Factly Weekly

Compilation

2026

For UPSC CSE Prelims Exam

1st Week

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INDEX

Ceuta and Melilla

News: Thousands of migrants who risked their lives to enter Spain's North African enclave of Ceuta from Morocco turned back almost as quickly as they arrived.

About Ceuta

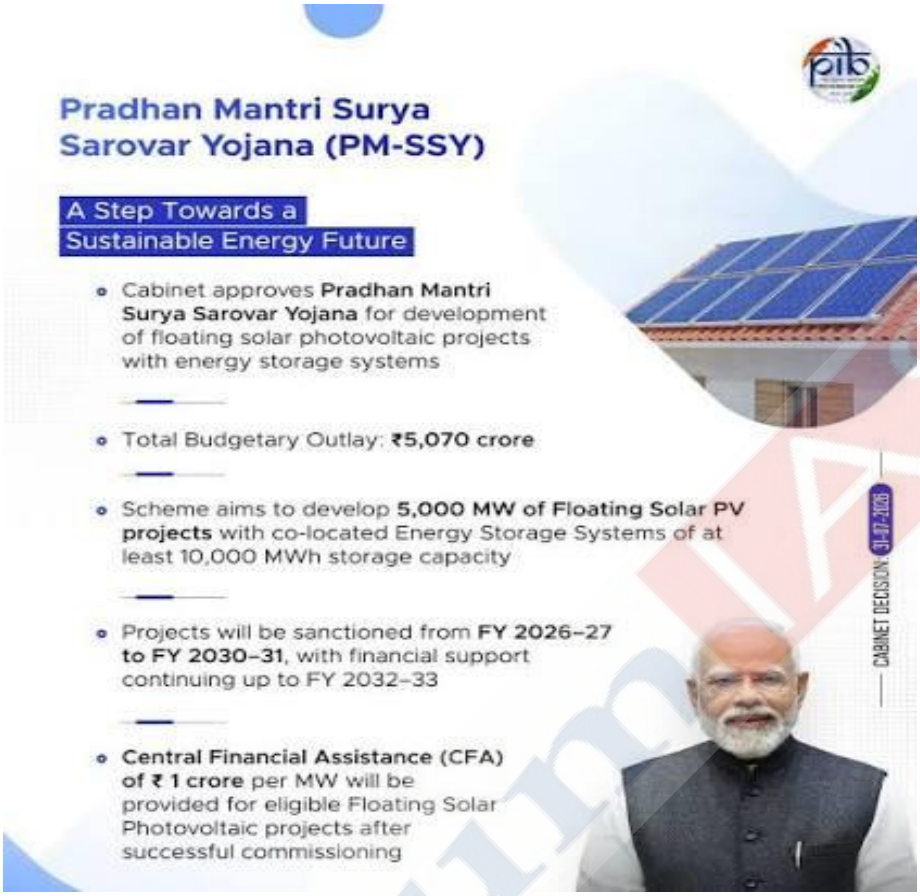
Source – Britannica

- **Location: Ceuta** is a **small autonomous Spanish city** and **exclave** located on the **northern coast of Africa, bordered directly by Morocco**.
- It forms the **European Union's only shared land border** with **mainland Africa,** along with the **nearby city of Melilla.**
- It spans roughly **19 sq. km. at the Mediterranean entrance** to the **Strait of Gibraltar.**
- **Governance:** Administered as an **autonomous city of Spain**.
- **The Border Barrier:** The city is **separated from Morocco** by a heavily secured **double fence** equipped with **barbed wire** and modern **detection systems.**

Pradhan Mantri Surya Sarovar Yojana (PM-SSY)

News: The Union Cabinet chaired by the Prime Minister Shri Narendra Modi approved the 'Pradhan Mantri Surya Sarovar Yojana (PM-SSY)'.

About Pradhan Mantri Surya Sarovar Yojana (PM-SSY)



Source: PIB

- It is a **scheme for the development of Floating Solar Photovoltaic (FSPV) Projects** with Energy Storage Systems (ESS).
- **Aim:** It aimed at **accelerating floating solar power by providing central financial assistance of up to ₹1 crore per MW for projects installed** on reservoirs and other water bodies.
    - It is also designed **to address two of the biggest constraints** facing ground-mounted solar projects: **acquiring large contiguous parcels of land and the rising costs associated with rehabilitation and resettlement.**
- **Budget:** It has a total budgetary **outlay of Rs.5,070 crore.**
- **Duration**: It will be **sanctioned during FY 2026-27 to FY 2030-31**, with disbursement of financial support continuing up to FY 2**032-33.**
- **Target:** It targets **5,000 MW of floating solar capacity by 2030-31.**
- **Coverage: All States and Union Territories** will benefit through this scheme.
- **Nodal Ministry:** Nodal ministry for the scheme is **Ministry of New and Renewable Energy.**
- **Implementing agency:** It is to be implemented by the **Solar Energy Corporation of India.**
- **Features:**
    - It envisages the **development of 5,000 MW of Floating Solar Photovoltaic projects** with co-located Energy Storage Systems having a minimum **storage capacity of two hours i.e.,10,000 MWh.**
    - Under the scheme, **Central Financial Assistance (CFA) of Rs. One crore per MW will be provided for eligible Floating Solar Photovoltaic projects** after successful commissioning.

- Additionally, **CFA of up to Rs.50 lakh per project will be available for undertaking feasibility studies,** including bathymetry and hydrography assessments, environmental studies, and other preparatory activities required for de-risking the project development.

- **Expected outcome:**
  - It would enhance the **floating Solar PV capacity in the country by 5,000 MW,** which is presently around 700 MW only.
  - These projects would **provide an opportunity to gainfully utilize existing reservoirs & industrial ponds,** and eliminate competition for scarce land resources.
  - The **integration of an energy storage system** will help strengthen grid reliability. The scheme would help in the **reduction of around 10 million tonnes of CO_2 emissions annually.**
  - It would help in the **generation of approximately 16,000–17,000 full-time equivalent employment opportunities** across the project value chain.
  - It would also **promote domestic manufacturing of floatation systems as well as the entire value chain of the projects**, like PV cells, modules, energy storage systems, etc., and support the vision of Aatmanirbhar Bharat.
  - It will contribute **to renewable energy capacity addition, support the achievement of national energy and climate objectives,** and facilitate **optimal utilisation of water resources.**

Deep Submergence Rescue Vessel (DSRV) NIPUN

News: Recently, 'Deep Submergence Rescue Vessel (DSRV) NIPUN was delivered to the Indian Navy at Visakhapatnam.

About Deep Submergence Rescue Vessel (DSRV) NIPUN

- 'Nipun' is the **second Diving Support Vessel (DSV).**
- **Bult by: It was built by Hindustan Shipyard Limited** was delivered to the Indian Navy in **2026.**
- It **draws her name from Sanskrit signifying 'one who is adept, capable, and well versed in a particular discipline'**.
- **Features:**
  - It is **highly specialised and is capable of undertaking deep sea dive operations** and **rescue operations at sea.**
  - It is **installed with state-of-the-art Dive Equipment** and has capability to undertake **Deep Sea Saturation Diving.**
  - A side diving stage has also been provided for undertaking **Diving Operations.**
  - Its **operational capabilities are further enhanced by Remotely Operated Vehicles (ROVs),** which facilitate **diver monitoring, underwater inspection, and salvage missions.**
  - It would also **serve as the Mother Ship for the Deep Submergence Rescue Vessel (DSRV)**, to evacuate personnel in case of an emergency in a submarine.

About Deep Submergence Rescue Vessel (DSRV)

- A diving support vessel (DSV) is a **specialised ship used as a floating base** for professional underwater work, deep-sea salvage and submarine rescue operations.
- It feature **advanced dynamic positioning, saturation diving systems and deployment gear** for remotely operated vehicles.

- India's **first indigenously designed and constructed diving support vessel was INS Nistar,** which was commissioned in 2025.

Alaknanda River

News: The Alaknanda River at Rudraprayag has crossed the warning level due to continuous rainfall, prompting authorities to issue a high alert.

