

Factly Weekly

Compilation

2026

**For UPSC CSE Prelims
Exam**

4th Week

August 2026

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Mission CosmoCube

News: On August 14, 2026, an international team announced that CosmoCube could study faint radio signals from the early universe.

About Mission CosmoCube



Source – ToI

- **Mission CosmoCube** is a **proposed suitcase-sized satellite mission** designed to study the cosmic dark age, the period before the formation of the first stars.
- **Developed By:** The mission is being developed by an international team of scientists led by the University of Cambridge in the United Kingdom.
- **Aim:** The mission aims to detect the faint 21-centimetre line, or hydrogen line, from more than 13.5 billion years ago and study the cosmic dark age.
- **Working Mechanism:**
 - **Lunar Shield:** It would orbit the Moon and use its far side as a natural shield against radio interference from Earth.
 - **Observation Period:** It would spend around 40 minutes on the lunar far side during every two-hour orbit to collect low-frequency radio measurements.
 - **Data Processing:** Onboard checks and mathematical models would help remove interference from the spacecraft, the Milky Way, and other sources.
- **Key Features:**
 - **Dark Matter Study:** The observations could provide clues about how dark matter helped bring matter together to form the first stars and galaxies.
 - **Small but Advanced:** Despite its small size, the satellite would use a lightweight radio antenna and systems to determine its position.
 - **Mission Duration:** The mission would last two years and collect around 1,000 hours of data.
 - **Expected Timeline:** The mission could be ready for launch within about five years.
- **Potential challenge:** Increasing lunar activity and infrastructure on the Moon's far side could make it difficult to preserve the naturally quiet radio environment.

Narwhals

News: Researchers have decoded the narwhal tusk's double-twist structure, which helps explain how the tusk grows straight and remains strong.

About Narwhals



Figure 1. Source – Escales

- **Narwhals** are **medium-sized toothed whales** belonging to the **Monodontidae** family.
 - They differ from other toothed whales as they **have no teeth in their mouths**.
- **Habitat:** They **spend the winter under sea ice**.
 - In **spring**, they **move to inshore waters** and **spend the summer in coastal waters**.
- **Distribution:** They live in the **Arctic Ocean**, mainly around **Canada, Greenland, Norway and Russia**.
- **Key Features**
 - **Size:** They can reach **around 5 m in length**.
 - **Appearance:** They have **stout, torpedo-shaped bodies**, a **low dorsal ridge**, and **short paddle-shaped front flippers**.
- **Colour:** They **change colour as they grow older**.
 - **Newborns** are **blue-gray**, **juveniles** become **blue-black**, **adults** are **mottled gray**, and **old narwhals** become **nearly all white**.
- **Diet:** They feed on **fish, squid and shrimp**.
- **Behaviour:** They usually **travel in groups** and can **hold their breath for 25–30 minutes**.
- **Tusk:** The **tusk is a long, spiralled canine tooth** that **usually develops in males** and can **grow up to 3 metres long**.
 - **Females** occasionally **develop** a tusk.
- **Tusk Anatomy:**
 - **Outer and Inner Layers:** The **outer layer, called cementum**, forms a **left-handed spiral**.
 - While the **inner layer, called dentine**, forms a **right-handed spiral**.
 - **Double-Twist Structure:** These **two layers have opposite twists**, which **create an internal counterbalance** where the inner and outer parts meet.
 - **Strength and Stability:** This arrangement creates **internal tension** and **helps the tusk grow straight and strong**, while **providing stability against bending and twisting**.
- **Function:** Their tusks may **help males establish social hierarchy** during contests.
 - They may also be **used for play, detecting the level of salt in the waters through which narwhals swim**, and **investigating, manipulating, and influencing the behaviour of prey**.
- **Threats:**
 - Oil and gas development
 - Climate change
- **IUCN Status:** **Least Concern**

Lake Erie

News: A team of divers recently identified the wreckage of a sailing vessel which drowned in the lake in 1868.

About Lake Erie



Figure 2. Source – Britannica

- **Location:** Lake Erie is one of North America's Great Lakes situated on the border between the United States and Canada.
- It is the fourth largest of the Great Lakes by surface area and the smallest by volume, making it the shallowest of the five lakes.
- The lake is bordered by the states of Ohio, Pennsylvania, and New York in the U.S. and the province of Ontario in Canada.
- **Geographical Features**
 - Lake Erie has a surface area of about 25,700 sq. km and an average depth of around 62 feet (19 meters).
 - The lake is known for its distinctive, relatively warm waters, which can reach temperatures suitable for swimming in summer.
 - The lake's shallow nature contributes to its quicker warming and cooling compared to other Great Lakes.
- **Ecosystem:** The lake supports a diverse ecosystem, including various fish species like walleye, perch, and bass.
 - It also serves as a critical habitat for migratory birds and other wildlife.
- **Economic Importance**
 - Lake Erie plays a vital role in the regional economy. It supports commercial fishing, tourism, and shipping, with several major ports along its shores, including Cleveland, Toledo, and Erie, Pennsylvania.
 - The lake's waters are also used for recreational activities such as boating, fishing, and swimming, attracting visitors from nearby urban areas.
- **Cultural Significance:** The lake has a rich cultural history, with Indigenous peoples living in the region for thousands of years.
 - It has been a site for various historical events, including significant naval battles during the War of 1812.
- **Threats:** The ecosystem has faced challenges, including pollution, invasive species, and algal blooms, which have raised concerns about water quality and biodiversity.

Barren-land Fallacy

News: Tree-planting drives in India have highlighted concerns about planting trees in unsuitable ecosystems and ignoring the value of naturally open ecosystems.

About Barren-land Fallacy



Source – TH

- **Barren-land Fallacy:** It is the **belief that land without tree cover is ecologically deficient and should evolve or be converted into a forest.**
- **Consequences of the Fallacy:**
 - **Damage to Open Ecosystems:** Grasslands, savannas, scrublands, wetlands, and deserts may be wrongly treated as degraded land, even though they are complete ecosystems.
 - **Loss of Biodiversity:** Many native plants, birds, and animals depend on **open spaces** for their survival.
 - **Stress on Water Resources:** Treating naturally open ecosystems as degraded land and **planting unsuitable trees can increase pressure on water resources.**
 - For example, planting **eucalyptus trees, which draw a lot of water, in water-stressed areas can further increase this pressure.**
- **True restoration means:**
 - **Protecting the Native Ecosystem:** Identifying and preserving the natural ecosystem that belongs in that specific location (**whether it is a forest, wetland, or grassland**).
 - **Restoring Natural Processes:** Allowing the land to recover its natural balance rather than forcing artificial changes on it.

Operation Black Hawk

News: In a breakthrough against drug trafficking, officers of the Central Bureau of Narcotics (CBN) MP and UP Units successfully executed 'Operation Black Hawk'.

About Operation Black Hawk



Figure 3. Source: PIB

- **Agency Involved:** Under the operation, the [Central Bureau of Narcotics \(CBN\)](#) has busted an interstate drug syndicate by undertaking back to back operations.
- **Team involved in Operation:** It was carried out by teams from the CBN's Madhya Pradesh and Uttar Pradesh units.
- **Activities undertaken:**
 - The contraband **originated from North-Eastern State and were being trafficked for consumption in Uttar Pradesh.**

- **Arrest:** Three key members of an inter-state trafficking network have been **arrested**.
- **Seized Item:** The team seized over **18.6 kilograms of raw heroin** from smugglers at two different locations near Lucknow (U.P.).

Jojari River

News: The Supreme Court directed additional safeguards to protect the Jojari River ecosystem from pollution and industrial activities.

About Jojari River

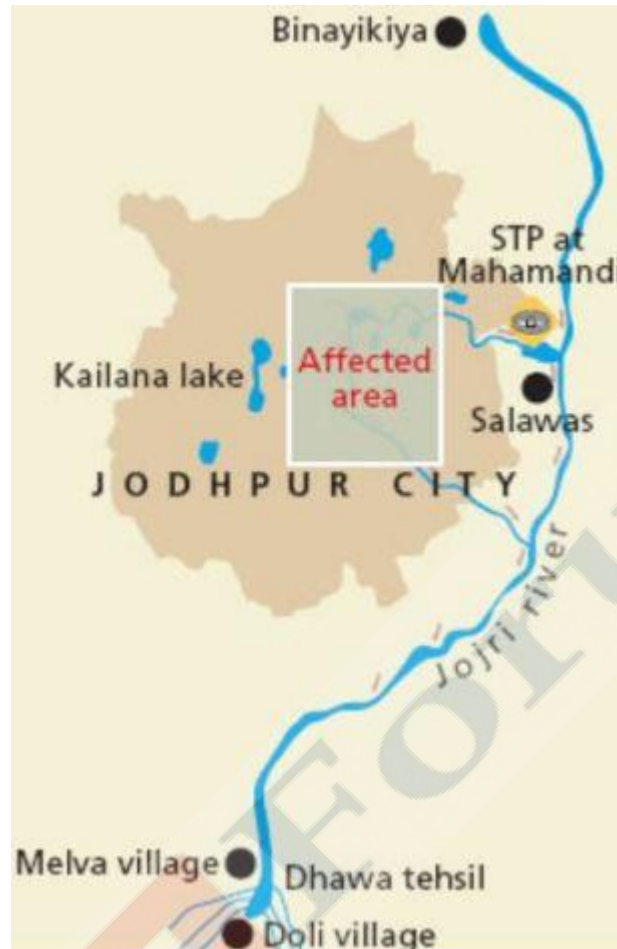


Figure 4. Source – DTE

- **Origin:** It originates in **Pandalu village, Nagaur district, Rajasthan**.
- **Course of the River:** It passes through **Jodhpur** and joins the **Luni River** near **Balotra**.
- It is a **seasonal river**.
- **Tributary of:** It is the **only right-bank tributary of the Luni River**.
 - Unlike the other tributaries of the Luni River, the **Jojari River does not originate from the Aravalli Range**.
- **Biodiversity:** **Wildlife and desert vegetation in the Dhawa-Doli area** have declined with increasing pollution.
- **Pollution:** Chemical-laden water from Jodhpur's textile and steel industries flows into the river.
 - Pollution has **affected the health of people, agriculture, land, flora and fauna**.
- **Supreme Court Intervention:** Recently, the Supreme Court **took suo motu cognisance** of contamination and industrial **pollution in the Jojari River**.
 - It also **considered their impact on the Jojari-Bandi-Luni river ecosystem**.
 - The Court directed that **no hazardous industry or polluting activity shall be permitted within 500 metres of either side** of the existing flood line or present flow path.

