforms to facilitate achieving sub-regional common interests.
- For example, the South Asian Telecommunication Regulators' Council (SATRC), under the umbrella of APT, organizes working groups for policy and regulation, and spectrum to facilitate harmonization among parties concerned.
  - The SATRC meeting is an annual event where heads of telecommunication regulatory bodies from SATRC member countries discuss and coordinate regulatory and other issues related to telecommunication and ICT.
  - SATRC is composed of the heads of the regulatory bodies of nine South Asian countries, namely, Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, and Sri Lanka.
  - Affiliate members from these countries are also taking active participation in SATRC activities.



Source: The Hindu

## Global Tuberculosis (TB) Report 2024

### Why in the news?

The Global TB Report 2024 has acknowledged the tremendous progress India has made in closing the gap of missed TB cases since 2015.

### About Global TB Report:

- It is an annual report published by the World Health Organization (WHO).
- It provides a comprehensive and up-to-date assessment of the TB epidemic and of progress in prevention, diagnosis, and treatment of the disease at global, regional, and country levels.

### Highlights of the 2024 Report:

- It shows 8.2 million people were newly diagnosed with TB in 2023, a figure that represents the highest number of TB cases recorded by the WHO since it began global TB monitoring in 1995.
- It also marks a significant increase from the 7.5 million new TB cases reported in 2022.
- Although the estimated number of 1.25 million TB deaths in 2023 is down from the 1.32 million recorded in 2022 and continues a declining trend from the height of the COVID-19 pandemic, that number still far surpasses the 320,000 COVID deaths officially reported to the WHO last year.
- The data show that 30 mostly low- and middle-income countries (LMICs) bear 87% of the global TB burden, with five countries—India (26%), Indonesia (10%), China (6.8%), the Philippines (6.8%), and Pakistan (6.3%)—combining for 56% of the burden.
- 55 percent of people who developed TB were men, 33 percent were women, and 12 percent were children and young adolescents.
- According to the report, a significant number of new TB cases are driven by five major risk factors: undernutrition, HIV infection, alcohol use disorders, smoking, and diabetes.
- In 2023, India was estimated to have had 27 lakh TB cases, of which 25.1 lakh persons were diagnosed and put on treatment.
- This has buoyed India's treatment coverage to 89 percent in 2023 from 72 percent in 2015, thereby bridging the gap of missing cases.
- It acknowledged a drop in India's TB incidence - from 237 per lakh population in 2015, to 195 per lakh population in 2023, accounting for a 17.7 percent decline.



Source: Economic times

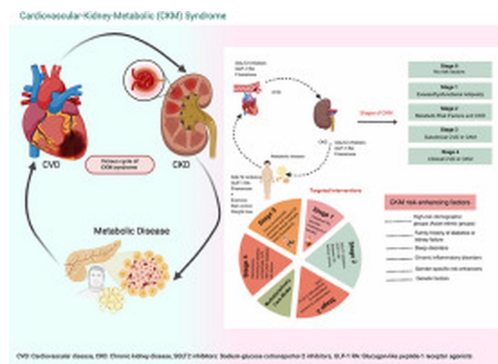
## Cardiovascular Kidney Metabolic Syndrome

### Why in the news?

An unhealthy lifestyle and the influence of globalization are silently shaping a major global health issue called Cardiovascular Kidney Metabolic (CKM) syndrome.

### About Cardiovascular Kidney Metabolic Syndrome:

- It is defined as a health disorder attributable to connections among obesity, diabetes, Chronic Kidney Disease (CKD) and Cardiovascular Disease (CVD),



including heart failure, atrial fibrillation, coronary heart disease, stroke, and peripheral artery disease.

- Metabolic means getting energy from food. Obesity and Type 2 diabetes are metabolic conditions. Each of the four conditions in CKM syndrome can lead to or worsen one another.

#### Cause of Syndrome:

- Extra adipose tissue (body fat) or body fat that's abnormal causes CKM syndrome.
- This type of tissue releases substances that inflame and damage tissues in your heart, kidneys and arteries.
- Inflammation makes insulin less effective. It also encourages plaque and kidney damage to develop.
- Symptoms: Chest pain, Shortness of breath, Syncope (passing out), Swelling in your legs, feet, hands or ankles etc.
- Treatment: At an early stage, you may only need to make some lifestyle changes, like getting more physical activity. If you're at a middle stage, you may need to take medicines to manage blood pressure, cholesterol and blood sugar.

Source: The Hindu

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## Kodo millet

### Why in the news?

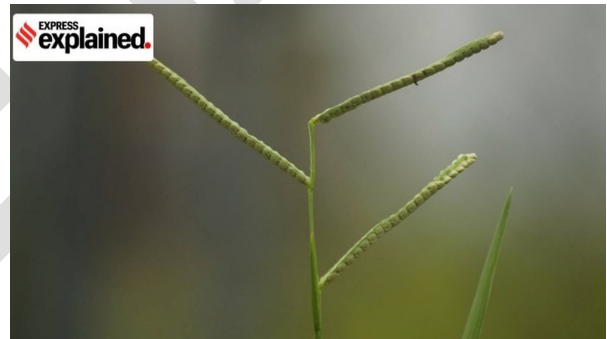
Recently, the Principal Chief Conservator of Forests (Wildlife) said that the deaths of elephants in Bandhavgarh Tiger Reserve could have been caused by “mycotoxins associated with kodo millet”.

### About Kodo millet:

- Kodo millet (*Paspalum scrobiculatum*) is also known as Kodra and Varagu in India.
- It is one of the “hardest crops, drought tolerant with high yield potential and excellent storage properties,” It is rich in vitamins and minerals.
- It is a staple food for many tribal and economically weaker sections in India.

### Required climatic conditions:

- The tropical and subtropical regions are best suited for Kodo millet cultivation.
- It is grown on poor soils, and widely distributed in arid and semi-arid regions.
- The millet is believed to have originated in India and Madhya Pradesh (MP) is one of the largest producers of the crop, according to a 2020 research paper.
- Apart from MP, the millet is cultivated in Gujarat, Karnataka, Chhattisgarh, and parts of Tamil Nadu.
- The crop is grown in India, Pakistan, the Philippines, Indonesia, Vietnam, Thailand, and West Africa.
- According to the research paper, “CPA (Cyclopiazonic acid) is one of the major mycotoxins associated with the kodo millet seeds causing kodo poisoning which was first recognised during the mid-eighties”.
- Kodo poisoning occurs mainly due to the consumption of Kodo grains, when “maturing and harvesting if the grains had encountered with rainfall, resulting in a fungal infection leading to ‘poisoned Kodo’ which is locally known as ‘Matawna Kodoo’ or ‘Matona Kodo’ in northern India.”
- Kodo poisoning mainly affects the nervous and cardiovascular systems and the chief symptoms include “vomiting, giddiness, and unconsciousness, small and rapid pulse, cold extremities, shaking of limbs and tremors.”



Source: Indian Express

## Domestic Systemically Important Banks (D-SIBs)

### Why in the news?

State Bank of India, HDFC Bank and ICICI Bank have again been named as Domestic Systemically Important Banks (D-SIBs) by the Reserve Bank of India.

### About Domestic Systemically Important Banks (D-SIBs):

- It means that the bank is too big to fail.
- According to the RBI, some banks become systemically important due to their size, cross-jurisdictional activities, complexity, and lack of substitutes and interconnection.



- A failure of any of these banks can lead to systemic and significant disruption to essential economic services across the country and can cause an economic panic.
- As a result of their importance, the government is expected to bail out these banks in times of economic distress to prevent widespread harm.
- Additionally, D-SIBs follow a different set of regulations in relation to systemic risks and moral hazard issues.
- Due to this perception, these banks enjoy certain advantages in funding.
- The system of D-SIBs was adopted in the aftermath of the 2008 financial crisis, where the collapse of many systemically important banks across various regions further fueled the financial downturn.

#### **How are D-SIBs determined?**

- Since 2015, the RBI has been releasing the list of all D-SIBs.
- They are classified into five buckets, according to their importance to the national economy.
- In order to be listed as a D-SIB, a bank needs to have assets that exceed 2 percent of the national GDP.
- The banks are then further classified on the level of their importance across the five buckets.
- Right now, there are three D-SIBs in India—SBI, HDFC Bank, and ICICI Bank.
- ICICI Bank and HDFC Bank are in bucket one, while SBI falls in bucket three, with bucket five representing the most important D-SIBs.

#### **What regulations do these banks need to follow?**

- Due to their economic and national importance, the banks need to maintain a higher share of risk-weighted assets as Tier-I equity.
- SBI, since it is placed in bucket three of D-SIBs, has to maintain Additional Common Equity Tier 1 (CET1) at 0.60 percent of its Risk-Weighted Assets (RWAs).
- ICICI and HDFC, on the other hand, have to maintain Additional CET1 at 0.20 percent of their RWA due to being in bucket one of D-SIBs.

**Source: Business standard**

## **Aquaculture**

### **Why in the news?**

The Food and Agriculture Organization (FAO) of the United Nations has offered its technical expertise and knowledge to deal with the impact of climate change on the country's aquaculture and the fishing community engaged with it.

#### **About Aquaculture:**

- It is the propagation and husbandry of aquatic plants, animals, and other organisms for commercial, recreational and scientific purposes.
- It is an approximate aquatic equivalent to agriculture—that is, the rearing of certain marine and freshwater organisms to supplement the natural supply.
- This includes production for supplying other aquaculture operations, for providing food and industrial products, for stocking sport fisheries, for supplying aquatic bait animals, for stocking fee-fishing operations, for providing aquatic organisms for ornamental purposes, and for supplying feedstocks to the pharmaceutical and chemical industries.
- There are two main types of aquacultures: marine and freshwater.



- It is generally practiced in coastal ocean waters, freshwater ponds and rivers, and even on land in tanks.
- It is one of the fastest-growing forms of food production in the world.
- Globally, aquaculture already supplies more than half of all seafood consumed by humans.
- More than 550 aquatic species are farmed in aquaculture.
- The top fish species include carp, catfish, salmon, and tilapia; commonly farmed shellfish include shrimp, oysters, clams, mussels, and scallops.
- Newer to marine farming are various species of seaweed, which total 27% of annual global aquaculture tonnage.
- Major Producers:
  - China is at the top of the global aquaculture production, producing nearly 60% of farmed seafood.
  - Other leaders include Indonesia, India and Vietnam.

**Source: The Hindu**

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## **Global Alliance Against Hunger and Poverty**

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### **Why in the news?**

The G20 Leaders' Summit held in Rio de Janeiro, Brazil was headlined by the official launch of the Global Alliance Against Hunger and Poverty.

### **About Global Alliance Against Hunger and Poverty:**

- It will serve as a platform for connecting countries in need of assistance with public policies targeted towards eradicating hunger and poverty, with partners willing to offer expertise or financial support.
- It consists of 81 countries (including India), 26 international organisations, 9 financial institutions and 31 philanthropic foundations and non-governmental organisations have already joined the Alliance.
- Any member country can access proven best practices from other members and identify potential partners willing to assist in the development of its own national model." Assistance may be in the form of technical expertise or financial support.
- The Alliance has identified an evidence-based policy basket, which comprises more than 50 policy instruments that member countries can avail support for.
- Of particular importance are the six "Sprints 2030", high-impact areas which will see target-oriented initiatives catering to the most vulnerable.
- These include: school meals; cash transfers; smallholder and family farming support programs; socio-economic inclusion programs; integrated maternal and early childhood interventions; and water access solutions.



### **Funding of the Global Alliance Against Hunger and Poverty:**

- The Alliance does not boast an exclusive fund.
- It envisions playing a matchmaking role, connecting countries in need with motivated donors and technical support.
- The \$2-3 million required annually for its operations will come from member countries and institutions such as the Food and Agriculture Organization (FAO), UNICEF, and the World Bank.

**Source: Indian Express**

### Why in the news?

India is all set to host the global conference of the International Cooperative Alliance (ICA) for the first time.

#### Key Points:

- Indian Farmers Fertiliser Cooperative Limited (IFFCO) has taken the initiative to host the ICA General Assembly and Global Cooperative Conference.
- The Global Cooperative Conference in India will also mark the official launch of the 'UN International Year of Cooperatives-2025'.
- The theme of the conference is "Cooperatives Build Prosperity for All".