About Alaknanda River

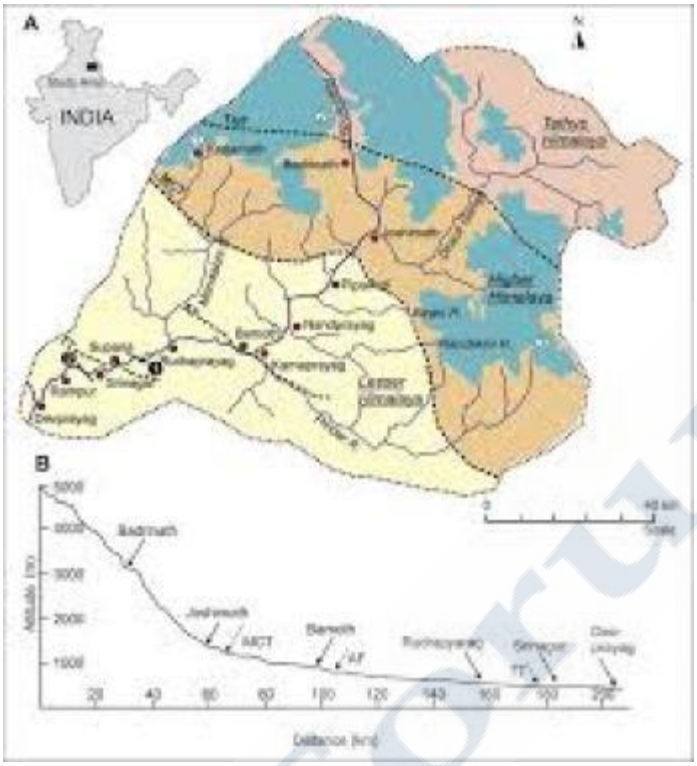


Figure 1. Source: Research Gate

- The Alaknanda is a **Himalayan river** of **Uttarakhand** and the **major river of Northern India.**
- **Origin and course of river:** It originates from the **snouts of the Satopanth and Bhagirathi Kharak glaciers**, descending from the **Chaukhamba massif in Chamoli district of Uttarakhand.**
  - From there it flows for about **195 km through Chamoli, Rudraprayag, Pauri Garhwal, and Tehri Garhwal districts in Uttarakhand.**
  - It meets the **Bhagirathi River at Devprayag (Tehri Garhwal district),** from whence the **river is known as 'Ganga'.**
- **Basin area:** Alaknanda River basin **spans an area of about 10,882 km.**
  - The basin falls under the **Trans-Himalaya, Himalaya and Gangetic Plain biogeographic zones.**
- **Protected area along the basin: Valley of Flowers National Park and Nanda Devi National Park, both UNESCO World Heritage Sites** situated in the **Alaknanda River basin.**
- **Tributaries:** Its major tributariesare the **Dhauliganga, Nandakini, Pindar, Mandakini and Saraswati.**
- **Tributary of:** It is a tributary of the **Ganga River.**
- **Religious significance:** According to Hindu mythology, **it is considered one of the sacred streams that formed when the celestial Ganga descended to Earth**, and was divided by **Lord Shiva's (one of the three supreme Hindu deities) matted locks.**
  - **'Panch Prayag' are the five sacred confluences along the Alaknanda River,** where it is joined by its major tributaries.
    - In chronological order, **these are Vishnuprayag (with the Dhauliganga), Nandaprayag (with the Nandakini), Karnaprayag (with the Pindar), Rudraprayag (with the Mandakini), and Devprayag** (with the Bhagirathi, after which the river is known as the Ganga).

- **Dham situated on river: Badrinath Dham,** situated along the Alaknanda River, is one of the Char Dham pilgrimage sites **established by Adi Shankaracharya.**

- **Dams on the river:** There are many operational dam and Hydro Electric projects in the Alaknanda basin namely T**apovan, Tharali, Vishnuprayag, Srinagar et**c.

Samudra Manthan (Natiponal Offshore Exploration Scheme)

News: The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has approved 'Samudra Manthan (National Offshore Exploration Scheme).

About Samudra Manthan (National Offshore Exploration Scheme)

Source: Ministry of Petroleum and Natural Gas

- Samudra Manthan is a **comprehensive initiative** to **accelerate offshore oil and gas exploration and production across the entire exploration value chain.**
- It adopts an i**ntegrated approach to accelerate offshore hydrocarbon exploration** and production.
- **Aim:** It aims **to increase India's domestic oil and gas production from around 62 MMTOE to 80 MMTOE annually** and **expand the country's hydrocarbon resource base from 1.6 billion TOE to 2.2 billion TOE.**
  - **Note:** The additional production has the potential to reduce crude oil imports by nearly ₹1 lakh crore annually, strengthening India's energy security and reducing import dependence.
- **Nodal Ministry: It is** a **Central Sector Scheme of the Ministry of Petroleum & Natural Gas.**
- **Budget outlay:** It has an approved outlay of **Rs.84,084 crore.**
- **Implementation Duration:** It has implementation during up **to FY 2030–31.**
- **Features: The scheme includes:**
  - **Large-scale acquisition, processing and interpretation** of high-quality seismic data.

- **Accelerated exploratory drilling in deepwater** and ultra-deepwater areas.
- **Scientific drilling** in frontier sedimentary basins.
- **Development of common offshore production** and evacuation infrastructure.
- **Establishment of an integrated Oil & Gas Manufacturing** and Services Zone.
- Dedicated provisions for **digital programme management, capacity building, technology adoption, stakeholder engagement** and international outreach.

- **Key Components of the scheme:**
  - Acquisition and processing of modern offshore seismic data
  - Drilling of 60 deepwater exploration wells
  - Development of common offshore infrastructure hubs to facilitate commercialisation of discoveries; and
  - Establishment of Oil and Gas Manufacturing and Services Zones to promote domestic manufacturing and localisation of critical equipment and services
- **Expected outcomes:**
  - **Reserve accretion of over 600 Million Metric Tons of Oil Equivalent** (MMTOE).
  - Significant **increase in offshore exploration and domestic oil and gas production** and development of a globally competitive ecosystem for offshore technologies and services.
  - **Increased investments across the exploration and production value chain**, driving innovation and long-term economic growth.
  - The scheme is **expected to enhance India's long-term energy security by unlocking offshore energy resources,** strengthening technological capabilities and creating sustainable economic value.
  - **Large-scale employment generation and strengthening of indigenous manufacturing** under the Make in India and Atmanirbhar Bharat initiatives.

Madura Island

News: At least five people died and 41 remained missing after a passenger ferry caught fire near Indonesia's Madura Island during its voyage.

About Madura Island

Source – ResearchGate

- **Location:** Madura Island is an **Indonesian island** in the **Malay Archipelago**, located off the **northeastern coast of Java.**
- **Separation:** Madura Island is **separated from Java** by the **narrow Madura Strait** and forms **part of East Java Province**
- **Connectivity:** Madura is **connected to Java by the Suramadu Bridge, the longest bridge in Indonesia.**
- **Geography:**
    - **Topography:** The island is **mostly lowland with a relatively flat and undulating surface,** making it warmer and drier than mainland East Java.
    - **Geology:** Madura is part of the **northern limestone mountains of Java and has lower, rougher, and rounder limestone hills.**
- **Soil:** The soil is **generally dry and infertile.**
- **Climate:** The climate **resembles eastern Java,** but the **island is warmer and drier because it is closer to the equator**.
- **Key Features:**
    - **Salt Island:** Madura is **known as Pulau Garam (Salt Island)** because of its historically large-scale salt production.
    - **Bull Racing:** Madura is **renowned for Karapan Sapi,** a traditional bull racing competition that features decorated cattle and attracts large crowds.
    - **Administrative Division:** Madura is **administered as part of East Java Province** and is **divided into Bangkalan, Sampang, Pamekasan, and Sumenep regencies.**

Pellet Guns

News: The Supreme Court examined petitions on pellet gun use after students and workers suffered serious injuries during a crowd-control incident in Delhi.

About Pellet Guns

Source – TH

- **Pellet guns** are **12-bore pump-action shotguns** classified as **less-lethal kinetic projectile weapons** used for **crowd control and dispersal.**
- **Working Mechanism:**
    - **Loading:** A **cartridge containing hundreds of small pellets** is loaded into the pellet gun before firing.
    - **Firing Process:** When the trigger is pulled, the **propellant inside the cartridge burns and produces high-pressure gases that push the pellets through the barrel**.
    - **Pellet Dispersion:** After leaving the barrel, the **pellets spread over a wide area** instead of travelling as a single projectile.
        - This wider spread makes the exact point of impact of each pellet difficult to control.
- **Key Features of Pellet Guns:**
    - **Wide Pellet Spread:** A single 12-bore cartridge releases about 500 pellets that spread across a wide area after leaving the barrel.
    - **Less-Lethal Design:** Pellet guns are intended to disperse violent crowds **without causing immediate fatalities**, but they **can cause serious injuries at close range.**
    - **Variable Ammunition:** They can **fire metal, rubber, or plastic pellets** according to operational requirements and force escalation protocols.

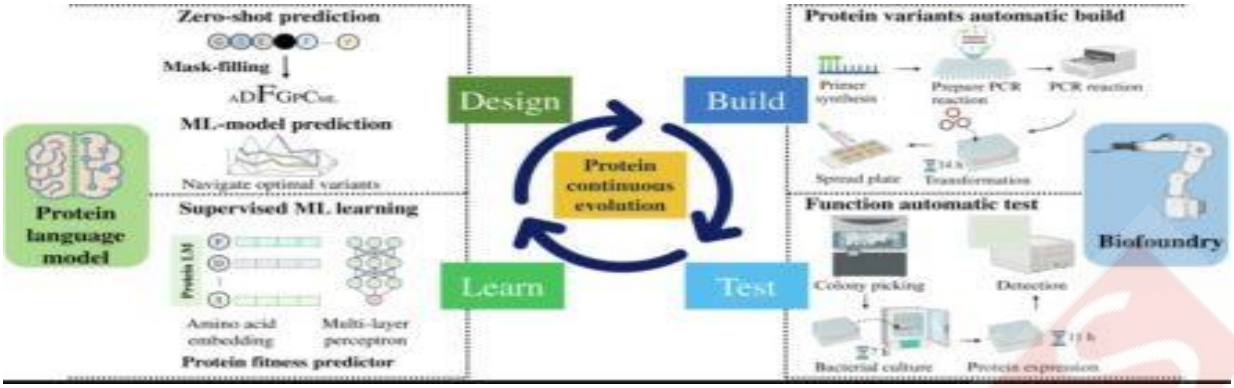
Pellet Guns in India

- **Manufacturing:** Pellet gun ammunition **used by security forces** in India is associated with **production at the Ordnance Factory, Ishapore.**
- **Protocols:** Pellet guns must be **used only as a last resort after other non-lethal methods fail.**
    - Security personnel **must follow graded force** and, **as far as practicable, aim below the waist** while using minimal force.
- **Operational Deployment:** The Union Government **introduced pellet guns in 2010 as a less-lethal crowd-control option.**
    - They were **first used by the Jammu and Kashmir Police** in Sopore and **later adopted by the CRPF and Rapid Action Force (RAF).**
- **Use in Public Order:** Pellet guns have been used **during crowd-control operations in Jammu and Kashmir** and have also been **reported in Manipur in 2023** and the **Punjab-Haryana farmers' protests in 2024.**
- **Indigenous Alternative:** Following concerns over pellet gun injuries, **India developed plastic bullets through the DRDO's Terminal Ballistics Research Laboratory (TBRL), Chandigarh**, as a **safer alternative to metallic pellets.**

Protein Language Models (pLMs)

News: Scientists at Duke University developed Raygun, an AI system that can shrink, enlarge, and extensively rewrite proteins, and published the study in Nature on July 29.