Cloud and AI Skilling Initiative

News: National Skill Development Corporation and Cultus Education have launched a nationwide cloud and Artificial Intelligence skilling initiative in collaboration with Amazon Web Services.

About Cloud and AI Skilling Initiative



Figure 5. Source – BS

underserved areas.

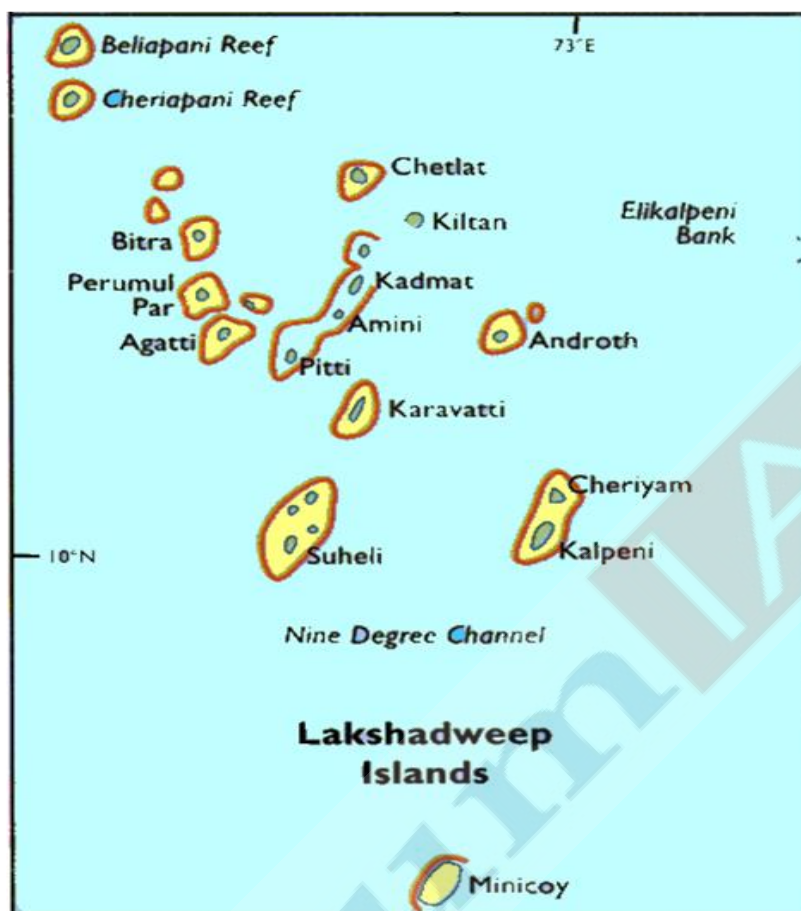
- **Key Features**

- **Large-Scale Training:** It will provide foundational cloud and Artificial Intelligence literacy to 1.5 lakh learners through Amazon Web Services digital training content.
- **Job-Ready Programme:** It will provide intensive training to 10,000 participants through the Amazon Web Services re/Start programme.
- **Focus Areas:** The training will cover cloud infrastructure, networking, security, programming, relational databases, and Artificial Intelligence fundamentals.
- **Wider Access:** The initiative will cover all States and Union Territories, with a focus on youth in Tier 2 and Tier 3 cities and underserved communities.
- **Online Learning:** The programme will be delivered entirely online through Cultus Education.
- **National Hackathon:** The programme will conclude with a National Hackathon where participants can present their cloud and Artificial Intelligence projects.

Lakshadweep Islands

News: The Kerala High Court strengthened old Lakshadweep cowledars' land rights: qualifying cowledars are landowners, and the government cannot take their pandaram land without lawful acquisition and compensation.

About Lakshadweep Islands



Source: Class 11th NCERT

- **Lakshadweep** is an archipelago comprising 36 islands situated off the southwestern coast of India in the Arabian Sea.
- It is a **uni-district Union Territory** and comprises of 12 atolls, 3 reefs, 5 submerged banks and 10 inhabited islands.
 - Also, there are also ten inhabited islands, 17 uninhabited islets, five submerged reefs, and four newly formed islets.
- **Capital:** The capital of the island is **Kavaratti**, located in **Kavaratti Island**.
- It is **smallest Union territory** of India in term of area.
- **Area:** It covers total area of **32 sq. km.**
- **Formation:** The Union Territory was formed in **1956** and it was named **Lakshadweep in 1973.**
- **Division:** It is broadly **divided** into **three geographical groups**. These include:
 - **Amindivi Group** (consisting of 5 inhabited islands) in the north
 - **Laccadive Group** (consisting of 4 inhabited and 12 uninhabited islands) in the center
 - **Minicoy Group** (consisting of 1 inhabited and one uninhabited island) in the south.
- **Inhabited islands:** The inhabited islands include **Agatti, Amini, Androth, Bitra, Chetlat, Kadmat, Kalpeni, Kavaratti, Kiltan, and Minicoy.**
- **Straits and channels that separates different islands:**
 - **Kavaratti Channel-** It separates **Kavaratti and Agatti.**
 - **8 Degree channel-** It separates **Minicoy island and Maldives.**

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- **9 Degree channel-** It separates Minicoy Island from the main Lakshadweep group.

About Pandaram land and Cowledar

- The **1965 regulation** created a **statutory framework** for **land revenue, tenancy and the rights and liabilities** of landholders in Lakshadweep.
- **Pandaram lands:** It refers to a **form of land ownership**. Over **60%** of the land in Lakshadweep, falls under the Pandaram lands.
- **Cowledar:** A cowledar as “a person who has been or is granted a lease of pandaram land for a specified period, subject to conditions including making improvements to it”.
 - The same regulation **defines a landowner** to include a “**person shown in government records as holding pandaram land as a cowledar**”.

Garbhini Mitra Course

News: The All India Institute of Ayurveda (AIIA), New Delhi, an autonomous premier institution under the Ministry of Ayush, has introduced the Garbhini Mitra Course for the 2026–2027 academic session.

About Garbhini Mitra Course



Figure 6. Source – DD India

- **Garbhini Mitra Course** is a **structured healthcare skill-development programme** aimed at creating **trained personnel** to provide **appropriate health education, lifestyle guidance, and community-level support** to women during pregnancy and the postnatal period.
- It is **rooted in the traditional Ayurvedic concepts** of **Garbhini Paricharya (antenatal care), Sutika Paricharya (postnatal care), and Garbhadhana Vidhi (pre-conceptional care)**.
- **Nodal Ministry:** Ministry of Ayush
- **Implementing Institution:** : It has been introduced by **All India Institute of Ayurveda (AIIA), New Delhi** for the 2026–2027 academic session.
- **Components of the course:**
 - This initiative **complements clinical antenatal care**.
 - Routine check-ups, diagnostic tests, and monitoring of blood pressure and haemoglobin remain essential.
 - **Trained Garbhini Mitras support pregnant women** by identifying warning signs and facilitating timely referral to qualified doctors and healthcare facilities.
- **Course design and duration:** It is **designed as a six-month offline training programme** running from Monday to Friday between 3:00 PM and 5:00 PM.
 - It **equips participants with practical skills** in trimester-specific dietetics, lifestyle modifications, pregnancy-safe yoga, emotional support during labour, newborn massage, and basic life support protocols.
 - The curriculum also **emphasizes infection control, sanitization, biomedical waste management, and workplace safety**.
- **Eligibility for the course:** It admits **20 students per batch**.

- Candidates who have **passed the Senior Secondary (10+2)** examination from **any recognized board** in India and are at least **18 years of age** are eligible to apply.
- **Who can enroll:** Candidates currently awaiting their 12th-grade results may also submit provisional applications.
- **Course completion:** After completing the course, **candidates can pursue roles as Garbhini Mitra Assistants, Prenatal/Postnatal Care Assistants, Antenatal Wellness Guides and Maternal Health Support Workers**, with opportunities in Ayush centres, maternity clinics, NGOs, community health projects and wellness institutions.

GENESIS NextGen Startup Summit

News: GENESIS EIR 3.0 was launched at the GENESIS NextGen Startup Summit, Coimbatore Edition at Rathinam Global University, Coimbatore.

About GENESIS NextGen Startup Summit



Figure 7. Source: PIB

- GENESIS NextGen Startup Summit was held at Coimbatore.
- The summit was organized as a **collaborative platform to inspire, connect and empower aspiring entrepreneurs**, startups, innovators, researchers, students, academia, industry leaders and ecosystem partners
- **Focus:** Its focus was on **promoting innovation-led entrepreneurship through knowledge sharing, mentorship, networking and ecosystem collaboration.**
- **Highlight of the summit:** GENESIS EIR 3.0 was launched at the GENESIS NextGen Startup Summit.
 - It is a **component of the GENESIS (Gen-Next Support for Innovative Startups)** scheme, aimed at **discovering, supporting and accelerating startups**, particularly in **Tier-II and Tier-III cities**.
 - Through its Entrepreneur-in-Residence component, it **provides focused funding and incubation support** to help innovators, students and entrepreneurs convert early-stage ideas into pilot-ready solutions.
- **Implemented by:** It is being implemented by **MeitY Startup Hub**.
 - It supports **early-stage innovators developing technology-based solutions in Electronics, Information Technology (IT), Information and Communication Technology (ICT) and DeepTech.**
 - Selected applicants will **receive incubation, mentorship, ecosystem access, networking opportunities and financial assistance** of up to **₹10 lakh** through participating GENESIS incubators.