#### About International Cooperative Alliance (ICA):

- It is a non-profit international association which unites, represents and serves cooperatives worldwide.
- Founded in 1895, it is one of the oldest non-governmental organisations and one of the largest ones measured by the number of people represented with one billion cooperative members on the planet.
- It is the apex body representing cooperatives, which are estimated to be around 3 million worldwide, providing a global voice and forum for knowledge, expertise, and coordinated action for and about cooperatives.
- It is the guardian of the Statement on the Cooperative Identity, which includes a definition, 10 values, and 7 operational principles; it is the minimum common denominator for all cooperatives in all sectors and all regions.
- The ICA's members are international and national cooperative organizations from all sectors of the economy.
- More than 306 organizations from 105 countries are members of the ICA.
- It operates a central office in Brussels, Belgium, and four regional offices for Africa, the Americas, Asia-Pacific and Europe.
- The ICA structure also has sectoral organizations for cooperatives active in agriculture, industry and services, consumer retail, banking, fisheries, health, housing, and insurance.



**International  
Cooperative  
Alliance**

**Source: The Hindu**



### Ningol Chakkouba Festival

#### Why in the news?

Recently, Ningol Chakkouba festival was held with religious fervour and gaiety across the State of Manipur.

#### About Ningol Chakkouba Festival:

- The festival is held every year on the second day of the lunar month of Hiyangei of the Meitei calendar.
- The festival is mainly celebrated by the Meiteis but nowadays many other communities also have started to celebrate it as it emphasises the importance of happiness and the reunion of a family in bringing peace and harmony in a society.
- Ningol means ‘married woman’ and Chakouba means ‘invitation for feast’; so, the festival is the one where the married women are invited to their parent’s home for a feast.
- The main component of the festival is the visit of married sisters to their maternal homes for a grand feast and joyous reunion followed by the giving away the gifts.
- It is customary for the son of the family to extend a formal invitation to his sister for Ningol Chakkouba a week in advance of the gathering. The festival is held today outside Manipur where Manipuris are settled.



#### Key facts about the Meitei Community

- They are the predominant ethnic group of Manipur State.
- **Language:** They speak the Meitei language (officially called Manipuri), one of the 22 official languages of India and the sole official language of Manipur State.

#### Distribution:

- The Meiteis primarily settled in the Imphal Valley region in modern-day Manipur, though a sizable population has settled in the other Indian states of Assam, Tripura, Nagaland, Meghalaya and Mizoram.
- There is also a notable presence of Meitei in the neighbouring countries of Myanmar and Bangladesh.
- **Clans:** They are divided into clans, the members of which do not intermarry.
- **Economy:** Rice cultivation on irrigated fields is the basis of their economy.

Source: News on air

### Reang Tribe

#### Why in the news?

The ethnic Reang community has demanded that Tripura declare a holiday on Hojagiri Day, which celebrates the traditional Hojagiri dance.

#### About Reang Tribe:

- The Reang tribe, who locally call themselves “Bru”, is the second largest tribal community of Tripura after the old Tripuri clan.
- They are the only Particularly Vulnerable Tribal Group (PVTGs) residing in the state of Tripura.
- Apart from Tripura, they are also found in the neighbouring state of Mizoram and a few in Assam.



- According to the 2011 census of India report, the total population of the Reang tribe is about 1,88,080.
- Reangs are said to have come first from Shan State of upper Burma (now Myanmar) in different waves to the Chittagong Hill Tracts and then to the Southern part of Tripura.
- Similarly, another group entered Tripura via Assam and Mizoram during the 18th Century.
- Reangs belong to the Indo-Mongoloid racial stock.
- Their language is known as “Kaubru,” which has a tonal effect on the Kuki language, though broadly it is the Kok-Borok dialect.
- The language belongs to the Tibeto-Burmese linguistic family.
- Ethnically, Reangs are divided into two major clans: Meska and Molsoi.
- They are a well-knit ethnic group having a rigid, well-ordained and well-structured self-governing system.
- Economy: They are primarily an agriculturist tribe. In the past, they mostly used to practise the ‘Huk’ or Jhum cultivation, like most other Tripuri tribes. But now shifted to modern agriculture practice.

#### **Religious Belief of Reang Tribe:**

- At present, most of the Reangs in Tripura follow Hinduism, and most of their deities are akin to gods and goddesses of Hindu faith.
- They have faith in different deities like Buraha, Bonirao, Songragma, Jampira, Lampra, etc.
- The Hojagiri folk dance of the Reang clan has achieved unprecedented acclaim all over the world.

**Source: Indian Express**

## **INTERNATIONAL RELATIONS**

### **ASEAN Defence Ministers’ Meeting-Plus**

#### **Why in the news?**

The Union Defence Minister engaged in a series of high-level discussions with counterparts from the United States of America, Japan and the Philippines during the 11th ASEAN Defence Ministers’ Meeting-Plus (ADMM-Plus) held in Vientiane, Laos.

#### **About ASEAN Defence Ministers’ Meeting-Plus:**

- It is a platform for ASEAN and its eight Dialogue Partners Australia, China, India, Japan, New Zealand, Republic of Korea, Russia and the United States.
- It was established to strengthen security and defence cooperation for peace, stability, and development in the region.
- The Inaugural ADMM-Plus was convened in Hanoi, Vietnam, on 12 October 2010.
- Since 2017, the ADMM-Plus meets annually, to allow enhanced dialogue and cooperation among ASEAN and the Plus Countries in the midst of an increasingly challenging regional security environment.

#### **Objectives of the ASEAN Defence Ministers’ Meeting-Plus:**

- To benefit ASEAN Member States in building capacity to address shared security challenges,



while cognisant of the differing capacities of various ASEAN Member States;

- To promote mutual trust and confidence between defence establishments through greater dialogue and transparency;
- To enhance regional peace and stability through cooperation in defence and security, in view of the transnational security challenges the region faces;
- To contribute to the realisation of an ASEAN Security Community which, as stipulated in the Bali Concord II, embodies ASEAN's aspiration to achieve peace, stability, democracy and prosperity in the region where ASEAN Member States live at peace with one another and with the world at large;
- To facilitate the implementation of the Vientiane Action Programme, which calls for ASEAN to build a peaceful, secure and prosperous ASEAN, and to adopt greater outward-looking external relation strategies with our friends and Dialogue Partners.

**Source: PIB**

## SCIENCE & TECHNOLOGY

### Light Detection and Ranging (LiDAR)

#### Why in the news?

Recently, scientists have detected a lost Mayan city, hidden for centuries in the dense Mexican jungle, using LiDAR.

#### About LiDAR:

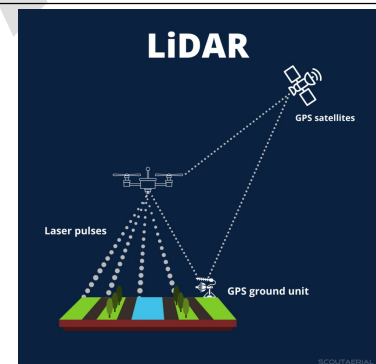
- Light Detection and Ranging (LiDAR) is a remote sensing technology that uses light in the form of a pulsed laser to measure ranges (or variable distances) of a sensor, usually mounted aboard an aircraft, to Earth's surface.
- LiDAR data can be used to create high-resolution 3-D models of ground elevation with a vertical accuracy of up to 10 cm.

#### Working of LiDAR:

- LiDAR instrumentation comprises a laser, a scanner, and a GPS receiver.
- The rapidly firing laser travels to the ground where it hits vegetation, buildings, and various topographic features. This light is reflected or scattered, and recorded by the LiDAR sensor.
- The system calculates the light pulses' two-way travel time to arrive at the distance between the terrain and the sensor.
- It processes this information with Global Positioning System (GPS) and Inertial Measurement System (IMS) data, to create an elevation map of Earth.
- LiDAR data is initially collected as a "point cloud" of all individual points reflected from everything on the surface, including structures and vegetation.
- The specific of how much light energy was returned to the sensor allows further identification of different features, such as vegetation, buildings, etc. For example, tree canopies, however dense they may be, allow some light to pass through and hit the ground.
- Its data can be further refined to produce what scientists call a "bare earth" Digital Elevation Model, in which structures and vegetation are stripped away.

#### Applications of LiDAR:

- It is used to generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.



- This is obviously very useful information for geographers, policymakers, conservationists, and engineers.
- It has also shown potential as a tool of archaeological discovery.

Source: Indian Express

## “First in the World Challenge” Initiative

### Why in the news?

Aimed at encouraging Indian scientists to come up with innovative ideas for finding solutions to difficult health problems, the Indian Council of Medical Research (ICMR) has announced a new initiative called “First in the World Challenge”.

### About “First in the World Challenge” Initiative:

- The “First in the World” Challenge, inspired by the success of Chandrayaan-3, is a major initiative of the Indian Council of Medical Research (ICMR) designed to promote the development of groundbreaking health technologies.
- The scheme aims to foster novel, out-of-the-box, futuristic ideas, new knowledge generation, and discovery/development of breakthrough health technologies (vaccines, drugs/therapeutics, diagnostics, interventions, etc.) that have never been thought of, tested or tried in the world till date.
- This high-risk, high-reward program will provide funding for projects at various stages, from proof-of-concept to prototype and final product development.
- The proposal must have bold research ideas with significant wide-ranging impact and, if successful, should have potential ‘first of its kind’ biomedical and technological innovations for better health outcomes in the global context.
- Proposals aiming for ‘incremental’ knowledge’ or ‘process innovation’ will not be funded through this scheme.
- The proposals can be submitted by an individual or by a team of researchers (either from a single institute or from multiple institutes).
- Every team application must designate one Principal Investigator from the team who will be responsible for technical, administrative, and financial deliverables.
- Selection: A selection committee will be formed by experts of high repute, innovators, policymakers and scientists with an outstanding record of conducting research and innovation in the biomedical domain.
- This initiative will inspire our scientists to come up with innovative ideas for finding solutions to difficult health problems.

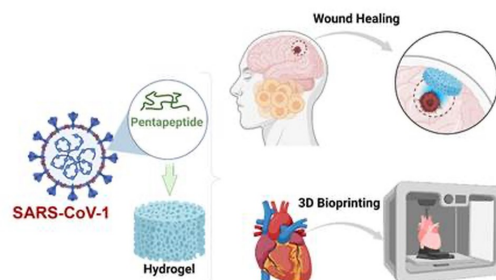


Source: The Hindu

## Hydrogels

### Why in the news?

A new way discovered by a team of researchers at the Department of Chemical Sciences in Bose Institute to create hydrogels using tiny protein fragments of just five amino acids from the SARS-CoV-1 virus, could help improve targeted drug delivery & reduce side effects.





### About Hydrogels:

- It is a three-dimensional network composed of hydrophobic polymers synthesized by crosslinking water-soluble polymers.
- Hydrogels can retain a large quantity of water within their network without disturbing their original structure. This imparts flexibility and swelling properties to the hydrogel structures.
- It is a “smart” material that can change its structure in response to its environment, such as the local temperature, pH, salt or water concentration.

### What is SARS?

- Severe Acute Respiratory Syndrome (SARS) is a viral respiratory disease caused by the virus SARS-CoV-1.
- It is an airborne virus and can spread through small droplets of saliva in a similar way to the cold and influenza.
- It can also be spread indirectly via surfaces that have been touched by someone who is infected with the virus.
- Symptoms of SARS include: Persistent, high fever, Chills, Headache and Body aches.
- Treatment: There's no established treatment specifically for SARS.
- Source : Magic recipes to create hydrogels from viral protein

Source: PIB

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### Orphan drugs

#### Why in the news?

India faces significant challenges in ensuring the development, affordability, and accessibility of orphan drugs, especially compared to other countries like the United States and the European Union.

#### About Orphan drugs:

- These are pharmaceutical agents developed specifically to treat rare (orphan) diseases.
- These diseases, though affecting only a small portion of the population, often lead to life-threatening or chronically debilitating conditions. Definitions of orphan drugs vary depending on the regulatory framework.
- There is no formal prevalence-based definition in India, the NPRD of 2021 outlines a framework for diagnosing and treating rare diseases, with a low prevalence threshold expected.
- Orphan drugs are categorized based on the types of diseases they target and their regulatory status.
- Diseases such as genetic disorders, rare cancers, metabolic disorders, and autoimmune conditions frequently fall under the orphan disease category.
  - Genetic disorders include conditions like cystic fibrosis and Duchenne muscular dystrophy.
  - Rare cancers like neuroblastoma and gliomas also qualify for orphan drug development.
  - Metabolic disorders, such as Gaucher's disease and Fabry disease, and autoimmune diseases, like systemic sclerosis, also benefit from orphan drugs.
- For a drug to receive orphan drug designation, it must meet certain criteria that vary across countries.
  - Typically, the disease in question must have a low prevalence, the condition must lack approved treatments, or the orphan drug must provide significant benefits over current treatment options.
  - Developers of orphan drugs must also provide scientific evidence that the drug has the potential to treat or alleviate the condition.