About Protein Language Models (pLMs)



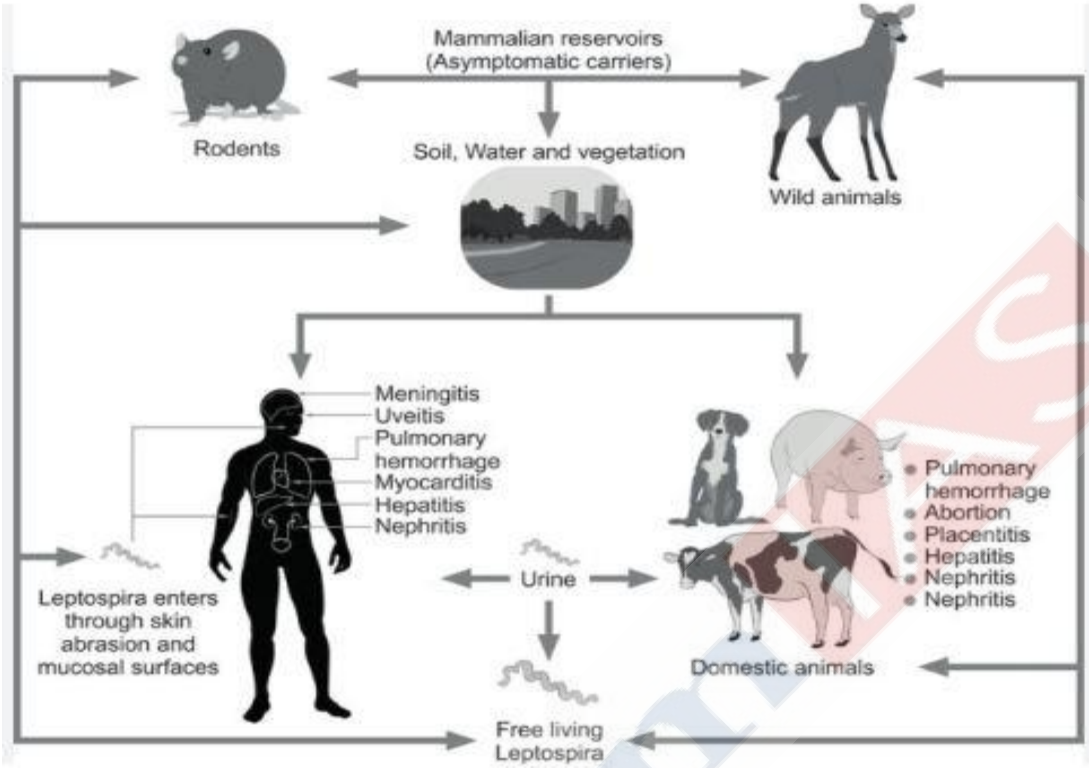
Source – ScienceDirect

- **Protein Language Model (pLM)** is a **special type** of **artificial intelligence** that **studies protein sequences** to **understand their structure and function.**
- **Core Analogy:**
    - **Proteins as Sentences:** A pLM **treats amino acids as words** and a **protein sequence as a sentence** to **understand biological information.**
    - **Learning Biological Grammar:** The model **learns the grammar and syntax of protein sequences by studying large collections** of protein sequences from many organisms.
    - **Language-Based Prediction:** The model **predicts a missing amino acid in a sequence.**
        - just as language models predict the next word in a sentence. Just as a language model learns that "The cat sat on the ___" should be completed with "mat" or "chair" (not "economic").
    - **Linking Sequence and Function:** The learned patterns **help the model connect protein sequences with their structure and biological function.**
    - **Learning Without Rules:** The **model discovers these patterns automatically** without being explicitly taught biological rules.
- **Key Applications of pLMs:**
    - **Protein Structure and Function:** The model **predicts a protein's three-dimensional structure, stability, binding ability, and role in the cell**, helping scientists understand mutations.
    - **Protein Design:** The model **designs new proteins** with desired properties, **including enzymes for plastic waste, biofuel production, and therapeutic proteins.**
    - **Medicine:** The model **speeds up drug discovery** and **supports personalized medicine** by explaining how genetic variations affect protein function.
    - **Biotechnology:** The model helps **develop better enzymes, sustainable materials, advanced diagnostic tools, and improves industrial manufacturing processes.**

Leptospirosis

News: Leptospirosis cases and mortality begin surging with the arrival of the southwest monsoon in Kerala.

About Leptospirosis



Source – ResearchGate

- **Leptospirosis** is a **tropical zoonotic disease.**
- It is also commonly known as "**rat fever" or "flood fever."**
- **Causing bacteria:** It is caused by the **bacterium Leptospira** that can be found in **contaminated water or soil.**
- **How it spreads:** It is caused **by the Leptospira bacteria,** which is **spread through the urine of infected animals such as rodents, cattle, dogs and cats**.
    - During the monsoon, **contaminated urine and animal waste mix with floodwater and mud, allowing the bacteria to enter the body** through even small cuts, abrasions or cracked skin.
- **Transmission:**
    - It **impacts both humans and animals.**
    - It rarely **transmit from Person-to-person.**
    - **Note:** In India, it began to be reported in **Kerala since 1989 and** has been endemic in the State for the past three decades or more. It has **now become the communicable disease with the highest mortality profile.**
- **Symptoms**: Common symptoms of leptospirosis include **high fever, severe headache, chills, muscle pain, and vomiting.** Other symptoms are **jaundice, red eyes, abdominal pain, diarrhoea, and skin rashes.**
    - If left untreated, it can lead to **serious complications such as kidney damage, meningitis**, liver failure, respiratory distress, and, in severe cases, death.
- **Treatment:** It is treated with antibiotics. In severe cases, patients may require **intravenous (IV) antibiotics** to effectively manage the infection and prevent complications.

- **Prevention:**
    - It is a**dvised to wear waterproof footwear in flooded areas** and **wash and dry feet** thoroughly after exposure.
    - **Clean and cover cuts o**r wounds promptly.
    - **Control rodent**s and maintain hygiene.
    - **Drink safe wate**r, especially after floods.

Pseudecheneis likimroensis and Likimro River

News: A new catfish species, Pseudecheneis likimroensis, has been discovered in Nagaland's Likimro River and described in the Journal of Ichthyology.

About Pseudecheneis likimroensis

Source – Mongabay

- **Pseudecheneis likimroensis** is a newly discovered **catfish species** named after the fast-flowing **Likimro River of Nagaland**, where it was first collected.
- **Local name:** The fish is **locally known as Nupedro.**
- **Location:** It was **discovered in the Likimro River in Kiphire district, Nagaland**, along the India–Myanmar border.
- **Discovery:** Researchers **from Kohima Science College and the Zoological Survey of India** identified the species.
- **Key Features of Pseudecheneis likimroensis:**
    - **Rheophilic Nature**: It belongs to a **rheophilic genus of catfishes** that is **adapted to life in swiftly flowing hill streams.**
    - **Body Adaptation:** It has a **dorso-ventrally flattened body** that helps it **survive in fast-flowing mountain streams.**
    - **Adhesive Structures:** It possesses **specialised adhesive organs with ridges separated by grooves** that **enable it to cling to rocks in strong water currents.**
    - **Feeding Habit:** It is **carnivorous and feeds on insects, larvae, and other organisms attached to rocks.**
    - **Physical Size:** The holotype measured about 11.53 cm, while the **largest recorded specimen measured about 13.19 cm.**