- Through this initiative, **MeitY Startup Hub seeks to strengthen India's technology startup ecosystem and empower innovators** from across the country to build scalable and impactful ventures.

About GENESIS

- **Gen-Next Support for Innovative Startups (GENESIS)** is a flagship initiative of **MeitY Startup Hub**.
- It was launched in **2022 by MeitY**.
- It is designed **to discover, support, grow and accelerate startups across India's Tier-II and Tier-III cities**.
- **Budgetary outlay:** It has **total budgetary outlay of ₹490 crore**.
- **Components:** Through its **Entrepreneur-in-Residence, Pilot, Investment and DeepTech funding components**, GENESIS supports startups and innovators from early ideation and experimentation through to validation, investment and scale.
- It **seeks to unlock the entrepreneurial potential of emerging regions** and connect them more deeply with India's growing innovation ecosystem.

Demand for a Gorkha State

News: The Union Ministry of Home Affairs constituted a high-level committee to prepare a framework for a permanent political solution to the Gorkha issue.

About Demand for a Gorkha State



Source – News X

- **Demand:** The Gorkhas have **long demanded political self-rule**, protection of their **ethnic-linguistic identity**, and a **separate administrative unit or Gorkhaland**.
 - **Gorkhaland** refers to the proposed **separate administrative unit** comprising **Darjeeling and its adjoining areas**, including **Kalimpong, Kurseong, the Terai and the Dooars**.
- **Basis of Demand**

- **Distinct regional identity:** Gorkhaland has a predominantly **Nepali-speaking population** with **distinct cultural, ethnic and linguistic characteristics**.
- **Identity crisis:** Residents **often face racial profiling** and are **wrongly labelled as citizens of Nepal or China**.
- **Assertion of Indian identity:** This persistent alienation has strengthened the demand to affirm the Gorkhas' identity as Indian citizens.
- **Historical Roots**
 - **1907:** The **Darjeeling Hillmen's Association** petitioned the **Minto-Morley Reforms Committee** to **separate Darjeeling and Jalpaiguri from Bengal**.
 - **1929 onwards:** Gorkha groups presented their **case to the Simon Commission** and **British officials for a different governance system**.
 - **1947:** The undivided **Communist Party of India** submitted a memorandum **demanding "Gorkhasthan"** to **Jawaharlal Nehru and Liaquat Ali Khan**.
 - **1980s:** **Subhas Ghising and the Gorkha National Liberation Front** gave the movement a **violent and high-profile form** and **popularised the term "Gorkhaland"**.
- **2017 Unrest:** The **agitation began** after **Bengali was announced as a mandatory language in state-run schools** and lasted 104 days.
- **Institutional Attempts:** Over the years, different institutional arrangements were created to provide self-governance in the region.
 - **DGHC, 1988:** The **Darjeeling Gorkha Hill Council (DGHC)** was created as a **semi-autonomous body** following unrest.
 - **GTA, 2011:** The **Gorkha Territorial Administration (GTA)** replaced the DGHC but **did not end the statehood demand**.
 - **Interlocutor, 2025:** The Centre appointed **Pankaj Kumar Singh** to **initiate structured tripartite negotiations**.
- **High-level Committee (August 2026):**
 - The **Union Ministry of Home Affairs** constituted a **high-level committee** to prepare a **framework for a permanent political solution to the Gorkha issue**.
 - **Purpose:** It seeks a **lasting constitutional and administrative arrangement** to **address the Gorkhas' demand** for political self-rule and protection of their identity.
 - The committee will also **examine financial assistance for the region** and a **roadmap for granting Scheduled Tribe status to 11 Gorkha communities**.

Crete Island

News: Greek media has reported that more than 300 migrants have been rescued off Crete coast in last few days.

About Crete Island



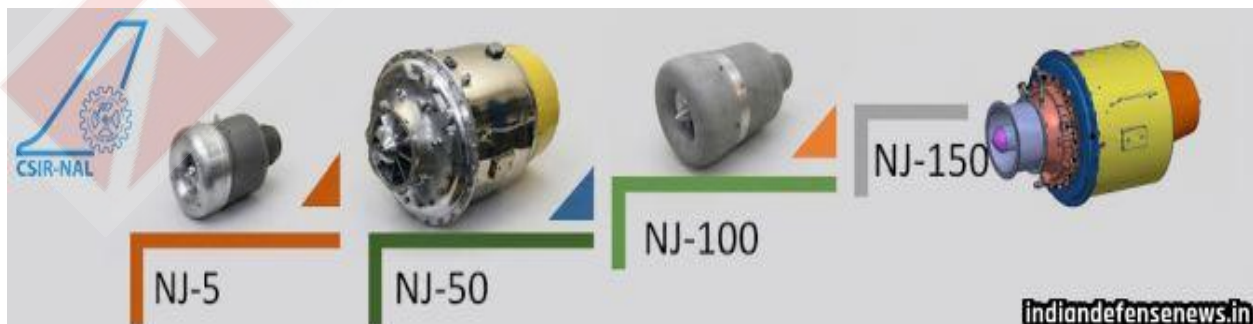
Source – Britannica

- **Location:** Crete island is located in the **southern part of the Aegean Sea** (a part of the Mediterranean Sea) and is a part of **Greece**.
- It is the **largest island in Greece** and the **fifth largest in the Mediterranean Sea**.
- **Borders:** The island is bordered by the **Sea of Crete** to the north, the **Libyan Sea** to the south, the **Myrtoan Sea** to the west, and the **Carpathian Sea** to the east.
- **Topography:** The island is dominated by **rugged mountains** that crisscross from west to east.
 - The **highest point** on the island is **Mt. Ida**, also known as **Psiloritis**.
- **Economy:** Its economy is primarily based on **tourism, agriculture, and shipping**.

NJ-05, NJ-50 and NJ-100

News: The Council of Scientific and Industrial Research-National Aerospace Laboratories (CSIR-NAL) unveiled three indigenous micro and small gas turbine engines NJ-05, NJ-50 and NJ-100.

About NJ-05, NJ-50 and NJ-100



Source: Indian Defence News

- **NJ-05** is an indigenous micro gas turbine engine with a **5 kg thrust capacity**.
- **NJ-50** is an indigenous micro and small gas turbine with a **thrust of 50 kg**.
- **NJ-100** is an indigenous micro and small gas turbine **with a 100 kg thrust capacity**.
- **Developed by:** The engines have been developed by **CSIR-National Aerospace Laboratories (CSIR-NAL)**
- **Purpose:** The engines have been developed **to address critical requirements for indigenous defence technologies**.
- **Application:** These **compact propulsion systems** are envisaged for applications **such as tactical unmanned aerial vehicles, drone interceptors and compact missile systems**.

Gut Microbiome

News: A major study has found that South Asian gut microbiomes are distinct and follow community-specific changes shaped by lifestyle and local factors.

About Gut Microbiome

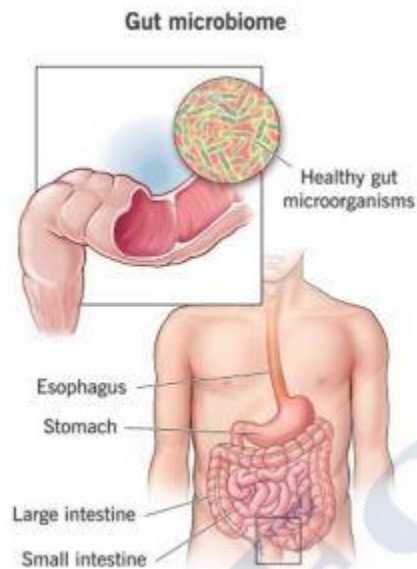


Figure 8. Source – Cleveland Clinic

- **Gut Microbiome** is the **community of microorganisms**, including **bacteria, viruses, fungi and parasites**, that live in the **human gut**.
- **Acquisition of Gut Microbiome**
 - **Initial acquisition:** A human **infant first acquires** gut microbes during **vaginal delivery and through breastfeeding**.
 - **Later changes:** As a person grows, **diet and other environmental exposures** introduce new microbes and can change the gut microbiome over time.
- **Key Functions of the Gut Microbiome**
 - **Energy harvesting:** It helps in **harvesting energy from digested food**.
 - **Protection:** It protects the body **against harmful pathogens**.
 - **Immune regulation:** It helps **regulate immune function**.
 - **Gut barrier:** It strengthens the **biochemical barriers of the gut and intestine**.
 - **Nutrient production:** It helps **break down food compounds** and **synthesize certain vitamins and amino acids**.
- **Dysbiosis:** It is a **disturbance in the normal balance between beneficial and harmful microbiota**, which can **make the body more susceptible to disease**.
 - **Causes of Dysbiosis:** Infectious illnesses, certain diets, prolonged use of antibiotics or other bacteria-destroying medicines, and environmental exposures can disturb the normal balance of gut microbiota.
- **Diseases Associated:**
 - **Gastrointestinal diseases:** Harmful bacteria can **cause infections**, including food poisoning and diseases that result in **diarrhea and vomiting**.
 - **Inflammatory bowel disease:** Gut bacterial populations are linked with **Crohn's disease and ulcerative colitis**.
 - **Obesity and diabetes:** **Low microbial diversity** has links with **obesity and type 2 diabetes**.
 - **Metabolic syndrome:** The status of **gut microbiota** has links with **metabolic syndrome**.