- This evidence can be presented at any stage of drug development, from preclinical research to late-phase clinical trials.
- Once designated, orphan drugs receive several incentives to encourage their development, including market exclusivity, tax credits for research and development (R&D) expenses and fee waivers for regulatory applications.

**Source: The Hindu**

## IL-35 Protein

### Why in the news?

Scientists at the Institute of Advanced Study in Science and Technology (IASST) in Guwahati, an autonomous institute under the Department of Science and Technology, have discovered a specific protein IL-35 that can aid in new treatments for type I and autoimmune diabetes mellitus.

### About IL-35 Protein:

- It is a specific protein of IL-12 $\alpha$  and IL-27 $\beta$  chains.
- It helps protect against type 1 and autoimmune diabetes.
- It regulates macrophage activation, T-cell proteins and regulatory B cells.
- It inhibited pancreatic beta cell-attacking immune cells. Additionally, IL-35 lowered particular immune cells that produce inflammatory chemicals, reducing pancreatic cell infiltration, a key contributor in type 1 diabetes and autoimmune diabetes mellitus.

### What is autoimmune diabetes mellitus?

- Autoimmune diabetes mellitus or T1DM is an organ-specific autoimmune disease.
- It affects the insulin-producing pancreatic beta cells after an inflammatory process, leading to a chronic deficiency of insulin in genetically susceptible individuals.
- It ultimately results in lifelong dependence on exogenous insulin.
- It is a complex multifactorial disease in which both genetic susceptibility and environmental factors promote the autoimmune responses against beta cells.
- Several environmental risk factors have been suggested as candidate triggers of islet autoimmunity, including certain viruses higher birth weight, infant weight gain, dysbiosis of the gut microbiota and various dietary factors (e.g., vitamin D deficiency, omega-3 fatty acid deficiency, high milk consumption)
- There are no preventive or immunosuppressive therapies that can prevent damage or disease manifestations.



**Source: PIB**

## Arrow-3 Missile Defence System

### Why in the news?

Israel's Defence Ministry has begun coordinating joint preparations with the German Federal Ministry of Defence for the initial deployment of Israel's Arrow-3 missile interception system on German soil in 2025.

### About Arrow-3 Missile Defence System:

- It is an exo-atmospheric anti-ballistic missile defense system for long-range threat engagement.

- The Arrow 3 interceptor is part of a series of the Arrow Weapon System (AWS), the world's first national, operational, and stand-alone Anti Tactical Ballistic Missiles (ATBM) defense system.
- It was jointly developed by Israel Aerospace Industries and the Missile Defence Agency in the US.
- Initially deployed in 2017, Arrow-3 is the top layer of Israel's sophisticated air-defense network, which also includes the Arrow 2, David's Sling, and the Iron Dome active defense systems.
- It is designed to take out ballistic missiles while they are still outside of the atmosphere.



#### **Features of the Arrow-3 Missile Defence System:**

- It uses two-stage solid-fueled interceptors to engage short- and medium-range ballistic missiles and consists of a launcher, radar, and battle management system.
- It is hypersonic, which travels five times the speed of sound.
- It provides a range of 2,400 km and can intercept threats at an altitude of 100
- It has early warning and fire control radar. It provides extended-range acquisition as well as multi-target acquisition and tracking capabilities.

#### **How does it work?**

- It uses hit-to-kill technology to destroy incoming missiles.
- The missile is launched vertically, and then the direction is changed towards the estimated interception point.
- The high-resolution electro-optical sensor acquires the target for the kill vehicle to hit the target and destroy the warhead.

**Source: The Economic times**

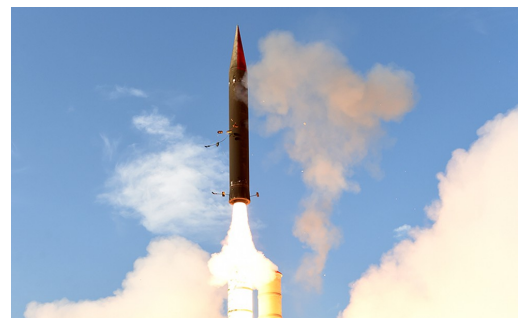
### **Exercise Antariksha Abhyas**

#### **Why in the news?**

The first ever-space exercise 'Antariksha Abhyas – 2024' hosted by the Defence Space Agency begins in New Delhi.

#### **About Exercise Antariksha Abhyas:**

- It is an exercise to war-game the growing threats from and to Space-Based Assets and Services
- It is being conducted by the Defence Space Agency of Headquarters Integrated Defence Staff.
- It is a first of its kind exercise being conducted and is expected to help secure national strategic objectives in space and integrate India's space capability in military operations.
- It aims to provide enhanced understanding of space based assets and services and to gain understanding of operational dependency on space segments between stakeholders.
- In addition, it intends to identify vulnerabilities in conduct of operations in the event of denial or disruptions of space based services.
- It will have participants from the Defence Space Agency and its allied units along with personnel from the Army, Navy and the Air Force. Specialist branches under Headquarters Integrated Defence Staff viz Defence Cyber Agency, Defence Intelligence Agency and Strategic Forces Command would also be active participants in conduct of the exercise.



- Representatives from Indian Space Research Organisation and the Defence Research & Development Organisation will also take part in it.

Source: PIB

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## Comb Jellies

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### Why in the news?

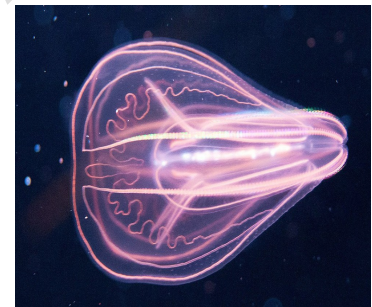
Comb jellies, also known as ctenophore *Mnemiopsis leidyi*, can defy age and revert to younger versions of themselves, according to a study published recently.

### About Comb Jellies:

- They are transparent, gelatinous invertebrates that drift through the waters of our global ocean.
- They are one of the oldest multicellular phyla in the animal kingdom, probably existing already for more than 500 million years.
- There are between 100 and 150 known species of comb jellies, the best known of which are found close to shore.

### Description of Comb Jellies:

- They are colorful, simple invertebrates that are part of the family Ctenophora.
- Each species varies in length, but the average size of a comb jelly is about four inches long.
- Comb jellies get their name from their eight rows of plates made of fused cilia (little hairs) that they use to move through the water, which looks like combs.
- They are the largest animals known to use cilia for locomotion.
- They have two large, trailing tentacles that branch out to create the appearance of a net-like structure of many tentacles.
- These organs serve as sticky fishing lines, which they use to trap and move prey to their bodies.
- These animals have two major cell layers, the external epidermis and internal gastrodermis; in between these cell layers is the mesoderm which is what gives the animals their gelatinous appearance.
- Many species are bioluminescent, meaning they can use proteins in their bodies to create an ethereal blue or green glow in response to stimuli like touch.
- Comb jellies are carnivorous and opportunistic, feeding on whatever passes them by.
- Unlike their close relatives, the jellyfish, comb jellies do not have stinging tentacles and are harmless to humans.



Source: Indian Express

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## NISAR Satellite

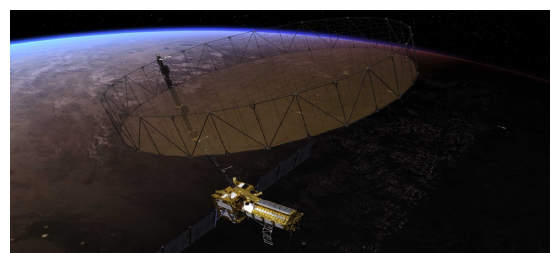
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### Why in the news?

ISRO and NASA are planning to launch a new satellite called NISAR in early 2025 that will help keep track of Earth's surface on land and ice-covered areas.

### About NISAR Satellite:

- It is a Low Earth Orbit (LEO) observatory jointly developed by NASA and ISRO.
- It will be launched by using ISRO's Geosynchronous Satellite Launch Vehicle Mark-II rocket.
- It consists of both L-band and S-band Synthetic





Aperture Radar (SAR) instruments, which makes it a dual-frequency imaging radar satellite.

- NISAR will be the first satellite mission to use two different radar frequencies (L-band and S-band) to measure changes in our planet's surface.
- It is capable of penetrating clouds and can collect data day and night regardless of the weather conditions.
- NASA has provided the L-band radar, GPS, a high-capacity solid-state recorder to store data, and a payload data subsystem. ISRO has provided the S-band radar, the GSLV launch system, and spacecraft.
- It also consists of a large 39-foot stationary antenna reflector made of a gold-plated wire mesh which will be used to focus "the radar signals emitted and received by the upward-facing feed on the instrument structure.
- The NISAR mission will also benefit researchers focused on volcanic activity by helping track surface bulging or sinking caused by magma movement. This data will contribute to understanding volcanic behaviours and determining if such deformations hint at imminent eruptions.

#### **Objectives of the NISAR Satellite:**

- It will measure Earth's changing ecosystems, dynamic surfaces, and ice masses, providing information about biomass, natural hazards, sea level rise, and groundwater.
- NISAR will observe Earth's land and ice-covered surfaces globally with 12-day regularity on ascending and descending passes.
- The satellite will observe movements from earthquakes, ice sheet movements, landslides and volcanic activity, track changes in forests, wetlands and farmland and even check infrastructure stability.

**Source: Down to earth**

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### **Long-Range Hypersonic Missile**

#### **Why in the news?**

Recently, India's Defence Research and Development Organisation (DRDO) successfully flight-tested a long-range hypersonic missile off the coast of Odisha.

#### **About Long-Range Hypersonic Missile:**

- The missile can carry various payloads for ranges greater than 1,500 km for the Armed Forces.
- It has been indigenously developed by laboratories of the Dr APJ Abdul Kalam Missile Complex, Hyderabad, along with various other DRDO labs and industry partners.

#### **What are Hypersonic missiles?**

- The term "Hypersonic" refers to a speed at least five times the speed of sound (also called Mach-5).
- Another key feature of such missiles is manoeuvrability, setting them apart from a ballistic missile that follows a set course or trajectory.
- Hypersonic Cruise Missiles use scramjet engines to sustain hypersonic speeds throughout their flight, flying at lower altitudes and also possessing manoeuvrability.
- The two types of hypersonic weapons systems are Hypersonic Glide Vehicles (HGV) and Hypersonic Cruise Missiles.
- The HGVs are launched from a rocket before gliding to the intended target while HCMs are powered by air-breathing high-speed engines or 'scramjets' after acquiring their target.

#### **Advantages of hypersonic missiles:**

- Hypersonic weapons can enable responsive, long-range strike options against distant, defended or time-critical threats (such as



road-mobile missiles) when other forces are unavailable, denied access or not preferred.

- Conventional hypersonic weapons use only kinetic energy, i.e. energy derived from motion, to destroy unhardened targets or even underground facilities.
- They fly at lower altitudes than ballistic missiles, which means that they may be harder to track at long distances with some surface-based sensors, such as certain radar
- Russia and China are believed to be ahead in developing hypersonic missiles while the US is developing a range of such weapons under an ambitious programme.

**Source: Indian Express**

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## GSAT-N2 (GSAT-20)

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### Why in the news?

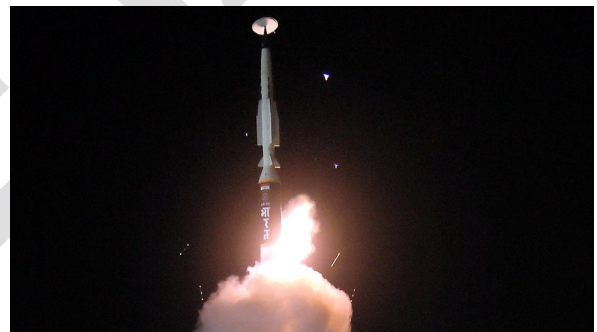
India's GSAT-N2 (GSAT-20) communication satellite was successfully launched by SpaceX's Falcon-9 rocket recently.

### About GSAT-N2 (GSAT-20):

- It is India's advanced communication satellite.
- It was developed by New Space India Limited (NSIL), the commercial arm of ISRO under the Department of Space.
- It was launched onboard SpaceX's Falcon-9 rocket into a geosynchronous transfer orbit.
- It is designed to provide data and internet services to remote regions and enable in-flight Internet connectivity across the Indian subcontinent.
- It will provide significant data transmission capacity, particularly for India's Smart Cities Mission.