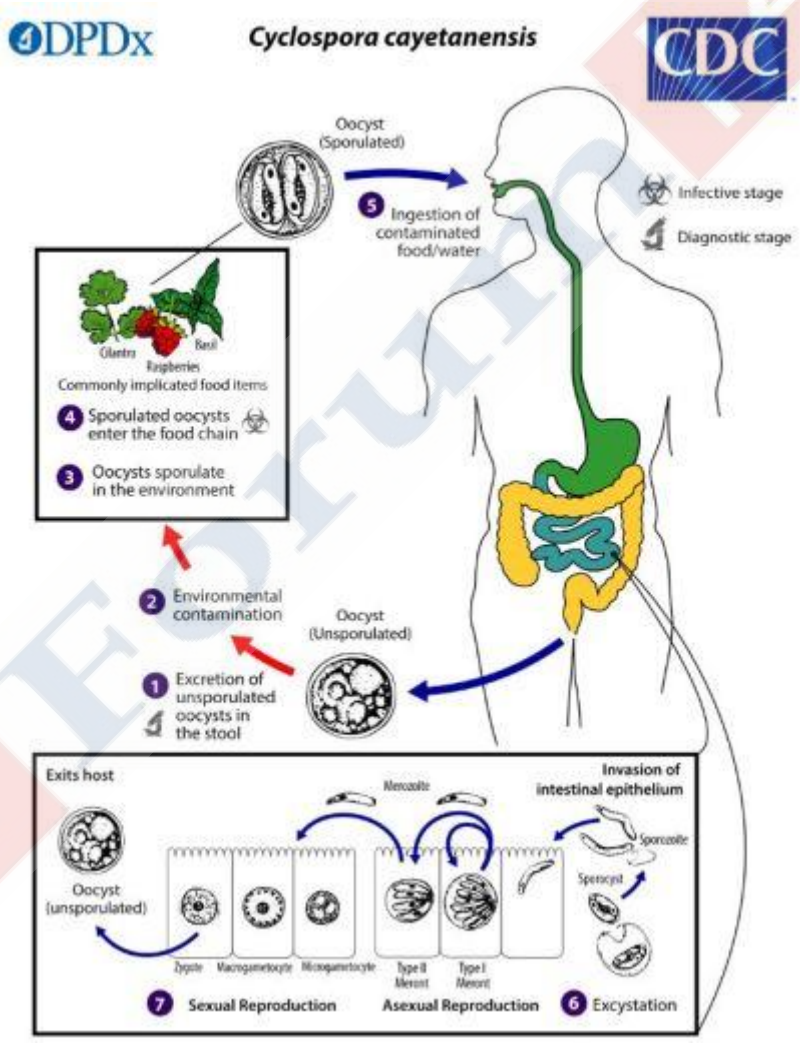
About Likimro River

- **Likimro River** is a **fast-flowing mountain river** that supports **rich freshwater biodiversity.**
- **Location:** It flows through the **eastern part of Kiphire district in Nagaland.**
- **Origins:** The river **originates near Mount Saramati**, the highest peak in Nagaland.
- **Tributary:** It is a **tributary of the Tizu River,** which **later joins the Chindwin–Irrawaddy river system in Myanmar.**
- **Nature:** The river has **pristine water** with **many boulders and rocky stretches,** making it suitable for hill-stream fishes.

Cyclosporiasis

News: The U.S. is investigating a major cyclosporiasis outbreak linked to contaminated lettuce, with Michigan reporting over 11,000 cases and two deaths.

About Cyclosporiasis



Source – CDC

- **Cyclosporiasis** is **a foodborne intestinal illness.**
- It is caused **by Cyclospora cayetanensis, a microscopic coccidian protozoan parasite.**

- **Mode of Transmission:** The infection spreads **through the faeco-oral route** by **consuming food or water contaminated with faeces.**
    - It does **not spread directly from person to person.**
- **Symptoms:** Watery **diarrhoea**, fatigue, weight loss, stomach cramps, and dehydration are common symptoms.
- **Impacts:**
    - Untreated infection **may persist for weeks and cause hospitalization due to dehydration.**
    - It may lead to **malabsorption** (reduced absorption of nutrients by the intestine), **cholecystitis** (inflammation of the gallbladder), and **reactive arthritis** (joint inflammation).
- **Treatment:** Confirmed cases are treated with the **antibiotic trimethoprim-sulfamethoxazole (TMP-SMX) for 7–10 days**, along with **aggressive hydration.**
    - People living with **HIV may require longer treatment.**
- **Prevention:**
    - **Food Safety: Cooking temperature at 70°C, wash fruits and vegetables** thoroughly under clean running water, and discard the outer leaves of leafy vegetables before eating.
    - **Hygiene:** Maintain **strict hand hygiene,** as **chemical sanitisation alone may not completely eliminate** the Cyclospora parasite.
- **Vulnerable Groups: Children, older adults, immunocompromised people**, and people with underlying health conditions face a higher risk of severe illness.

Nitrosamines as Hidden Carcinogens

News: Nitrosamines have gained attention because they are hidden chemicals present in foods, water, pharmaceuticals, and tobacco that are linked to cancer risk.

About Nitrosamines as Hidden Carcinogens

Source – DTE

- **Nitrosamines** are **organic compounds** that **contain alkyl and an aryl group** with the following **nitrogen and oxygen group: N–N=O.**
- **Formation:** They are formed when **amines react with nitrites or nitrates** under conditions such as **high temperature, acidic environment, or the presence of oxidizing agents.**
- **Major Sources of Exposure:**
    - **Food & Beverages: Fried, grilled, cured, and processed** meats are the major dietary sources.
        - They are also found in **processed fish, cocoa, beer, and other alcoholic drinks.**
    - **Water Contamination:** Nitrosamines form **during water disinfection and wastewater treatment.**
        - **NDMA (N-nitrosodimethylamine)** is a **potent carcinogen** detected in **drinking water** sources, including India.
    - **Pharmaceuticals & Cosmetics:** Some **medicines and cosmetics may contain nitrosamines.**
    - **Tobacco Products:** Tobacco smoke is an important source of human exposure.
- **Impacts:**
    - **Cancer Risk: Long-term exposure, even at very low concentrations**, is linked to an increased **risk of stomach, colon, pancreatic, and colorectal cancers.**
    - **Other Health Effects:** Nitrosamines can **also cause liver damage, respiratory problems, and reproductive toxicity.**
- **Carcinogenicity:**
    - **Metabolic Activation:** Nitrosamines are **not carcinogenic by themselves.**
        - They become **harmful after cytochrome P450 enzymes convert them into highly reactive compounds.**
    - **DNA Damage: These reactive compounds bind to DNA and form DNA adducts.**
        - This process **causes mutations** that can **initiate the development of cancer.**
    - **Oxidative Stress: During metabolism**, nitrosamines also **generate reactive oxygen species (ROS).**
        - **These damage DNA, proteins, and lipids**, further **promoting the initiation and progression of cancer.**

Key Facts About Uzbekistan

News: India and Uzbekistan have agreed to expand their strategic partnership by strengthening cooperation in critical minerals, mining, trade, energy, infrastructure, defence and education during a recent high-level talks.

Key Facts About Uzbekistan

Source: World Atlas

- **Location:** Uzbekistan is a **landlocked country in Central Asia.**
    - It is also one of **only two doubly landlocked countries in the world (the other being Liechtenstein),** meaning it is surrounded entirely by landlocked nations.
- **Bordering nation: It is the only central located Asian country** that shares direct land borders with **all four other post-Soviet Central Asian states** (Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan), **as well as Afghanistan to the south.**
- **Topography:**
    - Its topography is about **80% sandy, scrubby desert,** including the **massive KyzylKum desert.**
- **Mountains:** Its **southeast and northeast mountains are foothills** and **lower mountains of the Tian Shan Range** are an **extension of the Himalayas.**
- **Valleys:** The **Fergana Valley**, between the northeast and southeast mountain ranges, is the most **desirable agricultural land and climate in all of western Asia.**
    - In the far west, **Uzbekistan is dominated by vast lowlands, the Amu Darya River valley, the Ustyurt Plateau, and the southern half of the Aral Sea.**
- **River:** Significant rivers of Uzbekistan include the **Amu Darya and the Syr Darya.**
- **Lake:** Major lakes include **Lake Ayddrkul and Lake Sarykamish.**
- **Lowest Point:** The lowest point of the country is **Lake Sarykamish.**
- **Highest Point:** Its highest point is **Adelunga Toghi**.

Kamlang Tiger Reserve

News: India added Glaw Lake as Arunachal Pradesh's first Ramsar Site, located within Kamlang Tiger Reserve, raising India's total Ramsar Sites to 101.

About Kamlang Tiger Reserve

Source – India Map

- **Kamlang Tiger Reserve** is a **protected area in Arunachal Pradesh** and forms **part of the Eastern Himalayan Biodiversity Hot Spot.**
- **Location:** It is located in the **southeastern part of Lohit District in** Arunachal Pradesh **near the border with Myanmar.**
- **Bounded by:** It is bounded by **Namdapha National Park in the south,** the **Lang River in the north,** the **Lati River in the west**, and the **Tawe River in the east.**
- **Naming:** It is **named after the Kamlang River**, which flows through the reserve and **joins the Brahmaputra.**
- **Establishment:** It was established as **Kamlang Wildlife Sanctuary in 1989.**
- **Status:** It is the **50th Tiger Reserve of India** and was **declared an Eco-Sensitive Zone (ESZ) in 2024.**
- **Topography:** It includes **dense tropical forests, grasslands, rivers, and hills.**
- **Vegetation:** It has **tropical wet evergreen** forests in the lower areas and **subtropical, temperate, and alpine vegetation** in higher elevations.
- **Flora:** The reserve has **more than 150 tree species** and **49 orchid species**, including **Amoora wallichii, Gmelina arborea, Terminalia chebula, and Canarium resiniferum.**
- **Fauna:** It supports **tigers, snow leopards, clouded leopards, leopards, elephants, hoolock gibbons, slow lorises, giant squirrels, flying squirrels, hornbills, deer, wild boar, and other wildlife.**
- **Indigenous Community:** The **Mishmi, Digaro Mishmi, Miju Mishmi, Hishmi, Digaru, and Mizo communities** live around the reserve.

Ujh Multipurpose Project

News: The status and phased implementation roadmap of the Ujh Multipurpose Project (MPP) has been reviwed in Kathua district of Jammu & Kashmir.

About Ujh Multipurpose Project

Source: New Indian Express

- It is a **multipurpose**(Hydropower, Irrigation and Drinking) **River valley scheme** and is first of i**ts kind in Jammu and Kashmir.**
- **Associated river:** The proposed project is on the **River Ujh,** which is one of the main **tributaries of River Ravi.**
- **Generation capacity**: It is designed to generate around **186 MW to 212 MW of electricity.**
- **Features:**
    - It is expected to **provide irrigation to nearly 90,000 hectares of agricultural land** in **Kathua and Samba districts** of Jammu & Kashmir and Pathankot and **Gurdaspur districts of Punjab.**
    - The project will **also supply drinking wate**r to Kathua district and provide industrial water availability.
    - The project is **expected to strengthen agricultural productivity, improve water security,** create new opportunities for economic development and contribute to the overall socio-economic progress of the Union Territory.
    - It also has a**n important security and border-management dimension** and is **backed by the Ministry of Home Affairs** to restrict unregulated water flows and plug vulnerable cross-border infiltration routes along the riverbed.