- **Antibiotic-resistant infections:** Disturbing microbiota with antibiotics can contribute to infections that become resistant to antibiotics.
- **Recently, a South Asian Gut Microbiome Study revealed a unique pattern in South Asian gut microbiomes.**
 - **Their gut microbiomes were distinct from** those reported in **other parts of the world.**
 - **Each community** followed a **unique** microbiome trajectory shaped by **culture, diet, geography and lifestyle.**
 - **Different communities responded differently** to urbanization, with common microbial changes also associated with metabolic health.

Sanskrit Poet Kalidasa

News: Recently, 'Kaho Kalidasa!', a novel by Yugul Joshi, on the poet's life and works, launched at IGNCA, New Delhi.

About Sanskrit Poet Kalidasa



Source: Mintage World

- **Birth:** The exact **birth date** and **birthplace** of the ancient Sanskrit poet Kalidasa remain **unknown**.
- He is associated with various **regions such as Himalayas, Ujjain and Kalinga.**
- He was a **great Sanskrit poet and dramatist of India.**
- In India, he is praised by all his **followers** such as **post dated poets and critics namely Mamta, Anandavardhancharya, Abhinav Gupta etc.**
- He **flourished around the late 4th and early 5th century CE.**
- He has **influenced** the mentors of the middle ages, as well as the pioneers of Indian renaissance like **Vivekananda and Tagore.**
- **Kalidasa's Literary Works:** Kalidasa is credited with **several remarkable works** that showcase **his mastery of Sanskrit poetry and drama.**
 - The society reflected in Kalidasa's work is **that of a courtly aristocracy sure of its dignity and power.**
- **His major works include:**
 - **Ritusamhara:** It is a **small lyrical poem** giving a graphic and poetic description of the **six seasons of India.**

- **Meghadutam:** A lyrical poem in which an exiled yaksha sends a message to his beloved through a passing monsoon cloud. It became a **model for the sandesha-kavya (messenger-poem) tradition** in Sanskrit literature.
- **Kumarasambhava:** An epic poem that portrays the **divine love of Shiva and Parvati** and the birth of their son, Kumara.
- **Raghuvamsa:** An epic celebrating the lineage of King Raghu, including Rama, and demonstrating Kalidasa's ability to creatively reinterpret themes from the Ramayana.
- **Malavikagnimitra:** It is considered one of Kalidasa's early dramas. It revolves around love, courtly life, and mistaken identities.
- **Vikramorvasiya:** A romantic drama that explores the intense and often tragic love between King Pururavas and the celestial nymph Urvashi.
- **Abhijnanasakuntalam:** Kalidasa's most celebrated play, renowned for its lyrical beauty, dramatic depth, and the unforgettable character of Shakuntala.
 - It is a drama of seven acts based on the old legend of Shakuntala, described in Mahabharata.
 - It was the first Sanskrit drama ever to be translated into a European language.

Peppara Wildlife Sanctuary

News: A monsoon bird survey recorded 124 bird species at Peppara Wildlife Sanctuary, including several Western Ghats endemic and rare species.

About Peppara Wildlife Sanctuary

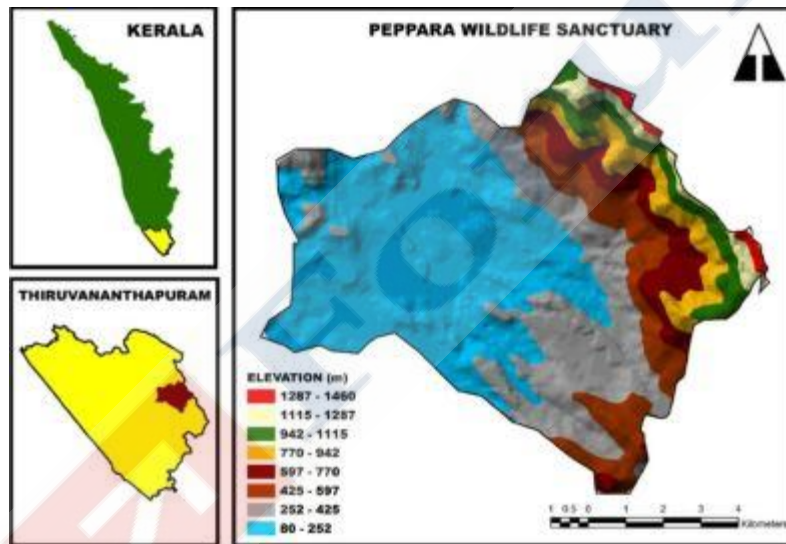


Figure 9. Source – ResearchGate

- **Location:** Peppara Wildlife Sanctuary is a protected area located in the Western Ghats of Thiruvananthapuram district of Kerala.
 - It is an integral part of the UNESCO-designated [Agasthyamala Biosphere Reserve](#), which also includes the [Shendurney](#) and Neyyar Wildlife Sanctuaries.
- It was declared a wildlife sanctuary in 1983.
- **Boundaries:** Peppara Wildlife Sanctuary is bordered by the Kalakkad-Mundanthurai Tiger Reserve of Tamil Nadu in the northeast, Palode Reserve Forest in the north, and Neyyar Wildlife Sanctuary in the south.
- **Topography:** The sanctuary has dense forests and rugged terrain and covers an area of over 53 sq. km.
- **Vegetation:** The sanctuary contains several types of forests, including tropical evergreen, semi-evergreen, moist mixed deciduous and Myristica swamp forests.
- **Highest Point:** The Chemmunjimottai (1,717 m) is the highest peak in the sanctuary, followed by Athirumalai (1,594 m).

- **River & Dam:** The sanctuary includes the **catchment area of the Peppara Dam**, which was constructed across the **Karamana River**.
- **Flora:** Its tree diversity includes species such as **Terminalia paniculata**, **Terminalia bellerica**, **Pterocarpus marsupium**, **Palaquium ellipticum**, **Mesua ferrea**, **Hopea parviflora** and **Bombax ceiba**.
- **Fauna:** The sanctuary supports mammals such as the **Asian elephant**, **tiger**, **leopard**, **sloth bear**, **sambar**, **barking deer**, **lion-tailed macaque**, **Nilgiri langur** and **Nilgiri tahr**.

BhoteKoshi, Lendhe River and Trishuli River

News: The flash flood in the BhoteKoshi, Lendhe River and Trishuli Rivers destroyed roads, bridges and homes and lives in Nepal.

About BhoteKoshi, Lendhe River and Trishuli River



Figure 10. Source: New York Times

- **About Bhote Koshi:** It is a transboundary river which runs through Tibet, China and northern Nepal.
 - **Origin:** It originates on the southern slopes of the Himalayas in the Tibet Autonomous Region of China.
 - **Course of river:** It merges with the Trishuli to form the Narayani River in Nepal, which enters India at Valmikinagar, West Champaran, Bihar and becomes the Gandak River.
 - The river is called Poiqu (Boqu) in Tibet and

Bhote Koshi in Nepal up to its confluence with the **Sun Koshi** at **Barhabise**, after which it is known as the **Sun Koshi**.

- **About Lendhe River:** It is a trans-boundary river that runs through both Nepal and China.
 - **Origin:** It originates in Gyirong County in Tibet Autonomous Region of China.
 - **Course of river:** It flows south into Nepal, and joins the Bhote Koshi and Trishuli river systems.
- **About Trishuli River:** It is situated in the Gandaki River Basin, which is part of the Ganga River Basin.
 - **Orgin:** It has its source at Kirong Tsangpo in the Tibet.
 - **Course of river:** It flows into the Narayani River and passes through Chitwan National Park, Nepal.
 - **Tributaries:** It has several notable tributaries, including the Budi Gandaki, Marsyangdi, Seti, and Kali Gandaki, which converge to form the Narayani River at Devghat.
- The Bhote Koshi, Lendhe River, and Trishuli River form part of the Gandaki (Narayani) river system.

SAFE (Security Action for Europe) Defence Fund

News: The Italian government has requested €8 billion (\$9.3 billion) from the European Union's SAFE (Security Action for Europe) Defence Fund programme.

About SAFE (Security Action for Europe) Defence Fund

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€150
billion
in loans to strengthen Europe's
defence industry



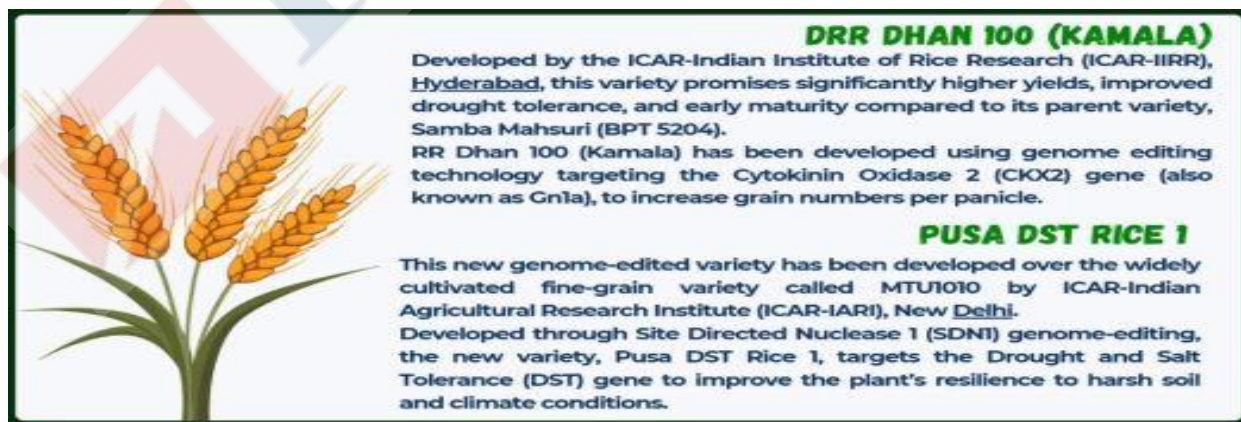
Figure 11. Source: EU

- The **Security Action for Europe (SAFE)** instrument is a **joint borrowing scheme** by the **European Union (EU)**.
- **Backed by:** It is backed by the **European Union budget**.
- **Initiated year:** It started from **29 May 2025**.
- **Aim:** It aimed at **boosting the bloc's defence capabilities and helping member states meet new, more ambitious NATO spending targets**.
- **Purpose:** It finances urgent and large-scale **investments** in the European **defence technological and industrial base**.
- SAFE funds **priority defence products** in **two categories**.
 - **For both categories, no more than 35% of component costs** can come from outside the EU, EEA-EFTA, or Ukraine.
- **Loans:** Through it, EU is providing financial assistance in the **form of loans worth up to €150 billion**.
 - The assistance **aims to help EU member states make rapid and significant increases in their defence investments** through common procurement.
 - **Allocation of the budget is demand-driven**.
 - Disbursements take the form of competitively priced **long-maturity loans**, to be repaid by the beneficiary EU member states.
- The **following countries may also participate in common procurement but only EU member states can receive SAFE loans:**
 - EU acceding, candidate, and potential **candidate countries**
 - countries that have signed **Security and Defence Partnerships** with the EU, such as Albania, Canada, **India**, Japan, Moldova, North Macedonia, Norway, South Korea and the United Kingdom.