### Features Of the satellite:

- It is a high-throughput communication satellite operating in the Ka-band.
- The satellite is equipped with multiple spot beams and is designed to support a large user base, utilizing small user terminals.
- GSAT-N2 features 32 user beams—8 narrow spot beams over the Northeast region and 24 wide spot beams covering the rest of India.
- These beams will be supported by hub stations across mainland India.
- The satellite's Ka-band high-throughput communication payload provides a throughput of around 48 Gbps.
- The GSAT-N2 satellite, with a lift-off mass of 4,700 kg, has a mission life of 14 years.
- This is India's highest throughput satellite and the only one exclusively operating in the highly sought-after Ka-band.



### Why was the Falcon-9 rocket chosen?

- While ISRO's Mark-3 launch vehicle can place up to 4,000 kg into a geostationary transfer orbit, the GSAT-N2's weight of 4,700 kg required a different solution.
- As a result, ISRO turned to SpaceX's launch vehicle for the mission, marking ISRO's first commercial collaboration with SpaceX.

**Source: The Hindu**

### Why in the news?

Recently, three tiny Australian satellites from Curtin University's Binar Space Program burned up in Earth's atmosphere due to solar activity.

### About Binar Space Program:

- It is a satellite research program operating out of Curtin University.
- It aims to advance our understanding of the Solar System and lower the barrier for operating in space.
- The program began operations with its first satellite, Binar-1, in September 2021. This was less than a year into solar cycle 25 when solar activity was relatively low.
- In these conditions, the ten-centimeter cube satellite started at an altitude of 420 km and survived a full 364 days in orbit.
- The program's follow-up mission – Binar-2, 3, and 4 – were three equally sized CubeSats. However, they were expected to last approximately six months owing to the extra surface area from new deployable solar arrays and a forecast increase in solar activity.
- As the Sun kicked into high gear, these three satellites burned up in the atmosphere much sooner than expected.

### What is solar activity?

- It includes phenomena such as sunspots, solar flares and solar wind – the stream of charged particles that flows toward Earth.
- This activity is a product of the Sun's ever-changing magnetic field, and approximately every 11 years, it completely flips. At the midpoint of this cycle, solar activity is at its highest.
- In the last few months, indicators of solar activity were more than one and a half times higher than predictions for this point in the current cycle, labelled solar cycle 25.



### Impacts of the solar activity:

- Higher solar activity means more solar flares and stronger solar wind – resulting in a higher flux of charged particles that can damage or disrupt electrical components on satellites.
- It also means an increase in ionizing radiation, resulting in a higher dose for astronauts and pilots, and potential disruptions to long-distance radio communications.
- But for satellites in low Earth orbit, the most consistent effect of solar activity is that the extra energy gets absorbed into the outer atmosphere, causing it to balloon outward.
- As a result, all satellites less than 1,000 km from Earth experience a significant increase in atmospheric drag (This is a force that disrupts their orbit and causes them to fall towards the planet's surface).
- Notable satellites in this region include the International Space Station and the Starlink constellation. These satellites have thrusters to counteract this effect, but these corrections can be expensive.

### What is Space weather?

- It refers to the environmental effects that originate from outside our atmosphere (mostly the Sun). It affects us on Earth in a variety of noticeable and unnoticeable ways.
- Space weather, and solar activity in particular, also creates additional challenges for satellites and satellite operators.

Source: The Hindu

## Army Tactical Missile System

### Why in the news?

Recently, Russia's Defence Ministry said that Ukraine fired six US-made Army Tactical Missile System (ATACMS) at Russia's Bryansk region.

### About Army Tactical Missile System:

- It is a conventional surface-to-surface artillery weapon system capable of striking targets well beyond the range of existing Army cannons, rockets, and other missiles.
- It is manufactured by the US defense company Lockheed Martin.
- It is also designated M39 by the US Army, and its Department of Defence (DoD) designation is MGM-140.
- The missile first saw use during the 1991 Persian Gulf War.
- This weapon's known operators other than the US are Bahrain, Greece, South Korea, Taiwan, and the United Arab Emirates.

### Features of the Army Tactical Missile System:

- ATACMS are 24/7, all-weather, surface-to-surface, inertially guided ballistic missiles.
- Range: It has a range of about 190 miles (305 km).
- Propulsion: Single-stage, solid propellant.
- These missiles are fired from the High Mobility Artillery Rocket System (HIMARS) and the M270 Multiple Launch Rocket System (MLRS) platforms.
- It has the ability to carry cluster munitions, which destroy a targeted area by releasing hundreds of bomblets instead of a single warhead.



Source: India Today

## Biofloc Technology and Recirculating Aquaculture Systems

### Why in the news?

India's aquaculture sector has increasingly adopted Biofloc Technology (BFT) and Recirculating Aquaculture Systems (RAS).

### About Biofloc Technology and Recirculating Aquaculture Systems:

- Biofloc Technology is a closed tank-based fish farming approach which cleans the water in fish tanks by using beneficial bacteria.
- Heterotrophic bacteria (commonly *Bacillus*, *Pseudomonas*, *Nitrosomonas*, *Nitrobacter*, *Acinetobacter*, and *Alcaligenes*) are used to convert organic waste (such as uneaten feed and fish waste) into microbial biomass, which can then be consumed by the fish or shrimp.

### Advantages of Biofloc Technology:

- This process keeps the water clean without needing to change it often and at the same time reduces the risk of disease as well in the fish. Water stays cleaner, hence farmers do not need to depend on external use of chemicals or antibiotics.
- BFT also saves money on feed, as fish can get extra nutrients from the recycled waste, making it sustainable, cost-effective and environmentally friendly for fish farming.





- The inbuilt aeration system to maintain adequate dissolved oxygen levels to promote microbial activity, along with mechanical filtration reduces chances of infection.
- It is more suitable for small farmers with limited land as it can be established in a small area and even set up for backyard farming. However, it is associated with challenges, including high costs.

#### **What is Recirculating Aquaculture Systems (RAS)?**

- It is also a closed-loop tank-based farming that recycles water after filtration.
- RAS filters and cleans the water in the tank, removing waste and keeping it safe for the fish to live in.
- It has automated set up of culture tanks with both mechanical and biological filtration units, and effectively prevents the entry of pathogens from external sources.
- It requires the minimal interventions to assess the culture, water and disease monitoring, which allows for improved biosecurity. So, fish are less likely to get sick and need for disinfectants or antibiotics is thereby reduced.
- The RAS approach also offers a controlled environment for factors like temperature, oxygen levels and cleanliness, ensuring optimal conditions for healthy fish growth.
- It can be set up indoors or in areas without natural water sources, allowing fish to be raised closer to cities and where demand is high.

**Source: The Hindu**

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### **Nafithromycin**

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#### **Why in the news?**

In a ground breaking step for India's biotechnology sector, the Union Minister formally launched the first indigenous antibiotic "Nafithromycin" for resistant infections.

#### **About Nafithromycin:**

- It is an antibiotic which has been developed with the support of "Biotechnology Industry Research Assistance Council" (BIRAC).
- It has been brought to market under the trade name "Miqnaf".
- It is the country's first indigenously developed antibiotic aimed at tackling Antimicrobial Resistance (AMR).
- This innovation is designed to treat Community-Acquired Bacterial Pneumonia (CABP).
- Nafithromycin's efficacy stands out as it targets both typical and atypical pathogens, offering a potent solution where no new antibiotic in this class has been developed worldwide for over three decades.
- The antibiotic has minimal gastrointestinal side effects, no significant drug interactions, and remains unaffected by food, making it a versatile option for patients.
- It offers 10x Efficacy with Just 3 doses to Combat Drug-Resistant Pneumonia.
- The development of Nafithromycin represents 14 years of dedicated research and an investment of ₹500 crores, with clinical trials spanning the U.S., Europe, and India.

#### **Key facts about Community-Acquired Bacterial Pneumonia:**

- It is one of the most common infectious diseases and an important cause of mortality and morbidity worldwide.



- Typical bacterial pathogens that cause CAP include *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis*.

**Source: PIB**

## Nano Urea

### Why in the news?

State-owned National Fertilizers Limited (NFL) recently announced its entry into nano liquid urea production.

#### About Nano Urea:

- It is a nanotechnology-based revolutionary agri-input that provides nitrogen to plants.
- It is developed and patented by the Indian Farmers Fertiliser Cooperative Limited (IFFCO).
- IFFCO Nano Urea is the only nano fertilizer approved by the Government of India and included in the Fertilizer Control Order (FCO).

#### Features of the Nano Urea:

- Compared to conventional urea prill, Nano Urea has a desirable particle size of about 20-50 nm, and more surface area (10,000 times over 1 mm urea prill), and number of particles (55,000 nitrogen particles over 1 mm urea prill).
- It contains 4.0 % total nitrogen (w/v).

#### Benefits of the Nano Urea :

- It is produced by an energy-efficient, environment-friendly production process with less carbon footprints.
- It is more efficient in terms of nutrient uptake and releases nitrogen more slowly.
- It reduces the amount of nitrogen lost to the atmosphere as greenhouse gases.
- It is expected to improve crop productivity, soil health, and nutritional quality of produce and address the "imbalanced and excessive use" of conventional fertilizer.



**Source: The Economic Times**

## Methanol Poisoning

### Why in the news?

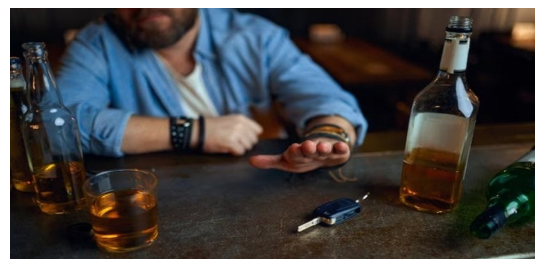
Recently, six tourists tragically lost their lives in Laos due to suspected methanol poisoning which has raised global alarm.

#### About Methanol Poisoning:

- It is a serious and potentially life-threatening condition that arises when methanol, a type of alcohol widely used in industrial applications, is ingested, inhaled, or absorbed through the skin.
- Methanol's toxic effects emerge after the body metabolises it into harmful compounds like formaldehyde and formic acid.
- These byproducts can wreak havoc on the nervous system, optic nerves and other vital organs.

#### How does alcohol cause methanol poisoning?

- It typically occurs when counterfeit or illicit alcohol, often containing methanol, is consumed instead of ethanol, the type of alcohol found in beverages.



- In the body, methanol is metabolised by the liver enzyme alcohol dehydrogenase into formaldehyde and then into formic acid, both of which are toxic.
- Methanol poisoning can indeed be fatal if left untreated. The toxic byproducts lead to complications.
- Metabolic Acidosis: A dangerous drop in blood pH levels.
- Optic Nerve Damage: Potentially resulting in partial or complete blindness.
- Central Nervous System Depression: Causing confusion, coma or death.

#### Prevention of the methanol poisoning:

- **Avoid Non-Drinkable Alcohol:** Never consume industrial alcohol or alcoholic beverages from unverified sources, as they may contain methanol.
- **Regulated Alcohol Sales:** Governments should ensure the production and sale of alcohol adhere to safety standards to eliminate harmful levels of methanol.
- **Public Awareness:** Educate communities about the dangers of consuming illicit or counterfeit alcohol.
- **Methanol Screening:** Regular testing of alcoholic products in unregulated markets can help identify and prevent contaminated beverages from reaching consumers.
- **Seek Prompt Medical Care:** If methanol poisoning is suspected, immediate medical attention can be life-saving.

Source: Indian Express



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**Tap to Know More** 

# Various Security Agencies, Military Exercises

## MAHASAGAR Initiative

### Why in the news?

Recently, the third edition of the high-level virtual interaction MAHASAGAR was conducted by the Indian Navy.

### About MAHASAGAR Initiative:

- Maritime Heads for Active Security and Growth for All in the Region (MAHASAGAR) -- which means vast ocean in Hindi, is the Indian Navy's flagship outreach for high-level virtual interaction among the leaders.
- The initiative, started by the Indian Navy, is conducted bi-annually and has garnered wide acceptance among the participating nations ever since its inception in 2023.
- Participating countries: Indian Ocean Region littorals viz., Bangladesh, Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Sri Lanka and Tanzania.
- The interaction's theme of this edition was 'Training Cooperation to Mitigate Common Maritime Security Challenges in IOR', which highlights the present and necessary imperatives for Training Corporation towards mitigation of common maritime challenges in the Indian Ocean Region.
- During the current edition, the principals candidly dwelled on the imperatives of quality training and opportunities for training collaboration between IOR littorals towards developing requisite capacities and skilled manpower to tackle Common Maritime Security Challenges in the IOR.



Source: PIB

## Exercise Sea Vigil

### Why in the news?

The Indian Navy is set to conduct the fourth edition of the 'Pan-India' Coastal Defence Exercise 'Sea Vigil-24' on 20 & 21 Nov 24.