Phoenix Species Project

News: The Phoenix Species Project was launched as a global initiative with a $200 million commitment to recover 100 highly threatened species.

About Phoenix Species Project

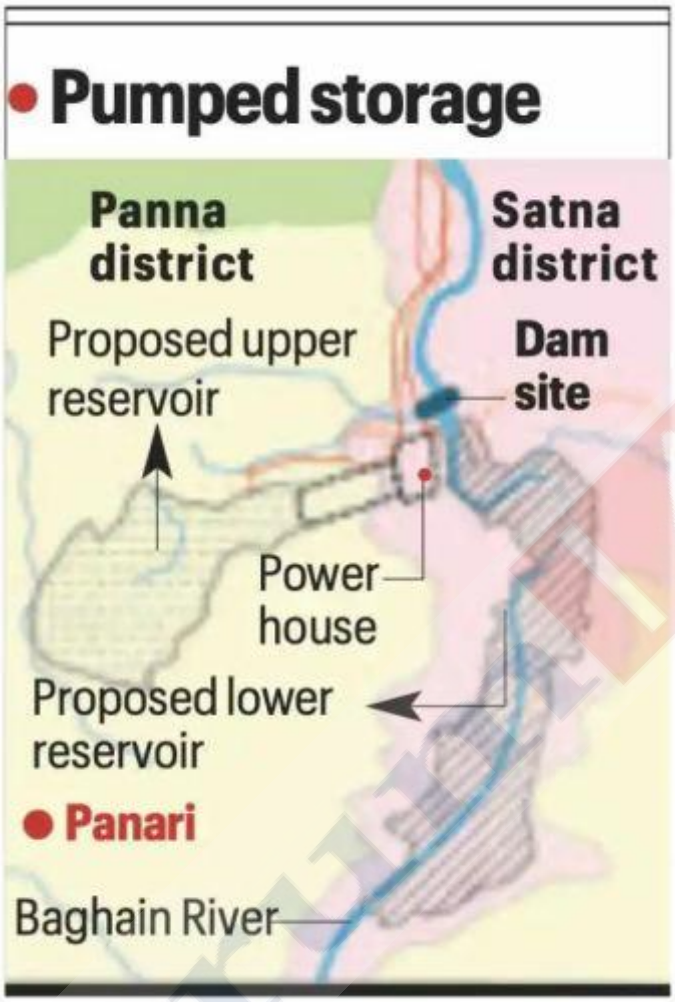
Source – Al Dia News

- **Phoenix Species Project** is a **global initiative to recover 100 species** facing imminent extinction **across different countries and habitats.**
- **Launched by:** The project was launched **Leonardo DiCaprio's Re:wild** and **the Bezos Earth Fund,** with support from, **Age of Union and the Todd Graves Family Foundation.**
- **Partners:** The project works with the **IUCN Species Survival Commission** as the **global knowledge partner.**
- **Funding:** The initiative begins with a **$200 million commitment**, making it the **largest single philanthropic initiative dedicated only to recovering threatened species.**
- **Target Categories:** The project focuses on **species listed as Critically Endangered (CR) or Extinct in the Wild (EW) on the IUCN Red List.**
- **Species Coverage:** The project covers **mammals, amphibians, reptiles, birds, fish, invertebrates, and plants across diverse habitats.**
- **Recovery Measures:** It supports **conservation breeding, head-starting, translocations, disease management, non-native species control, and habitat restoration.**
- **Collaborative Approach:** Recovery plans are **tailored to each species and location** through collaborates with Indigenous Peoples, local communities, scientists, conservationists, and governments.

Panari Hydropower Project and Baghain River

News: The Standing Committee of the National Board for Wildlife (SC-NBWL) recommended wildlife clearance for the Panari Pumped Storage Project in the Panna–Ranipur Tiger Corridor.

About Panari Hydropower Project



Source – IE

- **Location:** The project is **located in Satna and Panna districts of Madhya Pradesh**.
- **Objective:** The project aims to **develop a Pumped Storage Project (PSP)** by using **water from the Baghain River** for **recirculating power generation.**
- The project **lies within the Panna–Ranipur Tiger Corridor,** which **connects Panna Tiger Reserve with Ranipur Tiger Reserve.**
- **Capacity:** The project has a **proposed capacity of 1,800 MW (16,200 MWh) with 9-hour storage capacity.**
- **Water Source:** It will utilize the **water from the nearby Baghain River**.
- **Conservation Measures:** The proposal includes **wildlife overpasses, wildlife underpasses, box culverts, road realignment**, a **₹41 crore Wildlife Conservation Plan**, and a **₹49.95 crore Catchment Area Treatment Plan.**

About Baghain River

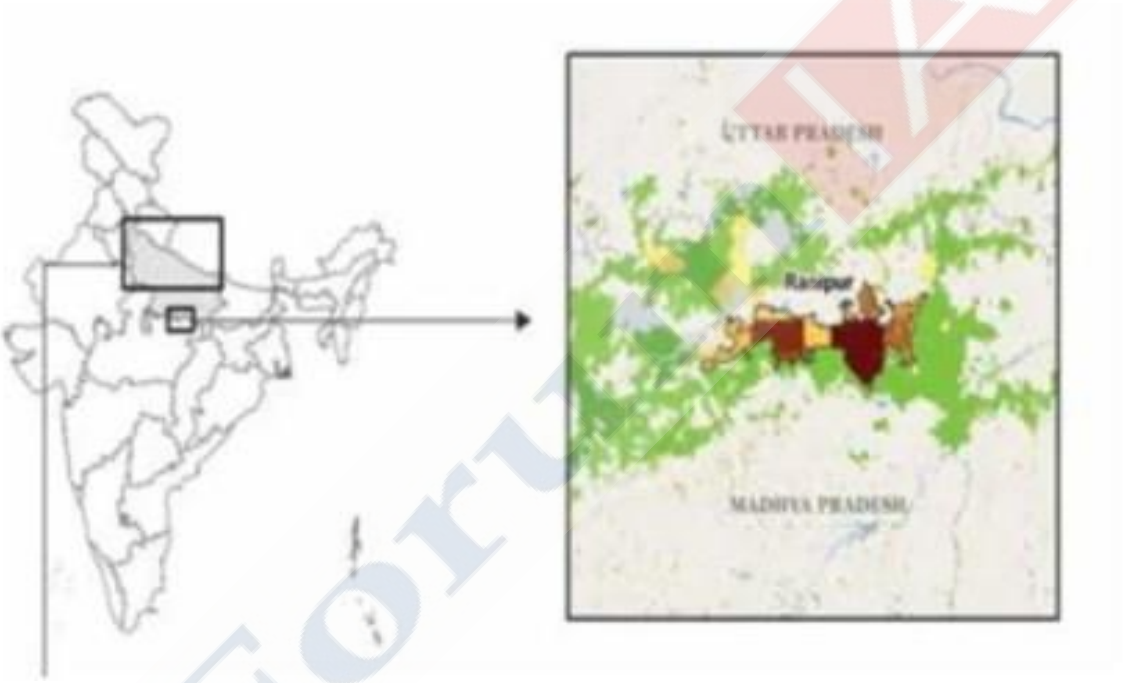
- **Origin:** The river originates **from Panna Hill in Panna (Vindhyan Supergroup) in Madhya Pradesh.**
- **Course:** It flows through the **Bundelkhand plateau and marginal/central Ganga plains.**
- **Confluence:** The river **joins the Yamuna River near Chilla village in Banda district, Uttar Pradesh.**

- **Geological Significance:** The basin includes the **Bundelkhand Gneissic Complex, Vindhyan Supergroup, and alluvial deposits.**
    - It also shows lithological variation, **moderate basin elongation, and moderate to highly permeable and easily erodible alluvial terrain.**
- **Biodiversity:** The river basin **lies within the Panna–Ranipur Tiger Corridor,** which supports the **movement of tigers, leopards, dholes, wolves, sloth bears, gaurs, sambars, and chitals.**

Ranipur Tiger Reserve

News: The SC-NBWL recommended clearance for the Panari Pumped Storage Hydropower Project despite concerns raised over its location in the Panna–Ranipur Tiger Reserve corridor.