Genome-Edited Rice Varieties – DRR Dhan 100 Kamala and Pusa DST Rice 1

News: The government is set to release Pusa Rice DST1 for commercial production in the upcoming rabi season, with transplanting around November.

About Genome-Edited Rice Varieties – DRR Dhan 100 Kamala and Pusa DST Rice 1



Source – ICAR

- **Developed by:** ICAR – Indian Agricultural Research Institute (IARI), New Delhi and the **Indian Rice Research Institute (IRRI)**, Hyderabad.
- They are **world's first genome-edited rice varieties**, named as – **DRR Rice 100 (Kamla)** and **Pusa DST Rice 1**.
- **Technology used:** These new varieties were developed using **genome-editing technology** based on **CRISPR-Cas**, which makes **precise changes** in the organism's genetic material **without adding foreign DNA**. **Technique involved**

About DRR Dhan 100 Kamala

- It was developed by **ICAR-IIRR, Hyderabad**, based on **Samba Mahsuri (BPT 5204)**.
- **Objective:** Its objective is to **increase the number of grains per panicle** (450 to 500 more grains) and it matures **20 days earlier (~130 days)**.
 - The yield is **almost 25% more**, which is about **eight tonnes more per hectare**.
- Due to its **shorter duration**, it helps **save water and fertilizers** and **reduces methane** gas emissions.
- Its **stalk is strong** and does **not fall**.
- The rice **quality is similar** to the original variety, **Samba Mahsuri**.

About Pusa DST Rice 1

- It was developed from **MTU1010** and is a '**salinity tension tolerant**'
- When cultivated under areas that have **national average of salinity**, the new variety produced **66% additional yield than MTU1010**.
- Similarly, in **alkaline conditions**, the new variety gave **66% more yield** than its original and under '**salinity tension**' conditions; the yield of the new variety was **30.36%**.

Not a GM Crop

- Current genome technology involves **using living organisms from native crop species** (known as **SDN 1 and SDN2 types of genome editing**) to enhance productivity and achieve desired results, **rather than incorporating alien organisms or bacteria**.
- The two new varieties **incorporate no foreign DNA**, so they are **not** genetically modified (GM).
- Hence, these varieties are **exempt from the biosafety regulations** outlined in Rules 7-11 of the **1989 Environment (Protection) Act**.

Background

- **National Agricultural Science Fund:** In 2018, ICAR initiated **genome-editing research** to improve **two major rice varieties** – Samba Mahsuri and MTU 1010 – under the **National Agricultural Science Fund**.
- In the **2023-24 budget**, the Government of India allocated **₹500 crores** for genome editing in agricultural crops.
- ICAR has initiated **mega genome editing projects** for **horticulture crops, animals, fish, and microbes**.

Waterspouts

News: Waterspouts were recently spotted over the Brahmaputra River in Assam's Barpeta.

About Waterspouts

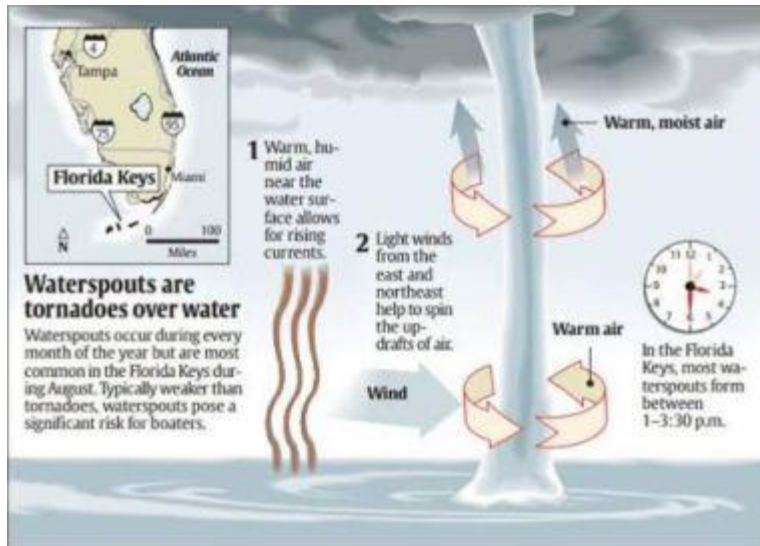


Figure 12. Source – USA Today

- It is a **rotating column of air and mist forming a funnel over a body of water.**

- They are **associated with severe thunderstorms**, and are **often accompanied by high winds and seas**, large hail, and frequent dangerous lightning.

- **Classification:** They are divided into **two main types – tornadic waterspouts and fair-weather waterspouts.**

- **Tornadic waterspouts** are tornadoes that **form over water or move from land onto water.**

- They are linked to **severe**

thunderstorms and can bring strong winds, **high waves, large hail, and dangerous lightning.**

- **Fair-weather waterspouts** usually form under developing **cumulus clouds.**

- They are **not normally connected to thunderstorms.**

- Unlike tornadic waterspouts, they **begin at the surface of the water and move upward.**

- They usually form in **light winds**, so they tend to **move very slowly.**

- **Stages of formation: Five stages of waterspout formation has been identified:**

- **Dark Spot:** A light-coloured circular area appears on the water, surrounded by a larger dark area.

- **Spiral Pattern:** Light and dark bands begin to spiral outward from a dark spot on the water.

- **Spray Ring:** A spinning ring of sea spray forms around the dark area, making it look like the eye of a hurricane.

- **Mature Vortex:** The waterspout becomes fully developed, extending from the water to the clouds above. It reaches its greatest strength and may create a visible trail and waves on the water.

- **Decay:** The waterspout weakens and disappears as the flow of warm air into the vortex decreases.

- **Characteristics**

- They have the **same characteristics as a land tornado.**

- It is generally **less intense and usually lasts about five minutes.** It can sometimes **continue for up to 10 minutes.**

- An average waterspout is approximately **165 feet in diameter** and can have wind speeds of **around 100 kilometres per hour.**

- They **typically form when humidity levels are high** and the **water is relatively warm compared with the cooler air** above it.

UN Committee on the Elimination of Racial Discrimination (UNCERD)

News: India rejected what it called “politically motivated” and “malicious” references made by UNCERD after its 11th periodic review in Geneva.

About UN Committee on the Elimination of Racial Discrimination (UNCERD)

- UNCERD is a **United Nations treaty body** that **monitors the implementation of the International Convention on the Elimination of All Forms of Racial Discrimination (ICERD)**.
 - It is **not a principal organ of the United Nations** or a judicial court.
- **Establishment:** It was established under ICERD, which was adopted in 1965 and entered into force in 1969.
- **Composition:** The **Committee consists of 18 independent experts** who serve in their personal capacity and **not as representatives of governments**.
- **Aim:** It aims to **ensure that States Parties fulfil their obligations** to prohibit and eliminate racial discrimination and promote racial harmony and equality before law.
- **Key Functions:**
 - **Periodic Review:** States Parties submit periodic reports, which the Committee examines to monitor the implementation of ICERD.
 - **Concluding Observations:** It issues observations and recommendations after examining State reports and interacting with their delegations.
 - **Early Warning and Urgent Action:** It monitors developing tensions to prevent them from escalating into racial or ethnic conflict.
 - **Complaint Procedures:** It can examine inter-State disputes and individual communications where a State has recognised its competence.
- **India's Status:**
 - **State Party:** India signed ICERD in 1967 and ratified it in 1968.
 - It also played a **leading role in negotiating and drafting the Convention**.
 - **Recent Review:** India **participated in its 11th periodic review in Geneva on August 11 and 12, 2026**.
 - **Committee's Concerns:** The Committee raised concerns about reported violations against ethnic and ethno-religious groups, Indigenous and Tribal Peoples, Scheduled Tribes, Scheduled Castes, migrants and asylum-seekers.
 - It also highlighted issues related to law enforcement actions, racial profiling, arbitrary detention, deportation, hate speech and hate crimes.
 - **India's Response:** India rejected the Committee's observations and references, describing them as politically motivated and malicious.
 - It stated that the observations contained sweeping generalisations and unsubstantiated allegations and went beyond the mandate of the Convention.

Rajghat Excavations

News: After 70 years, researchers recently opened 22 boxes from the 1957 Rajghat excavations.

About Rajghat Excavations

- **Location:** Rajghat is located on the **north-eastern edge of Varanasi** near the **confluence of the Ganga and Varuna rivers**.