### About Exercise Sea Vigil:

- It is the National Level Coastal Defence Exercise conceptualized in 2018 to validate various measures that have been instituted towards enhancing maritime security since '26/11'.
- The concept of 'Sea Vigil' is to activate the Coastal Security apparatus across India and assess the overarching Coastal Defence mechanism.
- This fourth edition of Ex Sea Vigil involves 06 Ministries and 21 Organisations/ agencies.
- The exercise will focus on strengthening the security of coastal assets like ports, oil rigs, Single Point Moorings, Cable Landing Points and critical coastal infrastructure including the coastal population.
- This year participation by other Services (Indian Army and Air Force) and the planned deployment of a large number of ships and aircraft have enhanced the tempo of the exercise.
- This comprehensive exercise will engage complete coastal security infrastructure and all maritime stakeholders, including the fishing community and coastal populace, simultaneously.





- One of the aims of the exercise is to raise awareness amongst coastal communities about maritime security, and thus, the involvement of fishing communities, coastal populace, and students from NCC and Bharat Scouts and Guides will add to the fervour of the endeavour.
- Exercise Sea Vigil coordinated by the Indian Navy stands out as a national-level initiative that provides a holistic appraisal of India's maritime defense and security capabilities.
- It is serving as a precursor to the Theatre Level Readiness Operational Exercise (TROPEX), conducted biennially by the Indian Navy.

Source: PIB

## Exercise Sanyukt Vimochan

### Why in the news?

Recently, the Indian Army successfully conducted the Exercise, 'Sanyukt Vimochan 2024' at Ahmedabad and Porbandar on 18-19 November 2024.

#### About Exercise Sanyukt Vimochan:

- It is a multilateral annual joint Humanitarian Assistance and Disaster Relief (HADR) Exercise.
- The exercise, conducted by the Konark Corps of Southern Command of Indian Army, was conducted at Ahmedabad and Porbandar, Gujarat.
- The inaugural event of the exercise at Ahmedabad featured a Tabletop Exercise, focusing on the theme of 'Cyclone in Coastal Region of Gujarat'. Representatives from National Disaster Management Authority (NDMA), Gujarat State Disaster Management Authority (GSDMA), Meteorological Department and FICCI attended the event along with Indian Armed Forces officials.
- It is aimed at addressing gaps in interagency integration and cooperation, ensuring a swift and coordinated response to natural disasters.
- It also witnessed a Multi-Agency Capability Demonstration held at Chowpatty Beach at Porbandar on 19 November 24.
  - The Multi-Agency Capability Demonstration featured various agencies practicing coordinated logistics, rapid response and effective disaster management strategies in a simulated cyclone scenario.
- This event highlighted the collaborative efforts of the Indian Army, Indian Navy, Indian Airforce, Indian Coast Guard, National Disaster Response Force, State Disaster Response Force & other Central & State Agencies in addressing natural disasters.
- 15 Senior officials and representatives from Nine Friendly Foreign Countries from the Gulf Cooperation Council, Indian Ocean Region and Southeast Asia attended the event.
- Significance: It has not only enhanced our national disaster response capabilities but also added valuable contributions to the global dialogue on Humanitarian Assistance and Disaster Relief.

Source: PIB



## Bharat National Cyber Security Exercise (Bharat NCX 2024)

### Why in the news?

The Bharat National Cyber Security Exercise (Bharat NCX 2024) was inaugurated at a high-profile ceremony organized by the National Security Council Secretariat (NSCS) in collaboration with Rashtriya Raksha University (RRU) in New Delhi recently.

### About Bharat NCX 2024:

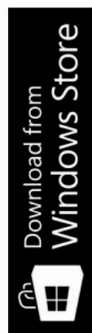
- It is a landmark initiative to fortify India's cybersecurity resilience.
- It is being conducted by the National Security Council Secretariat (NSCS) Government of India in strategic partnership with Rashtriya Raksha University (RRU).
- This flagship event serves as a unifying platform for over 300 participants, representing a diverse spectrum of government agencies, public organizations, and the private sector, all resolutely committed to the safeguarding of critical information infrastructure through training sessions, Live Fire, and Strategic exercises.

### Key Features Of the Bharat NCX 2024:

- The exercise includes immersive training on cyber defense and incident response, live-fire simulations of cyberattacks on IT and OT systems, and collaborative platforms for government and industry stakeholders.
- A Strategic Decision-Making Exercise will bring together senior management from across sectors to simulate decision-making in a national-level cyber crisis, enhancing their ability to respond to high-pressure situations with strategic acumen.
- The CISO's Conclave will feature Chief Information Security Officers from the government, public, and private sectors sharing insights, participating in panel discussions, and exploring the latest trends and government initiatives in cybersecurity.
- On the sidelines, the Bharat Cybersecurity Startup Exhibition Will showcase innovative solutions from Indian startups, emphasizing their role in enhancing the nation's cybersecurity infrastructure.
- The exercise also highlights leadership engagement and capacity building, fostering a unified approach to emerging cyber challenges.



Source: The Times of India



32 Bit



64 Bit

### Maha Kumbh Mela

#### Why in the news?

The Mahakumbh Mela is scheduled to take place in the holy city of Prayagraj from January 13 to February 26.

#### About Maha Kumbh Mela:

- It is a sacred pilgrimage that is celebrated four times over the course of 12 years.
- Kumbh Mela, the world's largest peaceful gathering, draws millions of pilgrims who bathe in sacred rivers seeking to purify themselves from sins and attain spiritual liberation.
- This sacred event rotates between four locations in India-Haridwar, Ujjain, Nashik, and Prayagraj- each situated by a holy river, from the Ganges to the Shipra, the Godavari, and the confluence of the Ganges, Yamuna, and the mythical Sarasvati in Prayagraj.

#### Historical background of Maha Kumbh Mela:

- The roots of the Kumbh Mela stretch back thousands of years, finding early references during the Maurya and Gupta periods (4th century BCE to 6th century CE).
- During the medieval period, the Kumbh Mela received patronage from various royal dynasties, including the Chola and Vijayanagar empires in the south, and the Delhi Sultanate and Mughals in the north.
- Even Mughal emperors such as Akbar are noted to have participated in the celebrations, illustrating a spirit of religious tolerance.
- British administrators observed and documented the festival, intrigued by its massive scale and the diverse congregations it drew. Figures such as British colonial administrator James Prinsep chronicled the Kumbh Mela in the 19th century, detailing its ritualistic practices, the vast congregations, and the socio-religious dynamics at play.
- Post-independence, the Maha Kumbh Mela gained even greater significance, symbolizing national unity and India's rich cultural heritage. Recognized by UNESCO in 2017 as an intangible cultural heritage of humanity, the Kumbh Mela stands as a testament to the survival and evolution of ancient traditions in an era of modernization.



Source: PIB

## Namo Drone Didi Scheme

### Why in the news?

The Government has approved the Central Sector Scheme 'Namo Drone Didi' for providing Drones to the Women Self Help Groups (SHGs) under DAY-NRLM, with an outlay of Rs.1261 Crores.

### About Namo Drone Didi Scheme:

- The scheme aims to provide drones to 14500 selected Women SHGs during the period from 2024-25 to 2025-2026 for providing rental services to farmers for agriculture purposes (application of liquid fertilizers and pesticides for the present).

### Components of the Scheme are:

- The Scheme will be governed at the Central level by the Empowered Committee of the Secretaries of the Department of Agriculture & Farmers' Welfare, Department of Rural Development, Department of Fertilizers, Ministry of Civil Aviation and Ministry of Women and Child Development.
- The Implementation and Monitoring Committee headed by the Additional Secretary, Department of Rural Development and having representation from all other stakeholders will be responsible for effective planning, implementation and monitoring of the scheme.
- **Financial Assistance:** Central Financial Assistance @ 80% of the cost of drone and accessories/ancillary charges up to a maximum of ₹ 8.0 lakhs will be provided to the women SHGs for the purchase of drones as a package.
- The Cluster Level Federations (CLFs) of SHGs/SHGs may raise the balance amount (total cost of procurement minus subsidy) as a loan under the National Agriculture Infra Financing Facility (AIF).
- Interest subvention @ 3% on the AIF loan will be provided to the CLFs/SHGs.
- The CLFs/SHGs shall also have the option to access loans from other sources/programmes/schemes of the Ministry of Rural Development.
- One of the members of the women SHGs will be selected for 15-day training comprising mandatory drone pilot training and additional training for agriculture purposes for nutrient and pesticide application.
- The Lead Fertilizer Companies (LFCs) responsible for the States will be the implementing agencies of the scheme at the State level.
- The drones will be procured by the LFCs through a fair and transparent process and the ownership of drones will be placed with the CLF of SHGs or SHGs.
- The State Departments of Agriculture & State Mission Directors of DAY-NRLM will have a very strong convergence and they will take ownership of the scheme for its successful implementation at the ground level with the help of the State Level Committee.
- The scheme will be monitored through an IT-based Management Information System (MIS) i.e. Drone Portal which will act as end-to-end software for service delivery and monitoring, funds flow and disbursement of funds.
- **Significance:** It is envisaged that the initiatives under the scheme will provide sustainable business and livelihood support to SHGs and they would be able to earn additional income for them.



Source: PIB



### Why in the news?

More than two million applications have been successfully registered under the PM Vishwakarma scheme which was launched in 2023.

#### About PM Vishwakarma Yojana:

- The PM Vishwakarma Yojana was launched by the Prime Minister at the India International Convention and Expo Center in New Delhi on September 17, 2023.
- It is a central sector scheme launched by the Ministry of Micro, Small, and Medium Enterprises.
- It offers services like market linkage support, skill training, and incentives for digital transactions to artisans and craftspeople engaged in specified trades.
- The PM Vishwakarma Yojana will be jointly operated by the Ministry of MSME, Skill Development and Finance.
- This scheme was announced in the Union Budget for 2023-24.
- PM Vishwakarma Yojana is fully funded by the Central Government with an allocation of Rs 13,000 crore for the year 2023-24 to 2027-28.
- This scheme has been started especially for the traditional artisans and craftsmen from the lower level of the society.
- People engaged in 18 types of traditional work have been included under PM Vishwakarma Yojana.
- Under this scheme, financial assistance will be given to traditional artisans and craftsmen.

#### Aim of the scheme:

- To strengthen and nurture the Guru-Shishya parampara, or family-based practice of traditional skills by artisans and craftspeople working with their hands and tools.
- The scheme also aims at improving the quality as well as the reach of the products and services of artisans and craftspeople and to ensure that the Vishwakarmas are integrated with the domestic and global value chains.



#### Eligibility & coverage:

- It is available for rural and urban artisans and craftsmen across India.
- It covers 18 traditional crafts such as Boat Maker; Armourer; Blacksmith; Hammer and Tool Kit Maker; etc.
- Five lakh families will be covered in the first year and 30 lakh families over five years.

#### Key Benefits of the scheme:

- **Enhanced Access to Tooling Facilities:** Improves MSMEs' access to tooling resources, boosting their efficiency and productivity.
- **Industry-Ready Manpower:** Provides training programs to equip participants with skills that meet industry standards.
- **Support for Process and Product Development:** Facilitates development initiatives within relevant sectors to enhance competitiveness.
- **Consultancy and Job Work Services:** Offers tailored consultancy and job work to address the specific needs of various industries.

Source: PIB

## PM-Vidya Laxmi Scheme

### Why in the news?

Recently, the Union Cabinet approved the PM Vidyalaxmi scheme, which seeks to provide financial support to meritorious students in their pursuit of higher education.

### About PM-Vidyalaxmi Scheme:

- It is a Central Sector Scheme.
- The Department of Higher Education will have a unified portal “PM-Vidyalaxmi” on which students will be able to apply for the education loan as well as interest subvention, through a simplified application process to be used by all banks.
- Payment of interest subvention will be made through E-vouchers and Central Bank Digital Currency (CBDC) wallets.

### Features of the scheme:

- Under this scheme any student who gets admission to a quality Higher Education Institution (QHEI) will be eligible to get collateral-free, guarantor-free loans from banks and financial institutions to cover the full amount of tuition fees and other expenses related to the course.
- The scheme will be administered through a simple, transparent and student-friendly system that will be inter-operable and entirely digital.
- It will apply to the top quality higher educational institutions of the nation, as determined by the NIRF rankings - including all HEIs, government and private, that are ranked within the top 100 in NIRF in overall, category-specific and domain-specific rankings; state government HEIs ranked in 101-200 in NIRF and all central government governed institutions.
- This list will be updated every year using the latest NIRF ranking, and to begin with 860 qualifying QHEIs.