About Ranipur Tiger Reserve



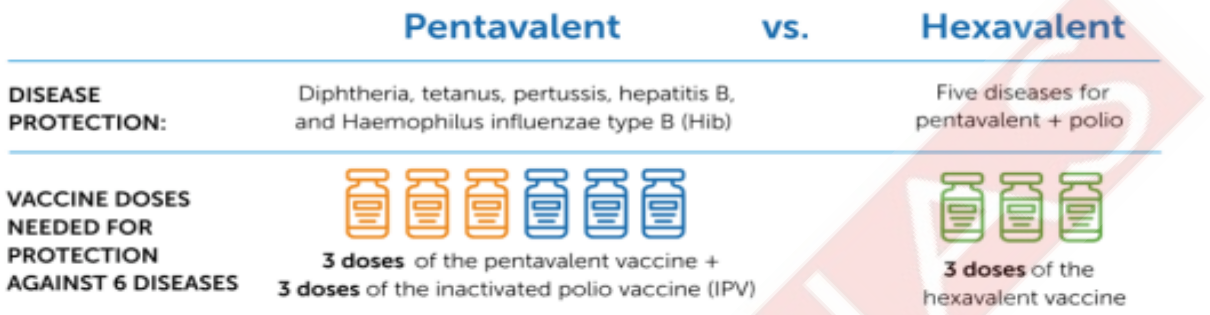
Source: Research Gate

- **Location:** It is located in the **Chitrakoot district of Uttar Pradesh.**
- It is the **fourth tiger reserve of UP, after Dudhwa, Pilibhit and Amangarh** (buffer of Corbett Tiger Reserve).
- **Declared year:** It was declared a **tiger reserve in 2022**.
    - In **1977,** it was established **as a wildlife sanctuary.**
- **Area:** It spans an **area of across 529.89 square kilometres (sq km).**
- **River flowing through: The Betwa and Dhasan rivers** pass through the area.
- **Vegetation:** It has **tropical dry deciduous forests.**
- **Flora:** The area is covered by **dense, deciduous forest** and a variety of vegetation which includes **Tendu, Mahua, Bamboo, Dhak, Gooseberry, Wood Apple, Sal etc.**
- **Fauna: It is home to species such as tigers, leopards, sloth bears, spotted deer, sambhar, chinkara and a number of birds and reptiles.**

Hexavalent Vaccine

News: In a recent finding, it was found out that introducing the hexavalent vaccine under the Universal Immunisation Programme could reduce the number of injections, ease pressure on health workers and improve programme efficiency.

About Hexavalent Vaccine



Source: Sabin Vaccine Institute

- **About**: A **hexavalent (six-in-one) vaccine** is a **combination vaccine** that protects infants against **diphtheria, tetanus, pertussis (whooping cough), Hepatitis B, Haemophilus influenzae type b (Hib), and polio** in a **single injection.**
- **Doses**: It is expected to be given as **three doses at six, ten, and 14 weeks** , with a **booster dose given between the child's first and second birth date.**
- **Benefits**:
    - It **simplifies pediatric immunization schedules** by reducing the number of injections and clinic visits required.
    - It also **improves vaccination coverage** and promotes timely completion of the immunization schedule.
    - Fewer injections make the vaccination **process more acceptable to parents by reducing pain** and discomfort for children.
    - They **reduce logistical challenges** by simplifying vaccine storage, handling, and administration.
    - They **help lower healthcare costs** through more efficient vaccine delivery.

Kisan Credit Card–Modified Interest Subvention Scheme (KCC–MISS)

News: A third-party ISEC assessment found that KCC–MISS reduced farmers' interest burden and improved agricultural value addition across diverse agro-regions.

About Kisan Credit Card–Modified Interest Subvention Scheme (KCC–MISS)

Source – DD India

- **Type: Kisan Credit Card–Modified Interest Subvention Scheme (KCC-MISS)** is a **Central Sector Scheme**, launched in **2006–07**.
- **Nodal Ministry:** It is under the **Ministry of Agriculture and Farmers' Welfare.**
- **Implementation:** It is jointly implemented and monitored by the **Reserve Bank of India (RBI)** and the **National Bank for Agriculture and Rural Development (NABARD).**
    - It operates through **Public Sector Banks, Regional Rural Banks, Cooperative Banks and Private Sector Banks.**
- **Aim:** It aims to ensure the **availability of affordable short-term credit** for **agriculture and allied activities** through **Kisan Credit Cards**.
- **Features:**
    - **Concessional Credit:** Farmers receive **short-term KCC loans up to ₹3 lakh at 7% interest, with 1.5% interest subvention** to eligible lending institutions.
    - **Prompt Repayment Incentive:** Farmers who **repay loans on time receive up to 3% incentive**, reducing the effective interest rate to 4%.
    - **Collateral-free Loans:** The scheme **provides collateral-free loans up to ₹2 lakh.**
    - **Support for Allied Activities:** The interest benefit for loans taken exclusively for **animal husbandry or fisheries is available up to ₹2 lakh.**
    - **Flexible Credit Facility:** The scheme provides a revolving **KCC credit facility for up to five years with flexible withdrawals.**
    - **Relief During Calamities:** It provides interest relief during natural calamities, with extended support in severe disasters.

Indigenous African Swine Fever (ASF) Vaccine

News: India developed its first indigenous MA-104 cell line-based live attenuated African Swine Fever (ASF) vaccine to protect pigs against ASF.

About Indigenous African Swine Fever (ASF) Vaccine

Source – PIB

- **Indigenous African Swine Fever (ASF) Vaccine** is **India's first indigenous MA-104 cell line-based live attenuated vaccine** developed **to protect pigs against African Swine Fever Virus (ASFV) Genotype II.**
- **Developed by:** It is developed by **ICAR–National Institute of High Security Animal Diseases (ICAR-NIHSAD)**, Bhopal.
- **Key Features:**
    - **MA-104 Cell Line:** The vaccine uses the widely available MA-104 cell line, which **removes dependence on proprietary manufacturing platforms** and **supports large-scale production at lower cost.**
    - **Validation:** The vaccine **successfully completed laboratory testing and field validation** for safety, efficacy, genetic stability, sterility, purity, immunogenicity, and virulence reversion.
    - **Dosage:** It is recommended for **healthy pigs above eight weeks of age**, followed by a **booster dose after 14 days.**

About African Swine Fever (ASF)

- **African Swine Fever:** It is a highly **contagious viral disease** that **affects domestic pigs and wild boar.**
- **Cause:** It is caused **by the African Swine Fever Virus (ASFV),** a **DNA virus** of **the Asfarviridae family.**

- **Symptoms:** The disease causes **high fever, haemorrhages**, and mortality rates that may approach 100 percent.
- **Human Infection:** The disease does **not infect humans or other livestock species.**
- **Distribution: India reported its first ASF outbreak in Assam and Arunachal Pradesh in January 2020**, and the disease has since spread to several States and Union Territories.
- **International Status:** African Swine Fever (ASF) is a listed disease under the **World Organisation for Animal Health (WOAH)**
    - It is covered under its **Terrestrial Animal Health Code**. Member countries are required to notify WOAH of ASF outbreaks.
- **Treatment:** There is **no treatment for ASF,** and **prevention depends on strict biosecurity measures** and culling of infected animals.

Closing Auction Session (CAS)

News: SEBI has introduced the Closing Auction Session (CAS) for eligible F&O stocks, effective from 3 August 2026, replacing the existing closing price methodology.

About Closing Auction Session (CAS)

Source – Trading View

- **Closing Auction Session (CAS)** is an **auction-based session** to **determine the official closing price** of eligible F&O stocks.
- **Introduced by:** It is introduced by **Securities and Exchange Board of India (SEBI).**
- **Implemented by:** The **National Stock Exchange (NSE) and BSE** are implementing CAS simultaneously.
- **Effective from:** It is effective from **3 August 2026.**

- **Aim:** It's aims is to **improve price discovery, transparency, execution of large orders**, and ensure that the **closing price better reflects overall market demand and supply.**
- **Working Mechanism:**
    - **Start of the Auction Session:** The **Closing Auction Session (CAS) begins at 3:15 P.M.** for eligible stocks in the Futures and Options (F&O) segment.
        - At the start of the session, the **system calculates a reference price based on the Volume Weighted Average Price (VWAP) of trades executed during the last 30 minutes** of the Continuous Trading Session (CTS).
        - **This reference price serves as the starting point for the auction.**
    - **Order Collection:** During the auction window, **eligible buy and sell orders are collected instead of being executed immediately.**
        - The order entry **window closes at a randomly selected time between 3:28 P.M. and 3:30 P.M.** to discourage last-second order placement and support a fair price discovery process.
    - **Price Discovery:** Then, the stock exchange determines a single **equilibrium price,** which is the **price at which the maximum number of shares can be traded.**
        - This **price better reflects the overall market demand and supply.**
    - **Trade Execution and Closing Price: All eligible trades are executed at the equilibrium price.**
        - This **equilibrium price becomes the official closing price of the stock for that trading day.**
- **Key Features:**
    - **Auction-based Price Discovery:** The **official closing price** is determined through a **single equilibrium price.**
    - **Initial Coverage:** CAS **initially applies only to stocks with available F&O** contracts.
    - **Existing Method for Others:** Securities not covered under CAS will continue with the existing VWAP-based closing price methodology.

About Continuous Trading Session (CTS)

- **Order Execution:**
    - In the **Continuous Trading Session (CTS)**, buy and sell orders are matched and **executed immediately whenever prices match.**
    - In contrast, the **Closing Auction Session (CAS) first collects all eligible orders and executes them together at a single equilibrium price.**
- **Closing Price:**
    - **Earlier**, the **official closing price** was determined using the Volume Weighted Average Price (VWAP) of **trades executed during the last 30 minutes of CTS.**
    - **Under CAS**, the closing **price is determined through an auction-based mechanism.**
    - **Applicability:** Securities **not covered under CAS will continue to trade under the existing CTS**.

COSPAR Vikram Sarabhai Medal – 2026

News: Astrophysicist Annapurni Subramaniam has been awarded the COSPAR Vikram Sarabhai Medal – 2026 for her contributions to space research.