It is one of the most **important archaeological sites in the middle Ganga Valley**.

According to archeologists, the area was **part of ancient Varanasi**, which served as the **capital of the Kashi kingdom**.

It is also known as the **Kashi Mahajanpad**.

- **First Excavation at Rajghat:** The first archaeological remains at the site were **discovered in 1939 during the expansion of the Kashi railway station**.
 - Further, excavations were carried out **jointly by the ASI and BHU between 1957 and 1969**, under the supervision of **BHU Professor A K Narain and archaeologist T N Roy**.

Findings during the excavation:

- The excavations uncovered remains of ancient settlements, including **structures believed to be houses, terracotta objects, seals, and many other artefacts**.

Key Findings from Rajghat Excavations



Figure 13. Source: IE

- Recently, experts also opened a box containing a **human skeleton found at the same site**, which had remained sealed for about 70 years.
- The excavated boxes contain **sculptures, ancient coins, tools, stamp seals, and objects made of copper, ivory, and bone**.
- **Inscriptions and script:** Several seals bearing inscriptions, including some written in the **Brahmi script** were also found.
- These findings can help researchers understand the **scripts, governance systems, trade, and economic systems** of the periods in which they were used.
- **Photographs negatives:** The boxes also contains around **3,000 glass slides and more than 5,000 photographic negatives** documenting archaeological sites across India- **Rajghat, Manjhi, Ratnagiri, Ajanta and Ellora**.
 - The photographs **record what these sites looked like** before years of weathering, restoration, and modern development changed some of them.
 - They also contain **rare images of idols of Lord Vishnu, Shiva, and Buddha**.

Rajbhasha Utkrishtta Sammaan

News: The Department of Administrative Reforms and Public Grievances (DARPG) has been selected for the Rajbhasha Utkrishtta Sammaan 2025–26.

About Rajbhasha Utkrishtta Sammaan

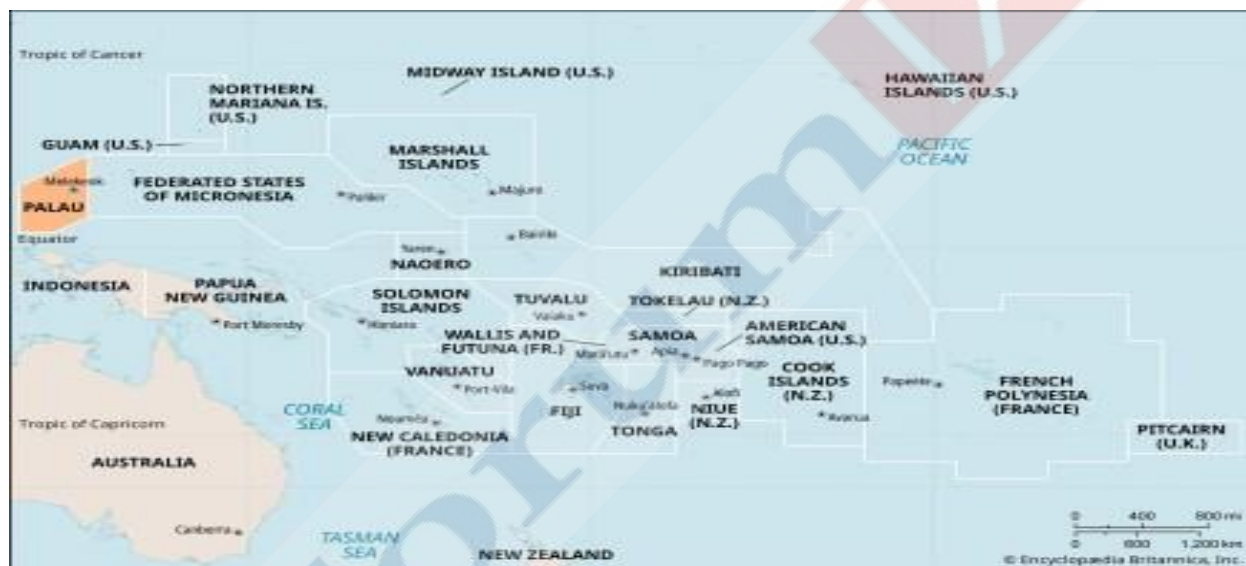
- It is a special honour that recognises **continuous excellence in the implementation of the Official Language**.
- **Presented by:** The award is presented by the **Department of Official Language under the Ministry of Home Affairs**.
- **Award Ceremony:** The honour will be presented during the **Hindi Diwas Sammelan** in Navi Mumbai on **September 14, 2026**.
- **Key Features:**
 - **Rajbhasha Kirti Puraskar:** The **Department of Administrative Reforms and Public Grievances (DARPG)** received the **Rajbhasha Kirti Puraskar (First)** for two consecutive years, **2023–24 and 2024–25**, for its performance in implementing the Official Language.

- **The “Two-Year” Rule:** According to the rules, a **Ministry or Department** that receives the **first prize for two consecutive years is not eligible to receive** the award in the following year.
- **Special Recognition:** Despite this rule, **DARPG** was selected for the **Rajbhasha Utkrishtta Sammaan** for 2025–26.
- **Constitutional Background:** On **September 14, 1949**, the **Constituent Assembly** designated **Hindi** in the **Devanagari script** as the **Official Language of the Union of India**.
- **Role of the Department:** The **Department of Official Language**, has played a **vital role** in promoting the use of **Hindi** in official matters **since 1975**.

Key Facts About Palau

News: Minister of State for External Affairs, Pabitra Margherita will visit Vietnam, Lao PDR and Palau.

Key Facts About Palau



Source: Britannica

- **Location:** It is located in the **western Pacific Ocean**.
- **Boundaries:** It shares maritime borders with the **Federated States of Micronesia, Indonesia, Philippines** and with the **international waters**.
- It has about **340 coral and volcanic islands** located on the **Kyushu-Palau Ridge**.
- **Capital:** **Melekeok**
- **Geography:**
 - Most of the islands are **small low-lying coral islands**, ringed by barrier reefs.
 - Only the **mountainous Babulthuap island** is **volcanic in origin**. It is **mainly composed of andesite**
 - **Most Populated islands:** Its major populated islands are **Babelthuap (Babeldaob), Koror, Malakal, Arakabesan, and Peleliu**.
 - **Other Inhabited Islands:** The inhabited coral islands outside **Palau's main reef system** are **built on volcanic foundations**. They include the **Kayangel Islands, and Angaur**.

- **Climate:** It has **tropical climate**.
- **Natural resources:** It is rich in minerals such as **Aggregate, bauxite, gold, insular phosphate, lignite, kaolinite**
- **Highest Point:** Its highest point is **Mount Ngerchelchuus on Babeldaob Island**.
- **Lowest Point:** The lowest point is the **Pacific Ocean**.
- **UNESCO Site:** The **Rock Islands of Palau** is a UNESCO World Heritage site.

Barrier Lake

News: A significant barrier lake formed on the Tibetan side after the August 26 glacier collapse, creating a fresh flooding threat for Nepal.

About Barrier Lake

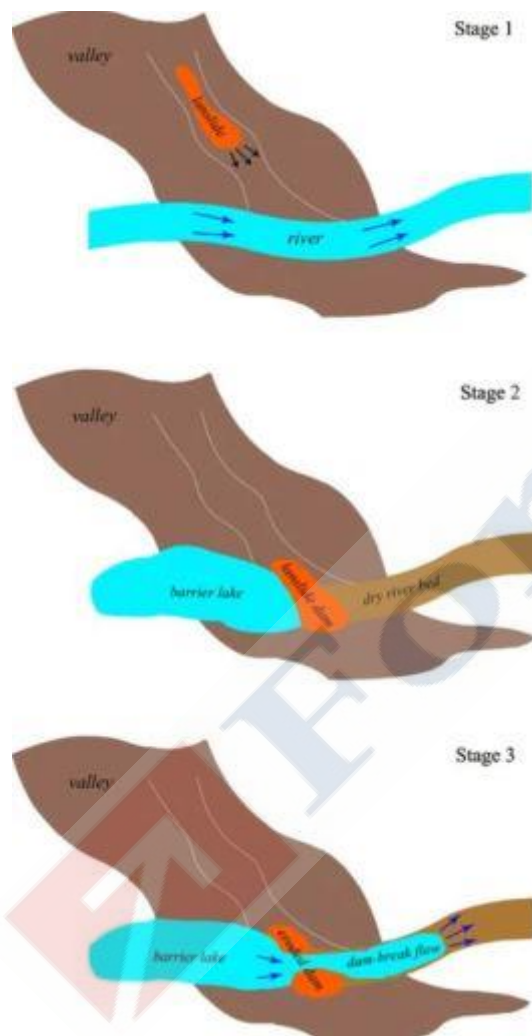


Figure 14. Source – ResearchGate

● A barrier lake is a **temporary water body formed** when **landslide debris completely blocks a river or stream channel**.

● Formation:

○ **Triggering Event:** A glacier collapse, landslide, rockfall or debris flow can dislodge rock, soil, mud and ice from steep mountain slopes.

○ **Natural Dam Formation:** The **displaced material blocks a narrow river channel**, causing **water to accumulate upstream** and form a **temporary reservoir**.

● Key Features:

○ **Temporary Nature:** Barrier lakes are temporary water bodies formed when natural debris blocks a river channel.

○ **Unstable Barrier:** The natural dam consists of **loose soil, broken rock, mud, ice and other debris**, making its stability uncertain.

○ **Water Accumulation:** Water **accumulates behind the natural barrier**, increasing **pressure on it** and potentially **weakening it over time**.

○ **Landslide Lake Outburst Flood (LLOF):** When the **natural barrier suddenly fails**, the **stored water is released rapidly**, causing a potentially **devastating flood downstream**.

○ **Variable Lifespan:** A barrier dam **may fail within days or even decades** after its formation.