### Loan provision:

- For loan amounts up to ₹ 7.5 lakhs, the student will also be eligible for a credit guarantee of 75% of outstanding default. This will give support to banks in making education loans available to students under the scheme.
- In addition to the above, for students having an annual family income of up to ₹ 8 lakhs, and not eligible for benefits under any other government scholarship or interest subvention schemes, 3 percent interest subvention for loans up to ₹ 10 lakhs will also be provided during the moratorium period.
- The interest subvention support will be given to one lakh students every year. Preference will be given to students who are from government institutions and have opted for technical/professional courses.
- An outlay of ₹ 3,600 Crore has been made during 2024-25 to 2030-31.

### Objectives of the Scheme:

- The PM Vidyalaxmi Scheme seeks to:
  - Ensure Financial Inclusion in Education: Enable meritorious students to pursue higher education without financial hurdles.
  - Support Top Educational Institutions: Applicable only to top-quality HEIs as per the National Institutional Ranking Framework (NIRF).



○Provide Transparent and Digital Access: Use a fully digital, transparent, and student-friendly platform for loan processing and management.

Source: PIB

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## One Sun One World One Grid' (OSOWOG) initiative

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### Why in the news?

India is in advanced discussions with Oman, UAE, Saudi Arabia, Maldives, and Singapore to establish cross-border electricity transmission lines as part of the ambitious 'One Sun One World One Grid' (OSOWOG) initiative.

### About One Sun One World One Grid' (OSOWOG) initiative:

- The idea for the OSOWOG initiative was put forth by the Prime Minister of India, at the First Assembly of the International Solar Alliance (ISA) in October 2018.
- It is an initiative to introduce a transnational electricity grid that supplies power worldwide.
- The project is being spearheaded by the governments of India and the UK in partnership with the International Solar Alliance (ISA) and the World Bank Group.
- **Vision:** It aims to connect different regional grids through a common grid that will be used to transfer renewable energy power and, thus, realize the potential of renewable energy sources, especially solar energy.
- The idea is to harness solar and other renewable energy sources from different parts of the world, where the sun is shining at any given moment, and efficiently transmit that power to areas where it is needed.
- OSOWOG aims to provide power to about 140 countries through a common grid that will ensure the transfer of clean and efficient solar power.
- It will bring together a global coalition of national governments, international financial and technical organizations, legislators, power system operators, and knowledge leaders to accelerate the construction of the new infrastructure needed for a world powered by clean energy.



### The OSOWOG initiative is to be carried out in 3 phases:

- In the first phase, the Indian grid would be connected to the grids of the Middle East, South Asia, and South-East Asia to develop a common grid. This grid would then be used to share solar energy as needed, in addition to other renewable energy sources.
- The second phase would connect the functional first phase to the pool of renewable resources in Africa.
- The third phase would look at achieving true global interconnection with the aim of 2,600 GW of interconnection by 2050. The goal is to integrate as many countries as possible to create a single power grid of renewable energy. This can then be accessed by all countries.

Source: The Times of India

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## Kayakalp Scheme

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### Why in the news?

The Rajasthan College Education Commissionerate has directed 20 government colleges to get the front facade of their buildings and entry halls painted orange under the Kayakalp Scheme.



### About Kayakalp Scheme:

- It is an initiative launched by the Ministry of Health and Family Welfare (MoHFW) on May 15, 2015, under Swachh Bharat Abhiyan to promote cleanliness and enhance the quality of healthcare facilities in India.
- The Kayakalp assessment is a three-tier process involving internal, peer, and external assessment. At the beginning of each financial year, a health facility is assessed, scored, and documented using the predefined assessment tool.
- The parameters on which the performance of the facility would be judged are as follows:
  - Hospital/Facility Upkeep
  - Sanitation and Hygiene
  - Waste Management
  - Infection Control
  - Support Services
  - Hygiene Promotion
- To appreciate the hard work and dedication of the healthcare centers, five awards are provided under this scheme:
  - Two best district hospitals
  - Two best community health centers or sub-district hospitals
  - One primary health center in every district
- Cash awards and citations are provided to the winners judged by the set criteria.



### Objectives of the Scheme:

- To promote cleanliness, hygiene, infection control, and environment-friendly practices in Public Health Facilities (PHFs).
- To incentivise and recognise PHFs that show exemplary performance in adhering to standard cleanliness and infection control protocols.
- To inculcate a culture of ongoing assessment and peer review of performance related to hygiene, cleanliness, and sanitation.
- To create and share sustainable practices related to improved cleanliness in PHFs linked to positive health outcomes.

Source: The Hindu

## EV as a Service' Programme

### Why in the news?

Union Minister of Power and Housing & Urban Affairs launched the 'EV as a Service' programme of Convergence Energy Services Limited (CESL) at Major Dhyan Chand National Stadium.

### About 'EV as a Service' Programme:

- It aims to boost e-mobility in government offices; to deploy 5,000 E-Cars in government departments over the next two years.
- It is an initiative of Convergence Energy Services Limited (CESL), a subsidiary of Energy Efficiency Services Limited (EESL).
- By leveraging a flexible procurement model, the programme allows for the deployment of a





variety of E-Car makes/models, enabling Govt. offices to choose E-Cars that best align with their operational requirements.

- It may be noted that CESL has already deployed nearly 2000 nos. of E-Cars across India and is also facilitating the deployment of approx. 17,000 E-Buses.
- It not only supports the government's environmental sustainability vision but also aligns with India's ambitious goal of achieving net zero emissions by 2070.

#### **What is CESL?**

- It is a newly established subsidiary of state-owned Energy Efficiency Services Limited, itself a joint venture of public sector companies under the Ministry of Power, Government of India.
- It builds upon the decentralized solar development experience in under-served rural communities in India, and over time, using battery energy storage, will deliver renewable energy solutions to power agricultural pumps, street lighting, domestic lighting and cooking appliances in villages.
- CESL will also work to enable battery-powered electric mobility and its infrastructure and design business models to increase the uptake of electric vehicles in India.

**Source: PIB**

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### **Know Your Medicine' App**

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#### **Why in the news?**

The Union Minister for Youth Affairs & Sports has launched a nationwide appeal to strengthen the fight against doping in sports, urging athletes, coaches, and the entire sporting community to embrace the National Anti-Doping Agency (NADA) India's 'Know Your Medicine (KYM)' app.

#### **About 'Know Your Medicine' App:**

- It is part of NADA India's broader mission to raise anti-doping awareness and education, equipping athletes with essential information to stay clean.
- The app allows users to easily verify whether a specific medicine or its ingredients contain any substances listed as prohibited by the World Anti-Doping Agency (WADA).
- By offering this quick and seamless verification, the KYM app helps athletes to stay informed and uphold the integrity of sport, fostering a culture of fair and ethical sportsmanship.
- Its unique features of image and audio search, enable users to select their sport category and search specific sport-related information making it convenient for the user to effortlessly access the desired information.



#### **Key facts about the National Anti-Doping Agency:**

- It was established by the Government of India, with the objective of acting as the independent Anti-Doping Organization for India having a vision of dope-free sports.
- It was set up as a registered society under the Societies Registration Act of 1860 in November 2005.

#### **The primary functions:**

- To implement the Anti-Doping Code to achieve compliance by all sports organizations in the Country.
- To coordinate a dope testing program through all participating stakeholders.
- To promote anti-doping research and education to inculcate the value of dope-free sports.
- To adopt best practice standards and quality systems to enable effective implementation and continual improvement of the program.
- Nodal Ministry: Ministry of Youth Affairs & Sports

**Source: PIB**

## SVASTIK Initiative

### Why in the news?

Recently, the director of CSIR-National Institute of Science Communication and Policy Research (NIScPR) provided an overview of the SVASTIK initiative at the International Conference on Communication and Dissemination of Traditional Knowledge (CDTK-2024).

#### About SVASTIK Initiative:

- The Scientifically Validated Traditional Knowledge (SVASTIK) is a national initiative which is coordinated by CSIR-NIScPR.
- SVASTIK aims to preserve and perpetuate the practice of the appropriate tradition, instill the scientific temperament of verifying tradition scientifically, and boost public faith in our traditional knowledge and practices.
- Various research organizations, higher education institutions, experts and NGOs have joined hands with SVASTIK to document and disseminate content on scientifically validated Indian traditional knowledge.
- The initiative was launched to communicate scientifically validated traditional knowledge of India to society.
- The NIScPR has disseminated socially engaging SVASTIK stories in 17 Indian languages via social media.
- Moreover, our two SVASTIK publications provide authenticated stories on traditional knowledge, inspiring young students to explore science.

#### What is CSIR?

- It is India's leading publicly funded R&D organization that promotes advanced knowledge in natural sciences and engineering and translates it for the benefit of the people.
- It is a registered Society under the Societies Registration Act, 1860.
- It has a dynamic network of 37 national laboratories, 39 outreach centers, 1 Innovation Complex, and three units with a pan-India presence.



#### Organization Structure

- President: Prime Minister of India (Ex-officio)
- Vice President: Union Minister of Science and Technology (Ex-officio)
- Governing Body: The Director-General is the head of the governing body.
- The other ex-officio member is the finance secretary (expenditures).
- Other members' terms are three years.
- Headquarter: New Delhi

Source: PIB

## MATES Scheme

### Why in the news?

Australia has come up with a new scheme called MATES that allows talented young people from India to work in the country for some time.

#### About MATES Scheme:

- Mobility Arrangement for Talented Early-professionals Scheme (MATES) gives Indian university graduates and early career professionals a chance to work in Australia for two years.

- Australia and India entered into a Migration and Mobility Partnership Arrangement (MMPA).
- The MMPA is a bilateral framework that supports and promotes two-way migration and mobility between the two countries while addressing issues pertaining to illegal and irregular migration. MATES has been established under the MMPA.
- This scheme will open for professionals from December this year.
- MATES participants will be able to live and work in Australia for up to 2 years.
- It will commence as a pilot programme with 3,000 places for primary applicants per programme per year.
- Participants will be able to apply to bring dependents (spouses and dependent children). Dependents will have work rights in Australia, and will not count towards the annual cap.
- Visa holders will have 12 months to make their first entry into Australia, and may stay in Australia for 24 months from the date of first entry. The visa will allow multiple entries to Australia.



#### **Eligibility of the Scheme:**

- It is open to Indian nationals who are aged 30 or younger at the time of application;
- Have not previously participated in MATES;
- Have proficient English language skills (overall IELTS or equivalent score of at least 6, with a minimum score of 5 for each of the four modules);
- Have graduated within 2 years from an eligible educational institution at the time of application;
- Hold a qualification (Bachelor's degree or higher) in one of the following: renewable energy, mining, engineering, Information Communications Technology (ICT), Artificial Intelligence (AI), Financial Technology (FinTech) and Agricultural Technology (AgriTech).
- Graduates from the top 100 universities of India as per the National Institutional Ranking Framework (NIRF) ranking 2024 will be eligible for this scheme.

**Source: Indian Express**

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### **Partnerships for Accelerated Innovation and Research (PAIR) Initiative**

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#### **Why in the news?**

The Centre recently launched an initiative called Partnerships for Accelerated Innovation and Research (PAIR) to support research in universities, especially central and state public universities.

#### **About Partnerships for Accelerated Innovation and Research (PAIR) Initiative:**

- It is an initiative of the Anusandhan National Research Foundation (ANRF).
- While being aligned with the objectives set by the National Education Policy (NEP) 2020, the PAIR programme will cultivate research excellence in central and state public universities by fostering collaborations with top-tier institutions via a mentorship-driven hub and spoke model.
  - The hubs will guide emerging institutions (spokes) in research activities, and provide access to harness their resources and expertise, thus bridging the gap between



institutions and nurturing a robust research ecosystem in India.

○In the first phase, the Hub institutions would include the top 25 National Institutional Ranking Framework (NIRF) overall ranking as well as Institutions of National Importance within the top 50 NIRF overall ranking.

○The spoken institutions will include Central and State Public Universities and select NITs and IITs.

- Eligibility conditions would be expanded to include other universities and institutions in the subsequent phases.
  - Each PAIR network would consist of one hub and up to seven spoke institutions.
  - Only one proposal per hub institution is allowed, with a mandatory involvement of multi-departmental faculty teams from spoke institutions.
  - Regional diversity among participants will also be ensured.
- The programme would help stimulate innovation in emerging institutions by leveraging mentorship from high-ranking institutions.

#### **Objectives of the initiative:**

- Stimulate scientific innovation in institutions with limited research in a mentorship mode by leveraging the knowledge and expertise of top-ranking institutions.
- Support internationally competitive research with substantial impact and outcome.
- Foster successful and productive collaborative networks between diverse institutions.
- Propel the advancement of institutions by (i) upscaling and building advanced research infrastructure and capabilities, (ii) enhancing the quality of research, and (iii) facilitating the infusion of best practices and research culture.