About COSPAR Vikram Sarabhai Medal – 2026

Source – ETV Bharat

- **COSPAR Vikram Sarabhai Medal** is an **international medal** that recognizes outstanding **contributions to space research by scientists working for developing countries.**
- **Awarded by:** It is awarded **jointly by** the **Committee on Space Research (COSPAR)** and the **Indian Space Research Organisation (ISRO).**
- **Established:** The medal was **constituted in 1990 in honour of Vikram Sarabhai**, the **founder of India's space programme.**
- **Frequency:** The medal is **presented biennially**.
- **Eligibility Requirements:** A **candidate's relevant work** must have been carried out mainly **during the five-year period ending one year before the COSPAR Scientific Assembly** where the medal is presented.
    - The award is **open to candidates from any country.**
- **2026 Recipient:**
    - **Awardee: Annapurni Subramaniam** received the COSPAR Vikram Sarabhai Medal – 2026.
    - **Contribution:** She was recognized for her **work in stellar physics, including studies on star clusters, nearby galaxies, and for serving as the calibration scientist for the Ultra-violet Imaging Telescope (UVIT) onboard AstroSat.**
    - **Significance:** She is the **fourth Indian to receive this** medal and the **first Indian woman scientist to receive this honour.**
        - She is **also the third female recipient** of the COSPAR Vikram Sarabhai Medal.
    - **Other Indian Recipients:** Other Indian recipients of this medal are **UR Rao (1996), Gurbax Singh Lakhina (2014) and Anil Bharadwaj (2024).**

About Committee on Space Research (COSPAR)

- **Committee on Space Research (COSPAR)** is an **international scientific body** affiliated with the **International Science Council (ISC).**
- **Establishment:** It was **established in 1958 .**

- **Objectives:** It **promotes** scientific **research in space at the international level**, encourages the **exchange of scientific results and information,** and provides an **open forum for scientists to discuss issues related to space research.**
- **Scientific Assembly:** COSPAR **organizes its Scientific Assembly every two years**, bringing together about 2,000–3,000 scientists from around the world.

Inventory-based Cross-border E-Commerce Export Framework

News: Government has notified Inventory-based Cross-border E-Commerce Export Framework under Foreign Trade Policy 2023.

About Inventory-based Cross-border E-Commerce Export Framework

Source: PIB

- The Government of India has **operationalised the Inventory-based Cross-border E-Commerce Export Framework under the Foreign Trade Policy (FTP), 2023.**

- It is to **establish a structured mechanism for inventory-based cross-border e-commerce exports of goods** manufactured or produced in India.
- **Features:**
    - **Export Mechanism:** Eligible e-commerce entities **can undertake export-only inventory operations through a registered Exporter-on-Record (EOR),** who procures goods from Indian Sellers-on-Record (SORs) only against confirmed overseas orders and exports them in its own name.
    - **Role of the Exporter-on-Record:** The Exporter-on-Record is **responsible for export documentation, customs clearance, destination-country regulatory compliance,** product testing and certification, packaging, labelling, order fulfilment, logistics, and reverse logistics.
    - **Benefits for Indian Sellers:** The framework **enables Indian sellers to access international markets** while allowing them to focus on manufacturing, production, and innovation by outsourcing export-related processes to the EOR.
    - **Timely Payments and Transparency:** The framework **guarantees timely payments to Sellers-on-Record within the prescribed timeline,** irrespective of payment received from overseas buyers, and provides sellers with visibility into final sale prices, order status, and shipment tracking.
    - **Export Benefits:** Export rebates and refunds **must be shared with Sellers-on-Record in proportion to the Free on Board (FOB) value of their goods**, ensuring that export incentives are passed on to the actual producers.
    - **Safeguards for Export Operations:** The framework **permits procurement of export inventory only against confirmed overseas orders, prohibits speculative inventory creation,** requires digital identification and segregation of export inventory for complete traceability, and prohibits diversion of export inventory into the domestic market.
    - **Handling of Returned Goods:** Returned or rejected consignments must be r**e-exported, returned to the seller, or disposed of strictly in accordance** with the prescribed procedures.
    - **Compliance Requirements:** The framework **mandates annual compliance certification and maintenance of digital records** to strengthen transparency, accountability, and regulatory oversight.
- **Expected Outcomes:** The framework is expected **to increase the participation of Indian manufacturers, traders, and MSMEs in global e-commerce supply chains** by reducing compliance costs, improving market access, ensuring transparency, and strengthening the delivery of export benefits.

Key Facts about Lesotho

News: India and Lesotho reviewed the full spectrum of their bilateral relationship during the sixth meeting of the India-Lesotho Joint Bilateral Commission for Cooperation (JBCC) held in New Delhi.

Key Facts about Lesotho

Source – Geologydotcom

- **Location:** It is a **landlocked** country located in southern Africa.
- **Largest enclave:** It is **entirely surrounded by South Africa**, making it the largest of only three sovereign enclaves in the world, the others being San Marino and Vatican City.
- **Climate:** It has **temperate climate** with cold, dry winters and hot, wet summers.
- **Terrain:** It is mostly **highland** with plateaus, hills, and mountains with over 80% of its **land above 1,800 m**.
- **Mountain range:** It is situated in the **Maloti Mountains**, gaining the nickname '**The Mountain Kingdom**'.
    - It is the **only independent state in the world** that lies **entirely above 1,400 m** in elevation.
- **Peaks:** The **Thabana Ntlenyana (3,482 m)** of Maloti Mountains is the highest peak in the country and of the southern Africa.
- **Rivers:** The **Orange River**, one of the longest rivers in Africa, rises in the **Lesotho Highlands**.
    - The **Caledon River** forms part of the **western border with South Africa** and is an important tributary of the **Senqu River**.
- **Polity:** The Government is a **parliamentary constitutional monarchy**.
- **Capital:** Its capital is **Maseru**, which is also the largest city of Lesotho.

Bonda Tribe and Ringa Weaving Tradition

News: The Bonda tribe of Odisha continues to preserve the centuries-old Ringa weaving tradition, which remains an important symbol of its cultural identity.

About Bonda Tribe

Source – NewsDarpan

- The **Bonda tribe** is **one of India's oldest** Particularly Vulnerable Tribal Groups **(PVTGs)**, known for preserving its distinct cultural traditions.
- **Location:** They are exclusively found in the **Malkangiri district of Odish**a and are mainly **concentrated in the Khairaput block.**
- **Key Aspects:**
    - **Other Names:** The tribe is also **known as Bondo, Bondas, Bonda Paraja, and Bhonda.**
    - **Population:** The tribe has a population of **about 7,000 people.**
    - **Origin:** They are considered **among the first settlers in India**, with **Austroasiatic lineage.**
    - **Language:** They **speak Remo**, an **Austroasiatic language** that is **different from mainstream Indian languages.**
    - **Art and Culture:** The tribe is known for **making decorative tools, utensils, colourful fabrics, and jewellery.**
    - **Ringa Weaving Tradition:** Bonda **women preserve the tradition of weaving the Ringa,** which represents their cultural identity and is **passed from one generation to another.**

About Ringa Weaving Tradition

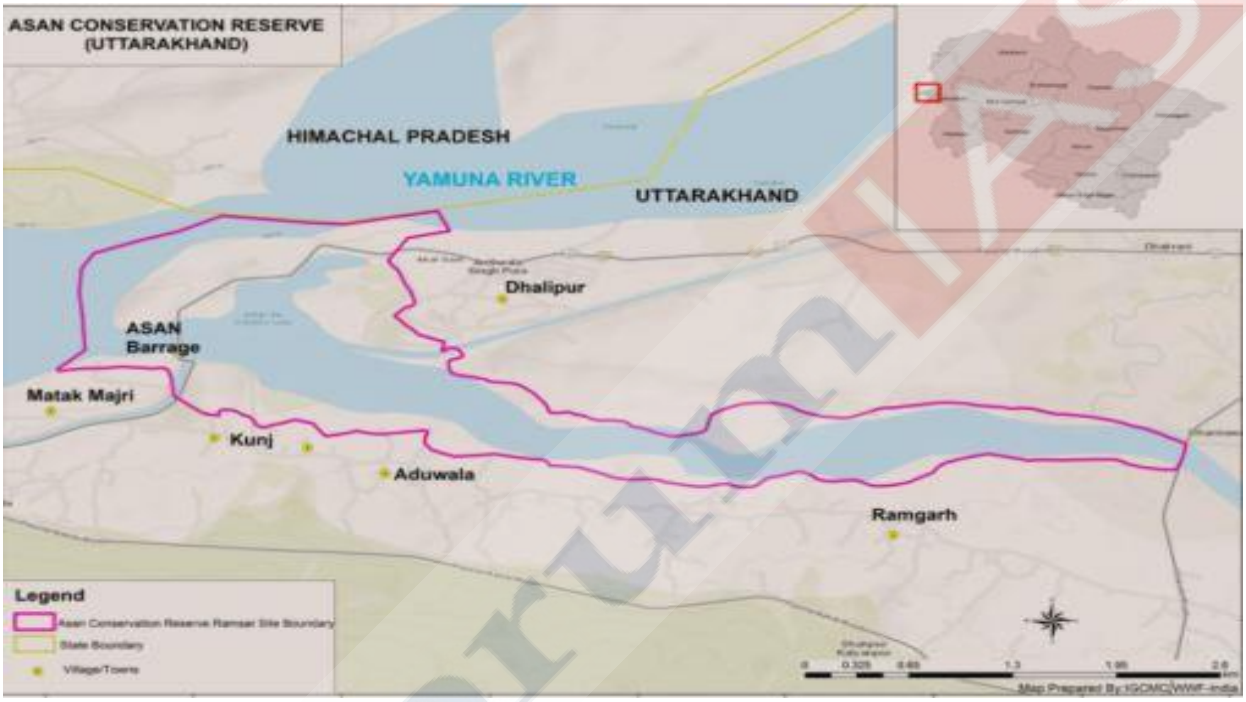
- **Ringa Weaving Tradition:** It is a **handwoven wraparound skirt** that has remained the **central symbol of Bonda cultural identity for generations.**
- **Geographic Region:** It is practised in the **Malkangiri district of Odisha.**
- **Key Aspects:**
    - **Cultural Importance:** It is **mainly woven for personal and community use rather than trade.**
    - **Design:** It is recognized for its **bold horizontal stripes in red, maroon, black, white, and blue,** and it is made for **everyday use with durable fabric.**
    - **Materials:** It was earlier woven from **bark fibre of the Kerang tree**, but **cotton yarn** gradually **replaced it**, while its **visual** identity remained **unchanged.**

- **Women learn weaving from their mothers** and grandmothers and **continue the tradition across generations.**

Asan Wetland Conservation Reserve

News: The Supreme Court clarified that a direction banning mining activities within a 10 km radius of the Asan wetland conservation reserve would apply to other wetland conservation reserves across the country for the sake of parity.