Examples of Barrier Lakes

- **2026:** A barrier lake formed **near the Chhochon Khola-Purepu Tsangpo rivers along the Nepal-Tibet border**.
- **2014:** A landslide lake formed across the **Sunkoshi River**

in Nepal after a huge landslide.

- **2008:** Landslide dams formed along rivers near the **Qinghai-Tibet Plateau after the Wenchuan earthquake**.

- **2000:** The Yigong landslide created a 60-metre-high dam on the Yigong Tsangpo River.
- **1835–1966:** A rock-and-debris dam formed over the Tagermarch River in Kyrgyzstan and failed after 131 years.

Grand Chess Tour (GCT)

News: Indian Grandmaster R. Praggnanandhaa became the first Indian to win the prestigious Grand Chess Tour title in 2026.

About Grand Chess Tour (GCT)



Figure 15. Source – TH

- **Grand Chess Tour (GCT)** is an international chess circuit featuring **Classical, Rapid and Blitz** events.
 - **Founded:** The inaugural GCT was held in 2015 with three Classical events.
 - **Format:** Rapid and Blitz events were added to the tour in 2016, expanding it beyond the original Classical format.
 - **Structure:** The GCT has a regular season followed by the GCT Finals, where the leading players compete for the title.
- Grand Chess Tour (GCT) 2026**
- **Final venue:** The 2026 GCT Finals were held at the Saint Louis Chess Club, USA, from August 22–27, 2026.
 - **Qualification:** The top four players from the regular season qualified for the GCT Finals.
 - **Finalists:** The four finalists were R. Praggnanandhaa, Wesley So, Fabiano Caruana and Vincent Keymer.
 - **Final format:** The Finals were conducted as a knockout tournament with semifinals, a championship final and a third-place match.
 - **Match format:** Each match included two Classical games, two Rapid games and four Blitz games.
 - **Champion:** R. Praggnanandhaa defeated defending champion Fabiano Caruana 15–13 in the final.
 - He became the first Indian to win the Grand Chess Tour title.
 - He also secured a guaranteed spot in the 2027 tour.
 - **Prize money:** The total prize fund was US\$450,000.
 - **Prize distribution:** First place received US\$200,000, second US\$125,000, third US\$75,000 and fourth US\$50,000.

Australian Merino and Gaddi Sheep

News: Himachal Pradesh is introducing Australian Merino lambs among Gaddi pastoralists to improve wool quality while protecting indigenous sheep breeds.

About Australian Merino and Gaddi Sheep



Source – Forum IAS

Aspect	Australian Merino Sheep	Gaddi Sheep
Origin	Merino is a Spanish breed that is being reared in Australia.	Gaddi is an indigenous sheep breed of Himachal Pradesh traditionally reared by Gaddi pastoralists.
Wool Quality	It is known for soft, fine and lustrous wool . Crossbreeding aims to produce 21–22 micron apparel-grade wool .	It produces wool of approximately 27 microns , which is coarser and water-resistant.
Uses	Its fine wool is used for apparel production .	Its wool is used to make carpets, yarn, fabrics, unali coats and pattu .
Management	It is often managed intensively in large, fenced areas and requires more intensive care .	It follows a transhumant pastoral system and is adapted to rugged mountain conditions .
Adaptation	Its performance under Himachal's diverse climatic conditions remains uncertain and requires monitoring.	It has hard hooves, endurance and resistance to climatic conditions and diseases .
Wool and climate	Dense, soft wool may become heavy and dirty during heavy rains and may increase health concerns.	Indigenous wool is water-resistant and helps sheep withstand thorns and rough landscapes .

Crossbreeding	Crossbreeding can improve wool quality and market value.	Crossbreeding may improve returns but could create a long-term risk to the indigenous breed and associated culture.
Livelihood concern	Offers an opportunity for higher-value wool production.	Improving returns from existing wool is also important for securing pastoralist livelihoods.

Government Initiative

- **Himachal Pradesh** has been implementing a wool development programme since 2021 under the **National Livestock Mission**.
- **Target:** The programme aims to increase wool production to 3,000 tonnes by 2027, from around 1,500 tonnes currently.
- **Merino Introduction:** The government imported 240 Australian Merino sheep (40 males and 200 females) for genetic improvement of indigenous sheep.
- **Crossbreeding:** Artificial insemination is being used to crossbreed Merino with indigenous sheep.

Kalagarh Tiger Reserve

News: Leopards are commonly found in Kalagarh Tiger Reserve and Amargarh Tiger Reserve, but now they are seen beyond traditional forest boundaries increasing chance of human animal conflict.

About Kalagarh Tiger Reserve

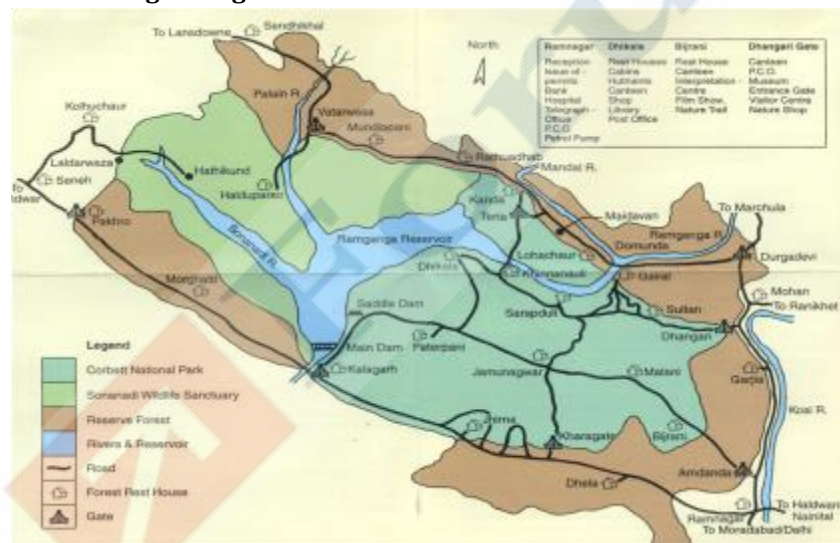


Figure 16. Source: Mongabay

- **Location:** It is situated in the **Nainital district of Uttarakhand**.
- **Formation:** In 1974, when Project Tiger was launched in India, the **Northern part of Jim Corbett** was named as **Kalagarh Tiger Reserve (KTR)**.
- **Area:** It spread in over an area of **301.18 sq km** which also includes **Sonanadi Wildlife Sanctuary**, along with **Jim Corbett National Park**.
- **Rivers associated:** **Ramganga River** river flows through the reserve.
- **Flora:** Common trees found in the reserve include **sal, sheesham, semal, bakli, haladu, tun, sain, fig, and bamboo**. The area also has many **medicinal plants**.
- **Fauna:** It has a high population of **tigers, leopards, and other members of the cat family**.
 - Many species of deer are also found here, such as **chital, barking deer, goral, sambar, and hog deer**. **Elephants** can also be seen in herds in different parts of the reserve.

Mahatma Ayyankali

News: Prime Minister Narendra Modi paid tribute to Mahatma Ayyankali and Sree Narayana Guru on their birth anniversary.

About Mahatma Ayyankali



Figure 17. Source: Round Table India

- **Mahatma Ayyankali** was a pioneering social reformer and Dalit rights leader from Keralam who challenged caste based discrimination in Travancore.
- **Birth:** He was born to Ayyan and Mala in 1863 in Venganoor, Kerala.
- **Community:** He belongs to the Pulaya community, one of the most depressed castes in Kerala.
- **Impactful factor:** His early experiences with caste discrimination profoundly influenced his lifelong commitment to social reform.
- **Initial Resistance:** He began challenging caste-based oppression by bringing Pulayars together through songs, protests, and collective efforts.
 - Over time, his courage and leadership inspired many people from marginalized communities to join the struggle for equality.
- **Influences:** His ideas were shaped by prominent social reformers such as Ayyavu Swamikal and Sree Narayana Guru.
 - He also became part of Kerala's wider movement for social equality, working to oppose caste discrimination and improve the lives of oppressed communities.
- **Contributions of Mahatma Ayyankali**
 - **Villuvandi Protest (1893):** He rode a bullock cart on public roads, challenging the caste restrictions that prevented oppressed communities from using public roads and wearing clean clothes.
 - **Right to Use Public Roads:** He organised marches and protests demanding freedom of movement for oppressed castes. His efforts helped secure access to public roads by 1900.
 - **Fight for Education:** He demanded admission of Pulaya children into public schools and even started a school at Venganoor in 1904.
 - **Sadhu Jana Paripalana Sangham (1907):** Ayyankali established this organisation to improve the condition of poor and marginalized people.
 - **Agricultural Labour Strike:** He led a strike demanding education for Pulaya children.
 - **Kallumala Samaram (1915):** He supported the struggle of Pulaya women against restrictions on clothing and caste-marking ornaments, encouraging them to reject symbols imposed by caste discrimination.
 - **Political Representation:** In 1910, Ayyankali entered the Travancore Legislative Assembly as its first Pulaya representative.

- **Death:** He passed away on **June 18, 1941**.
- **Legacy:** His efforts **to secure educational opportunities for the marginalized**, improve the lives of agricultural workers and **serve the poor remain inspiring and give strength** to all those working for social empowerment.

Mandakini river

News: The pilgrimage town of Chitrakoot in Madhya Pradesh has been inundated after torrential rainfall over the past 14 hours caused the Mandakini River to overflow.