#### **Key Facts about Anusandhan National Research Foundation (ANRF):**

- It has been established with the ANRF 2023 Act.
- The ANRF aims to seed, grow, and promote research and development (R&D) and foster a culture of research and innovation throughout India's universities, colleges, research institutions, and R&D laboratories.
- It will act as an apex body to provide high-level strategic direction of scientific research in the country as per recommendations of the National Education Policy (NEP).
- With the establishment of ANRF, the Science and Engineering Research Board (SERB), established by an act of Parliament in 2008, has been subsumed into ANRF.
- It will forge collaborations among the industry, academia, and government departments and research institutions and create an interface mechanism for the participation and contribution of industries and state governments in addition to the scientific and line ministries

**Source: New India Express**

### **AI-enabled e-Tarang System**

#### **Why in the news?**

Recently, the Ministry of Defence launched the AI-enabled e-Tarang System.

#### **About AI-enabled e-Tarang System:**

- It is a unique software, developed in collaboration with Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-N).
- It will improve planning for the interference-free operation of defence





equipment during both wartime and peacetime.

- It will enable automated, efficient planning and management of Defence Spectrum, as well as support the development of newer technologies in higher frequency bands.
- It is set to support rapid decision-making, thereby allowing seamless integration of newer technologies critical for modern defence applications.

#### **Key facts about the BISAG-N:**

- It is an Autonomous Scientific Society of the Ministry of Electronics & Information Technology (MeitY), Government of India.
- It undertakes technology development and management, research and development, facilitation of National and international cooperation, capacity building, and support of technology transfer and entrepreneurship development in geospatial technology.
- The Organisation has three main domain areas: Satellite Communication, Geo-informatics and Geo-spatial technology.

**Source: PIB**

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## **One Day One Genome Initiative**

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### **Why in the news?**

The Department of Biotechnology (DBT) and Biotechnology Research and Innovation Council (BRIC) introduced the 'One Day One Genome' initiative to showcase the enormous microbial potential of India.

#### **About One Day One Genome Initiative:**

- It will highlight the unique bacterial species found in our country and emphasize their critical roles in environment, agriculture and human health.
- This initiative is coordinated by Biotechnology Research and Innovation Council-National Institute of Biomedical Genomics (BRIC-NIBMG) an institute of the Department of Biotechnology.
- This initiative aims to release a fully annotated bacteriological genome isolated in the country freely available to the public.
- This will be complemented with a detailed graphical summary, infographics and genome assembly/annotation details.
- These documents will thus give an idea about the scientific and industrial use of these microbes.
- Consequently, microbial genomics data will become more accessible to the general public, scientific researchers and thereby stimulate discussions; innovations directly benefit the entire community and ecosystem.

#### **Role of microorganisms:**

- These are crucial for our ecosystem. They play an important role in all biogeochemical cycles, soil formation, mineral purification, degradation of organic wastes and toxic pollutants along with methane production.
- Cumulatively they help to maintain the homeostasis in our planet.
- In agriculture, they help in nutrient cycling, nitrogen fixation, maintaining soil fertility, controlling pests and weeds and stress responses.
- These are symbiotically associated with plants and help them in nutrient and water uptake.
- There are many more microbial cells than the number of human cells in a human body. They are essential for our digestion, immunity and even mental health.
- All infectious diseases are mainly caused by pathogenic microorganisms. On the other hand, non-pathogenic



microorganisms are indispensable for our defense against infectious diseases.

Source: PIB

## Bhu-Neer Portal

### Why in the news?

Recently, the Hon'ble Minister of Jal Shakti, digitally launched the newly developed “Bhu-Neer” portal during the concluding ceremony of India Water Week 2024.

#### About Bhu-Neer Portal:

- It is an advanced portal developed by Central Ground Water Authority (CGWA), under the Ministry of Jal Shakti, in collaboration with the National Informatics Centre (NIC).
- It is for improved groundwater regulation across the country.

#### Features of the Bhu- Neer Portal:

- The portal will serve as a one-stop platform for managing and regulating groundwater resources, aimed at ensuring transparency, efficiency, and sustainability in groundwater usage.
- It is designed to provide comprehensive details regarding the legal framework governing groundwater extraction, regulations at the state and national levels.
- Its centralized database will allow users to access critical information on groundwater compliance, policies, and sustainable practices.
- The portal is developed with several user-friendly features to offer streamlined process flow to the project proponents seeking groundwater withdrawal permits.
- Having a simplified yet informative interface, and features like PAN based single Id system, NOC with QR code etc., “Bhu-Neer” marks a significant improvement over its previous version NOCAP.
- The portal is another step towards promoting Ease of Doing Business by making ground water regulation a seamless and faceless exercise.
- The portal is now live for public use and all project proponents can visit the portal for ground water withdrawal related queries, clarifications, tracking application status, payment of statutory charges.



Source: PIB

## CBSE Merit Scholarship Scheme for Single Girl Child

### Why in the news?

In an official notification, the Central Board of Secondary Education (CBSE) has invited online applications for the single girl child merit scholarship scheme.

#### About CBSE Merit Scholarship Scheme for Single Girl Child:

- It aims to provide scholarships to meritorious female students who are the only children of their parents and have passed the CBSE Class X



examination with 60% or more marks and are continuing their further school education in Class XI and Class XII.

- The scheme is aimed at recognizing the efforts of parents in promoting education among girls and to providing encouragement to meritorious students.
- It provides financial aid every month to the selected students, so they can continue their higher education.

#### Eligibility Criteria of the Scheme:

- The applicant should be the single girl child of her parents and be an Indian national.
- To be eligible for the scholarship scheme, all single girl students must have 60 percent or more marks in the CBSE Class 10 Examination.
- They should be studying Class 11 and 12 in CBSE-affiliated schools with tuition fees not exceeding Rs 1,500 per month.
- NRI applicants of the Board are also eligible for the award. The tuition fee for the NRIs should be a maximum of Rs. 6,000/- per month.
- Students with gross parental/family income up to Rs. 8 lakh per annum are eligible for scholarships under the scheme.

#### Scholarship amount of the Scheme:

- Students who are selected for the scholarship will receive an amount of ₹500/- per month.
- The amount is payable for a maximum period of two years. Payment will be made through ECS/NEFT.
- Renewal options: Existing scholarship holders can renew their scholarship for Class XII if they secured 50% or more marks in their Class XI exams.

Source: The Hindustan Times

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- ▶▶▶ प्रारम्भिक तथा मुख्य परीक्षा की सम्पूर्ण तैयारी।
- ▶▶▶ प्रत्येक कक्षा के साथ संशय निवारण के लिए विशेष व्यवस्था।
- ▶▶▶ प्रिलिम्स परीक्षा के लिए ऑफलाइन तथा ऑनलाइन टेस्ट सीरीज।
- ▶▶▶ पूर्व-परीक्षाओं में पूछे जा चुके प्रश्नों का अभ्यास एवं चर्चा।
- ▶▶▶ निबंध तथा उत्तर-लेखन शैली विकसित कराने पर विशेष बल।
- ▶▶▶ प्रदर्शन का निरंतर मूल्यांकन और फीडबैक।
- ▶▶▶ प्रत्येक दिन करेंट अफेयर्स तथा मासिक करेंट अफेयर्स टेस्ट।
- ▶▶▶ पाठ्य-सामग्री तथा प्रिन्टेड नोट्स।
- ▶▶▶ साक्षात्कार (Interview) की सम्पूर्ण तैयारी।
- ▶▶▶ अंग्रेजी भाषा और व्यक्तित्व विकास पर विशेष बल।
- ▶▶▶ चयनित छात्र-छात्राओं द्वारा मार्गदर्शन तथा संवाद।
- ▶▶▶ क्वालीफाइंग पेपर (हिन्दी तथा अंग्रेजी) की तैयारी।
- ▶▶▶ ऑफलाइन तथा ऑनलाइन कक्षाएं।
- ▶▶▶ पुस्तकालय की सुविधा।

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### Ralengnao Bob Khathing

#### Why in the news?

Recently, the Defence Minister inaugurated the Major Ralengnao 'Bob' Khathing Museum of Valour at Tawang in Arunachal Pradesh.

#### About Ralengnao Bob Khathing:

- Ranenglao 'Bob' Khathing was born on February 28, 1912, in Manipur's Ukhrul district. He was a Tangkhul Naga.
- During World War II he became the first Manipuri to get the King's Commission.

#### Bob Khathing's Army service

○ He was given the coveted award of Member of British Empire (MBE) for his role in galvanizing Naga support against the Japanese in Burma and India and also the Military Cross (MC) for his acts of bravery above and beyond the call of duty.

○ Bob was commissioned into the 9/11 Hyderabad Regiment (now Kumaon Regiment). In 1942, he was transferred to the Assam Regiment in Shillong.

○ During the Second World War, he was part of a guerrilla outfit called Victor Force, raised by the British to combat the Japanese on the Burma-India road.

- He was appointed as advisor to a force known as SANCOL, comprising 153 Gurkha Parachute Battalion which was formed in June 1944 under the command of Major John Saunders, to this force.
- He led the expedition to peacefully integrate Tawang into India.
- He was also instrumental in establishing essential military and security frameworks, such as the Sashastra Seema Bal, Nagaland Armed Police, and the Naga Regiment.
- He was the first person of tribal origin to serve as an ambassador for India in then Burma, now Myanmar.



Source: Indian Express

### Bidar Fort

#### Why in the news?

Recently, the Waqf Board identified 17 monuments inside the historic Bidar Fort in Karnataka as its property.

#### About Bidar Fort:

- It is situated in Bidar City on the northern plateau of Karnataka, India.
- The history of Bidar Fort dates back over 500 years, starting with the reign of the Western Chalukya dynasty.





- Sultan Ahmed Shah Wali of the Bahmani dynasty made Bidar his capital in 1430 and renovated it as an impressive citadel.

#### **Architecture of the fort:**

- It had been built of trap rock. Stone and mortar were used to build the fort walls.
- The entrance gate has a lofty dome, the interior of which had been painted in bright colours.

#### **Bidar Fort includes:**

- Islamic and Persian architecture,
- Seven main entrances,
- 37 bastions (Balcony structures extending from the fort) of octagonal shape with metal-shielded cannons,
- Mosques and mahals,
- Thirty-plus Islamic monuments.

#### **About Bahmani Kingdom:**

- This Kingdom rose to power after the Turkish Governor Ala-ud-din Hassan Bahman Shan established an independent empire by revolting against the Sultan of Delhi Sultanate, Muhammad Bin Tughlaq in 1347.
- Bahmani Kingdom was the first independent Islamic kingdom in South India that rose to power.
- It was established in present-day Karnataka, Maharashtra, and Andhra Pradesh.
- They set up the capital in Ahsanabad (Gulbarga) between 1347 and 1425 and later moved to Bidar.
- There were a total of fourteen sultans ruling over this kingdom. Among them, Alauddin Bahman Shah, Muhammad Shah I and Firoz Shah were important.
- This kingdom reached its peak under the guidance of Mahmud Gawan, who served with great distinction as Prime Minister of three Bahmani Sultans for about twenty-three years from 1458 to 1481 AD.
- Mahmud Gawan extended the empire by reconquering Goa, which was under the Vijayanagar Empire at the time.
- Around 1518, Krishnadeva Raya of the Vijayanagar Empire defeated the last ruler of the Bahmani Empire.

**Source: Hindustan Times**

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## **QS World University Rankings: Asia 2025**

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### **Why in the news?**

India with a total of 163 universities ranked is the most represented country in the recently released 16th edition of the World University Rankings: Asia by Quacquarelli Symonds.

#### **About QS World University Rankings: Asia 2025:**

- It has been published annually since 2009 by Quacquarelli Symonds, which highlights the top universities in Asia each year.
- The methodology used to create the ranking is similar to that used for the QS World University Rankings, but with some additional indicators and adapted weightings.
- The 11 indicators used to compile the QS Asia University Rankings are:
  - academic reputation (30%),
  - Employer reputation (20%),
  - Faculty/student ratio (10%),
  - International research network (10%), Citations per



paper (10%) and papers per faculty (5%), Staff with a PhD (5%), Proportion of inbound exchange students (2.5%) and proportion of outbound exchange students (2.5%)

### Highlights of QS World University Rankings:

- This ranking assesses 984 institutions covering 25 countries in Eastern, Southern, South-Eastern and Central Asia.
- Peking University retains the top spot, The University of Hong Kong the second, with the National University of Singapore confirmed in third.
- India boasts two institutions within the top 50 and seven in the top 100 of the QS Asia Rankings 2025, with the Indian Institute of Technology Delhi (IITD) leading at 44th place.
- The University of Petroleum and Energy Studies (UPES) achieved the most significant improvement among Indian institutions, climbing 70 spots to 148th.