About Mandakini River

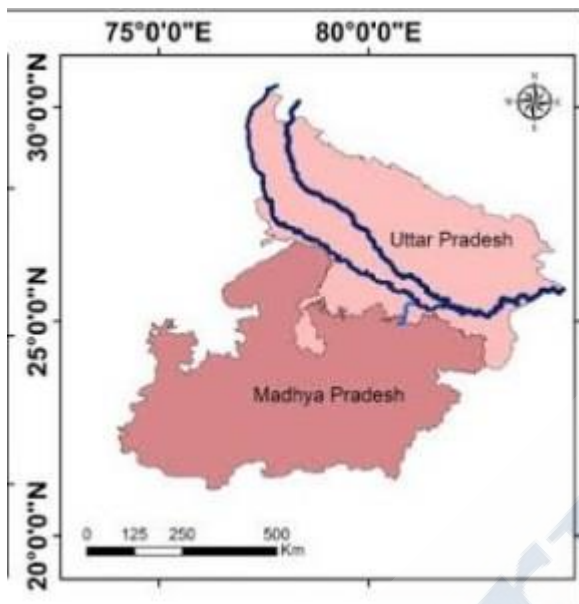


Figure 18. Source: Research Gate

- Mandakini River flows through two states, **Madhya Pradesh and Uttar Pradesh**.
- It is also known as **Paisuani River**.
- **Origin:** It originates from **Khillora hills in Majhgawan block in Satna district of Madhya Pradesh**.
- **Course of river:** It flows through **Chitrakoot** before forming the boundary between Madhya Pradesh and Uttar Pradesh.
 - It passes the perennial springs at **Sati Anusuiya**, and eventually joins the Yamuna River near Rajapur in Uttar Pradesh.
- **Watershed area:** Its total watershed area is **1956.3 sq. km**.
- **Tributary of:** It is the tributary of **Yamuna River**.
- **Importance:** The river is a lifeline for **Chitrakoot and nearby areas**, with nearly **70 per cent of residents**

depending on it.

- Chitrakoot is well known for its close association with epic, the **Ramayana**.
- **Overflooding:** Recently, Chitrakoot has been badly affected by heavy rainfall, causing the Mandakini River to overflow.
 - Important religious places, including **Arogyadham, Gupt Godavari and the Satib Anusuya area**, have also been affected by the rising water.

Integrated Fertilizer Management System (iFMS)

News: The Integrated Fertilizer Management System (iFMS) has entered a new phase with digital initiatives to strengthen transparency and fertilizer supply-chain monitoring.

About Integrated Fertilizer Management System (iFMS)



Source – PIB

- **Integrated Fertilizer Management System (iFMS)** is a digital platform that tracks fertilizer production, imports, movement, stocks, sales and subsidy.
- **Developed by:** The National Informatics Centre (NIC) developed and provides technical support for iFMS for the Department of Fertilizers.
- **Aim:** Its aim is to **improve fertilizer availability, strengthen transparency and enable data-driven monitoring and decision-making.**
- **Key Features:**
 - **Wide Coverage:** It covers **more than 14 crore Aadhaar-linked fertilizer buyers, over 2.5 lakh retailers** and around **7 crore metric tonne fertilizer sale transactions annually.**
 - **Subsidy Management:** The system supports **administration of fertilizer subsidy of nearly ₹2 lakh crore annually.**
 - **Digital Monitoring:** New **dashboards** provide a **consolidated view of production, imports, dispatches, movement, stocks and retail sales** at national, State, district and retailer levels.
 - **Data Analytics:** It enables **analysis of fertilizer purchases across buyer categories, landholdings, crops, districts** and fertilizer types to **identify consumption patterns.**
 - **Farmer and Agricultural Data:** **Integration with Meri Fasal Mera Byora (MFMB) and AgriStack** help **link fertilizer transactions with farmer, land and crop information.**

PM e-Bus Sewa Scheme

News: More than 500 electric buses are operational across 23 cities, with daily ridership crossing one lakh under PM e-Bus Sewa.

About PM e-Bus Sewa Scheme



Figure 19. Source – PIB

- **PM-eBus Sewa Scheme** is a scheme to **strengthen the urban transport system** by deploying **10,000 air-conditioned electric buses** in eligible cities.
- **Implementing Agency:** It is being implemented by the **Ministry of Housing and Urban Affairs (MoHUA)**.
- **Launched in:** It was **launched in August 2023**.
- **Duration:** The scheme will **support bus operations for 10 years**.
- **Key Features:**
 - **Central Assistance:** The scheme **provides ₹20,000 crore in Central Assistance** for bus operations and deployment under the scheme.
 - **Execution Model:** Bus operations will follow the **Public-Private Partnership (PPP) model**.
 - **States or cities will run services and make payments to bus operators.**
 - **Eligibility:**
 - **Demographics:** The scheme covers cities with a population between 3 lakh and 40 lakh, as per

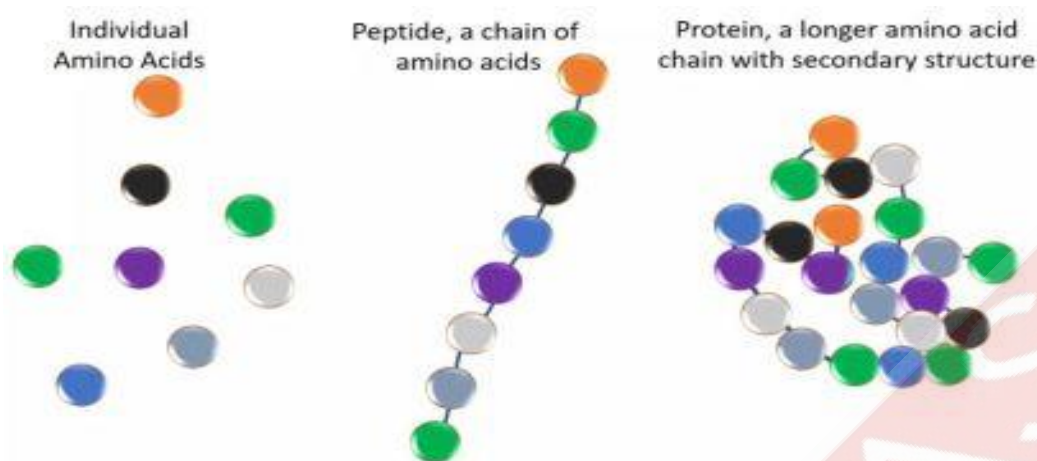
Census 2011.

- **Special Geographies:** It includes all capital cities of Union Territories, the North-Eastern Region, and Hill States, even if their population is below 3 lakh.
- **Two Segments:** Segment 1 covers 169 cities with 10,000 e-buses and infrastructure.
 - Segment 2 covers 181 cities through green urban mobility initiatives.
- **Infrastructure:** The scheme covers depots, charging infrastructure, substations, bus priority, multimodal interchange facilities, and automated fare collection systems.
- **Passenger Facilities:** It includes accessible bus stops, last-mile connectivity, Intelligent Transit Management System (ITMS), National Common Mobility Card (NCMC)-based ticketing, wheelchair provisions, and CCTV cameras.

Peptides, Proteins and Hormones

News: Bengaluru's first "Peptide Party" was cancelled after more than 200 registrations for around 50 places, highlighting the growing peptide craze.

About Peptides, Proteins and Hormones



Source – ScienceDirect

- **Amino acids:** Amino acids are the **basic building blocks of peptides and proteins**.
 - There are **20 different amino acids** that combine in various sequences to form proteins.

Key Differences

Basis	Peptides	Proteins	Hormones
Structure	● Peptides are relatively short chains of amino acids, generally containing 2–50 amino acids.	● Proteins are larger chains, generally containing 50 or more amino acids, with more complex folded structures.	● Hormones can be proteins, steroids or amino acid derivatives.
Production	● Peptides are naturally found in the body and can also be synthesized.	● Proteins are formed from amino acids and perform diverse functions.	● Hormones are produced by endocrine glands and specialised cells or tissues.
Function	● Peptides often act as signalling molecules and regulate biological functions. ● They can also help reduce inflammation.	● Proteins help in building tissues, transporting molecules and supporting immune responses.	● Hormones act as chemical messengers, carrying signals between cells and organs.

	and build muscle.		
Hormonal role	Some peptides work like hormones and can affect different parts of the body from where they are released.	Some proteins can function as hormones.	“Hormone” describes the chemical messenger role, rather than one particular molecular structure.
Therapeutic use	Some peptides, such as insulin and semaglutide, are established medicines.	Proteins are used in therapies such as enzyme replacement and monoclonal antibody therapy.	Hormone therapy may involve synthetic or bioidentical hormones.

Mission Rangeen Machhli 2031

News: India's Vice President, C. P. Radhakrishnan, has released the “Mission Rangeen Machhli 2031” Strategic Action Plan for Ornamental Fisheries Development at Agatti, Lakshadweep.

About Mission Rangeen Machhli 2031



Figure 20. Source – PIB

- **Mission Rangeen Machhli 2031** is a **Strategic Action Plan** for **Ornamental Fisheries Development** aimed at **organising India's ornamental fisheries sector**.

- **Nodal Ministry:** It is being organized by the **Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India**.

- **Objective:** Its objective is to **provide a uniform and scientific framework** for **managing ornamental fisheries** and **improving production, product quality, biosecurity, certification and market access**.

- **Key Features:**

- **Uniform framework:** It will **establish common practices** for **scientific management, biosecurity, quality assurance** and **regulatory compliance** across the **ornamental fisheries value chain**.
- **Standardised practices:** **Standard Operating Procedures** will **cover broodstock management, breeding, hatchery operations, quarantine, fish health, traceability, handling, transportation and trade**.

- **Better market opportunities:** The plan will **improve product quality and biosecurity standards**, while supporting certification and access to domestic and international markets.
- **Sustainable growth:** It will **support an organised and globally competitive ornamental fisheries sector**, creating **livelihood opportunities** while **conserving marine ecosystems**.
 - India's fisheries sector **supports about 50 lakh fishers** and **exported seafood worth ₹73,890 crore in FY 2025-26**.