Source: PIB

## Snakebite Envenoming

### Why in the news?

Recently, the Tamil Nadu government has officially declared snakebite envenomation as a notifiable disease under the Tamil Nadu Public Health Act, 1939.

### About Snakebite Envenoming:

- It is a life-threatening medical condition caused by venomous snake bites.
- It is a major health concern in rural and snake-endemic regions.
- It poses a risk to vulnerable populations, including agricultural workers, children, and those living in tropical and subtropical areas.
- Snake antivenoms are effective treatments to prevent or reverse most of the harmful effects of snakebite envenoming and are included in the WHO list of essential medicines.
- The World Health Organization (WHO) has recognised snakebite as a global public health issue and launched a strategy to reduce snakebite-induced deaths and disabilities worldwide.



### India's Action plan

- The Ministry of Health and Family Welfare earlier this year published the National Action Plan for Prevention and Control of Snakebite Envenoming.
- The plan aims to halve snakebite deaths by 2030 through a 'One Health' approach, integrating human, animal, and environmental health interventions.

### Advantages of notifiable disease:

- By making snakebite a notifiable disease, the Tamil Nadu government aims to improve the collection of vital data, strengthen clinical infrastructure, and ensure the efficient distribution of anti-snake venom.
- This move is expected to lead to better prevention strategies, reduce mortality rates, and enhance treatment facilities across the state.
- Under the new directive, both government and private hospitals are now required to report cases of snakebites and related fatalities to the government.
- This mandatory reporting system will be integrated with the State's Integrated Health Information Platform under the Integrated Disease Surveillance Program.

Source: The Hindu

## Gotti Koya Tribe

### Why in the news?

Recently, the National Commission for Scheduled Tribes has asked the Union Home Ministry and Chhattisgarh, Maharashtra, Andhra Pradesh and Odisha to submit a detailed report on the status of the Gotti Koya tribals.



### About Gotti Koya Tribe:

- They are one of the few multi-racial and multi-lingual tribal communities in India.
- The Koya population is concentrated in Telangana, Andhra Pradesh, Chhattisgarh and Odisha.
- Language: They speak Koya, which is a Dravidian language. It is closely related to Gondi and has been strongly influenced by Telugu.

### Occupation of the tribe:

- They practice Podu form of shifting cultivation, as practiced by various tribal groups in forest areas, has for long been an economic survival versus environmental sustenance issue.
- They earn a living through animal husbandry and minor forest produce.
- **Festival:** The most important fair celebrated by Koyas is the Sammakka Saralamma Jatara Once in two years on the full moon day of the Magha Masam (January or February) at Medaram village in Mulug taluk of Warangal district.
- They held ST status in Chattisgarh but they were not granted ST status in their migrated states such as Telangana.

### Society and Culture of the tribe:

- All Koya belong to one of five subdivisions called gotrams. Every Koya is born into a clan, and he cannot leave it.
- The Koyas have a patrilineal and patrilocal family. The family is called "Kutum". The nuclear family is the predominant type.
- Monogamy is prevalent among the Koya

Source: The Hindu

## World Intellectual Property Indicators

### Why in the news?

The World Intellectual Property Organization (WIPO) has published the World Intellectual Property Indicators (WIPI) 2024, underscoring global trends in intellectual property (IP) filings.

### About World Intellectual Property Indicators:

- The report reveals significant growth in patent, trademark, and industrial design applications across top economies.

### Highlights of the report:

- India has secured a spot in the global top 10 for all three major Intellectual Property (IP) rights—patents, trademarks, and industrial designs.
- India recorded the fastest growth in patent (+15.7%) applications in 2023 among the top 20 origins, marking the fifth consecutive year of double-digit growth.
- India ranks sixth globally for patents with 64,480 applications, with resident filings accounting for over



half of all submissions (55.2%)—a first for the country.

- The report indicates a steady rise (36.4%) in India's industrial design applications, which aligns with increasing emphasis on product design, manufacturing and creative industries within India.
- The top three sectors—Textiles and Accessories, Tools and Machines, and Health and Cosmetics—made up almost half of all design filings.
- Between 2018 and 2023, patent and industrial design applications more than doubled.
- India's patent-to-GDP ratio also saw significant growth, rising from 144 to 381 in the past decade, indicating that IP activity is scaling alongside economic expansion.
- India ranked fourth globally in trademark filings, with a 6.1% increase in 2023. Nearly 90% of these filings were by residents, with key sectors including Health (21.9%), Agriculture (15.3%), and Clothing (12.8%) leading the way.
- India's trademark office holds the second-largest number of active registrations worldwide, with over 3.2 million trademarks in force, reflecting the country's strong position in global brand protection.
- Key findings show a record of 3.55 million patent applications filed worldwide in 2023, up 2.7% from 2022 with notable contributions from leading economies in Asia. This increase was largely driven by residents in China, the United States, Japan, South Korea, and India.

**Source: PIB**

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## **Amorphophallus Titanum**

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### **Why in the news?**

People in Geelong city have beelined to witness an unusual event: the blooming of the Amorphophallus Titanum (called Titan Arum in short).

### **About Amorphophallus Titanum:**

- Amorphophallus Titanum (called Titan Arum in short) blooms once in a decade and is one of the largest in the world — growing over 10 ft in height.
- It is also called Corpse Flower.
- It was first described by Italian botanist Odoardo Beccari in 1878.

### **Features of the Amorphophallus Titanum:**

- It blooms approximately once every decade, with each flowering lasting merely 24 to 48 hours.
- It mimics the stench of rotting flesh to attract its pollinators — carnivorous bees and flies that feed on corpses.
- The dark, red interior of the spathe that is exposed when it is fully open looks like the surface of a piece of uncooked meat, and the spadix in the center even warms up to provide the perfect simulation of a warm, abandoned body.
- It looks peculiar, with a tall, crooked, pale yellowish phallic structure — the 'spadix' — rising from the center of what looks like an upturned meat skirt — its dark red, thick, waxy 'spathe', which is the spiral, petal-like structure that holds within it the inflorescence.
- Habitat: It blossoms on limestone hills in the rainforests of western Sumatra, Indonesia, where it is called bunga bangkai (bunga means flower and bangkai means corpse).

### **Conservation status**

- IUCN: Endangered

**Source: Down to earth**





## Maori Tribe

### Why in the news?

New Zealand's Parliament was briefly suspended following a protest by the Indigenous Māori group's legislators, who staged a "haka", or ceremonial dance, against a contentious Bill.

### About Maori Tribe:

- The Maori Tribe is an indigenous tribe who have inhabited New Zealand for centuries.
- Maori were originally settled primarily in the northern parts of the North Island, New Zealand. The South Island was much more sparsely settled.
- Culturally, they are Polynesians, most closely related to eastern Polynesians.
- Maori culture has endured centuries of torture and struggle, first in the hands of the 'Crown', and later others who wished to claim a spot on their land.
  - Language: Maori is classified as part of the Polynesian Group of the Eastern Oceanic Branch of the Austronesian languages.
- Approximately one-third of the Maori still speak their ancestral language, with the vast majority fluent in English as well.
- According to data from the 2013 census, there were 598,605 Māori in the country, making up 9 percent of the total population.
- Their distinctive costumes serve as a visual expression of their heritage, reflecting their deep connection to the land and ancestral spirits.
- The most famous aspect of Maori culture is the Haka, a powerful war dance known for its intensity, facial expressions, and rhythm.
- Another very prominent identity of the Maori people are their tattoos, which can be seen on their faces.
  - These tattoos are called 'ta moko' which is a traditional Maori art form, deeply symbolic and respected.
  - Ta moko designs are unique to each person and are a depiction of their social status, their genealogy, what they have done for society, and more.



### Other popular hakas include:

- Peruperu: A war haka performed before battle to intimidate the enemy and demonstrate strength.
- Ngeri: A short haka without set actions, often used to stiffen the sinews and uplift the spirit.
- Pōwhiri: A welcoming haka performed during formal greeting ceremonies.
- Manawa wera: A haka performed at funerals or memorials to express grief.

Source: Indian Express

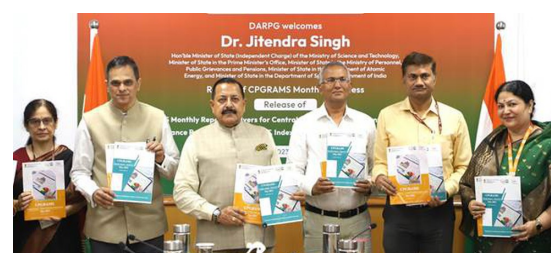
## Grievance Redressal Assessment And Index

### Why in the news?

Recently, the Union Minister of State (Independent Charge) Science & Technology has launched Grievance Redressal Assessment and Index (GRAI) 2023.

### About Grievance Redressal Assessment And Index:

- It was conceptualized and designed by the Department of Administrative Reforms and Public Grievances



(DARPG), Government of India based on the recommendation of Parliamentary Standing Committee of Ministry of Personnel, Public Grievances and Pensions.

- Objective: It has an objective to present organization-wise comparative picture and provide valuable insights about strengths and areas of improvement regarding grievance redressal mechanism.
- The first edition of GRAI 2022 was released on 21 June 2023.
- Eighty-nine Central Ministries and Departments were assessed and ranked based on a comprehensive index in the dimensions of (1) Efficiency, (2) Feedback, (3) Domain and (4) Organisational Commitment and corresponding 11 indicators.
- To compute the index, data between January and December 2023 was used from the Centralised Public Grievance Redressal and Management System (CPGRAMS).
- Department of Agriculture and Farmers Welfare, O/o the Comptroller & Auditor General of India and Department of Investment & Public Asset Management have topped the rankings in Group A, B and C respectively.
- This report presents a two-dimensional (vertical and horizontal) analysis of the root causes of effective redressal of grievances of each Ministries and Departments in an easily discernible colour coded analysis.
- The report also presents a brief description of technical partners DARPG has engaged to facilitate the Ministries and Departments to optimally utilize CPGRAMS as a means of effective grievance redressal media.
- This report presents a clear roadmap with an advisory for the Ministries and Departments to leverage CPGRAMS and its features like IGMS 2.0, TreeDashboard, etc., to enhance grievance redressal.
- The roadmap for improvement emphasizes integrating advanced technologies like AI and ML for data analysis, predictive analytics and preventive measures while revising ATR formats for better reporting.
- Capacity building for GROs, enhancing accountability through audits and extending CPGRAMS integration to the third-tier of government are key recommendations.

**Source: PIB**

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## State of the World's Children 2024 (SOWC-2024) Report

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### Why in the news?

The world is facing an unprecedented crisis with nearly half of all children – about 1 billion – living in countries that face a high risk of climate and environmental hazards, the UNICEF's State of the World's Children 2024 (SOWC-2024) report said recently.

### About State of the World's Children (SOWC) Report:

- It is the annual flagship publication of the United Nations Children's Fund (UNICEF).
- The report closely examines a key issue affecting children.
  - These have ranged from children with disabilities, conflict and war, child labour, urbanization, early childhood development, and much more, making it the most comprehensive analysis of global trends that impact children.
  - The report includes supporting data and statistics.



### Highlights of SOWC-2024:

- This year, the SOWC was launched on 20 November, celebrated globally as World Children's Day– UNICEF's annual day of action for and by children, with focus on 'Listen to the Future,' voices of children and young people on the world they want.
- The report explores three megatrends that will profoundly impact children's lives between now and 2050: demographics shifts, the climate and environmental crises and frontier technologies.
- The report projects that by 2050, the global child population will stabilize around 2.3 billion, with a significant shift in regional distributions.
- India, China, Nigeria and Pakistan are expected to account for more than a third of the world's child population by 2050.
- India is estimated to have the largest share at 350 million, despite a decline of 106 million compared to today.
- Nearly one billion children worldwide face extreme vulnerability to climate and environmental hazards, with Indian children disproportionately affected.
- According to the Children's Climate Risk Index (CCRI), in 2021, India ranked 26th out of 163 ranked countries globally, with children particularly exposed to risks such as extreme heat, floods, droughts, and air pollution.
- By 2050, as the report has cautioned, children, not only in India, but also worldwide, will face dramatically increased exposure to extreme climate and environmental hazards.
- It predicts that nearly eight times more children will be exposed to extreme heat waves compared to the 2000s.
- The digital divide remains stark. In 2024, over 95 percent of people in high-income countries are connected to the internet, compared to nearly 26 percent in low-income countries.

**Source: The Hindu**



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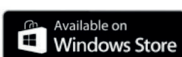
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