About Asan Wetland Conservation Reserve



Source – WWF India

- **Location**: It is situated in **Dehradun district, Uttarakhand**, along the **Asan River**, which **flows into the Yamuna River**.
- It was **declared** a Conservation Reserve in **2005** under **Section 36A of the** Wildlife (Protection) Act, 1972.
- **Ramsar Site**: It is the ***first Ramsar site in Uttarakhand***.
- It is listed as an **Important Bird Area (IBA)** by the **Bombay Natural History Society (BNHS) and BirdLife International.**
- **Avain Species**
  - **Strategically located** within the ***Central Asian Flyways (CAF),***the reserve homes **330 bird species**, including **critically endangered species** like the ***red-headed vulture, white-rumped vulture***, and ***Baer's pochard.***
    - Other **vulnerable or endangered species** include the **Egyptian vulture, steppe eagle, and Indian spotted eagle.**
- **Fish Diversity**: It supports **49 fish species**, including the **endangered *Putitor mahseer* (Tor putitora).**

Dr. M. S. Swaminathan Award for Environment Protection 2026

News: Two women changemakers, P. Pechiyammal and Govindhammal, received the Dr. M.S. Swaminathan Award for Environment Protection 2026 in Chennai.

About Dr. M. S. Swaminathan Award for Environment Protection 2026

Source – TH

- It is a **national award** that **recognises grassroots individuals, community champions, or organisations** for outstanding environmental protection efforts.
- **Instituted By:** It is instituted by **M.S. Swaminathan Research Foundation (MSSRF).**
- **Partners:** The award is presented in partnership **with CavinKare Pvt. Ltd. and the Rotary Club of Madras East**.
- **Objective:** The award recognises and encourages grassroots leaders who **preserve natural ecosystems, clean marine pollution, promote climate-resilient farming,** and maintain a **balance between development and ecological conservation.**
- **Eligibility:**
    - It is open to **individuals, local community workers, smallholder farmers, fisherfolk, and non-governmental organisations across India.**
    - Candidates **must demonstrate measurable improvements** in marine waste management, sustainable farming, seed preservation, or biodiversity restoration.

Recipients of Dr. M.S. Swaminathan Award for Environment Protection 2026:

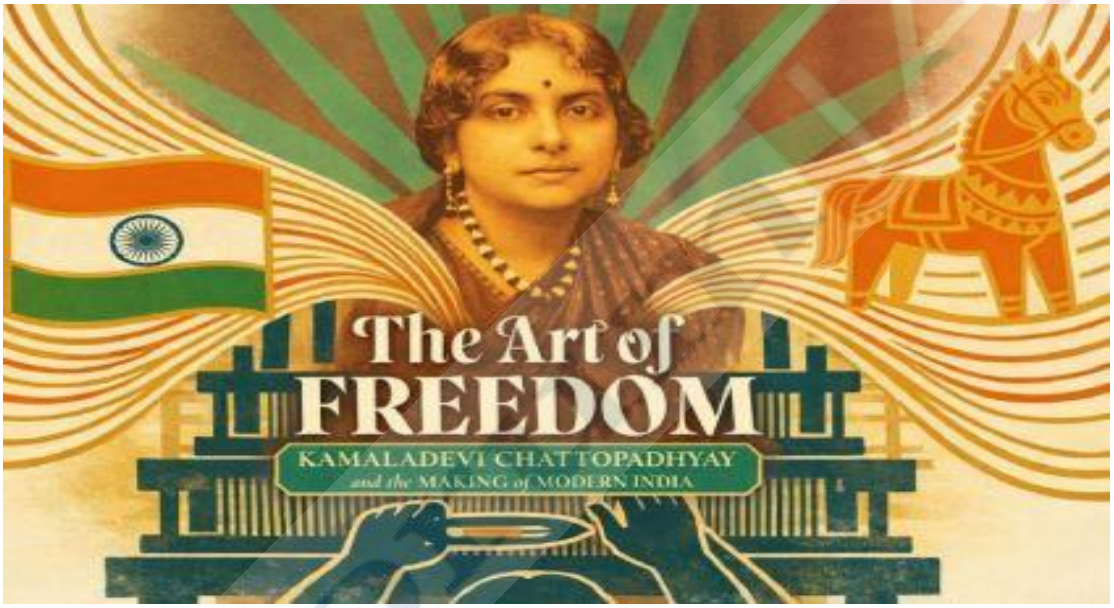
- **P. Pechiyammal:**
    - **Region:** She belongs to **Ramanathapuram, Tamil Nadu.**
    - **Field:** She works in **marine conservation and ocean plastic management.**
    - **Contribution:** She led community efforts to **remove abandoned fishing nets from coastal waters and shorelines.**
        - Her work **helped protect coral reefs, turtles, and fish** by reducing ghost-net entanglement.
- **Govindhammal:**

- **Region:** She belongs to **Villupuram, Tamil Nadu.**
- **Field:** She works in **sustainable and climate-resilient agriculture.**
- **Contribution:** She promoted **organic farming, improved soil health, and encouraged climate-resilient agricultural practices**.
    - She also **strengthened Farmer Producer Companies,** which improved the **bargaining power of farmers** and helped them get better returns for their produce.

Kamaladevi Chattopadhyay

News : Kamaladevi Chattopadhyay, popularly known as "Hatkargha Maa" (Mother of Handlooms), is remembered for her exceptional contribution to Indian handlooms and handicrafts.

About Kamaladevi Chattopadhyay



Source – Swarajya Mag

- **Kamaladevi Chattopadhyay (1903–1988)** was a **freedom fighter, social reformer, feminist**, and a leading force behind the **revival of Indian handicrafts, handlooms, and theatre.**
- **Early Life:**
    - **Birth**: She was **born on 3 April 1903 at Mangalore** to Ananthaya Dhareshwar and Girijamma.
        - Her father was the **District Collector of Mangalore.**
    - **Family Background:** She was **born into a Saraswat Brahmin community.**
        - Her parents were **progressive thinkers and participated in the freedom struggle.**
    - **Inspired by:** She was deeply **inspired by Gandhian ideas of non-violence.**
- **Role in the Freedom Struggle:**
    - **Entry into Politics:** She joined the **Indian National Congress in 1923** and became the **first woman in India to contest a legislative election in 1926.**
    - **Salt Satyagraha:** She **opposed Mahatma Gandhi's decision to exclude women from the Salt March.**
        - She **sold "freedom salt" in defiance of the British salt laws**.

    - She became the **first woman arrested during the Salt Satyagraha.**
  - **Nationalist Organisation:** She **headed the women's wing of the Hindustani Seva Dal** and trained hundreds of women volunteers for nationalist protests.
  - **Socialist Politics:** She **helped found the Congress Socialist Party and became its President in 1936.**
- **Socio-Political & Feminist Milestones:**
  - **Women's Leadership:** She **contested the Madras Provincial Legislative Assembly election** with the support of **the Women's Indian Association** and narrowly lost.
  - **Women's Rights:** She **co-founded the All India Women's Conference with Margaret Cousins.**
    - She later led the organisation to promote women's education, voting rights, and campaigns against child marriage.
  - **International Role:** She **represented Indian women internationally,** attended the **International Alliance of Women in Berlin in 1929,** and supported equality between nations.
  - **Author:** She wrote on women's rights from 1929, and her book **Indian Women's Battle for Freedom** was published in 1982.
- **Post-Independence Cultural Renaissance:**
  - **Handicrafts and Handlooms:** She revived Indian handicrafts and handlooms by **establishing the All India Handicrafts Board.**
  - **Support for Artisans:** She founded the **Central Cottage Industries Emporium (1952)** to connect rural artisans directly with urban buyers.
  - **Institution Building:** She played an important role in establishing the **National School of Drama, the Sangeet Natak Akademi, and the Indian Cooperative Union.**
  - **Refugee Rehabilitation:** Through the **Indian Cooperative Union,** she helped **develop Faridabad** to rehabilitate tens of thousands of Partition refugees.
- **Major Awards & Recognition:**
  - **Padma Bhushan:** She received the **Padma Bhushan in 1955.**
  - **Ramon Magsaysay Award:** She became the **first Indian woman to receive the Ramon Magsaysay Award in 1966.**
  - **Padma Vibhushan:** She was honoured with the **Padma Vibhushan in 1987.**
- **Legacy:** She is affectionately **remembered as "Hatkargha Maa" (Mother of Handlooms)** for her exceptional contribution to Indian handlooms and handicrafts.

HYDERACENE

News: The University of Hyderabad (UoH) has secured an Indian patent for HYDERACENE.

About HYDERACENE

- HYDERACENE is a **novel polymer-based material** developed **for use in solid rocket propellants for defence and space applications.**
- It has been patented under the title **"Synthesis of Novel Burn Rate Catalyst, Ferrocene Polyethylene Glycidyl Grafted Hydroxyl-Terminated Polybutadiene via Ring-Opening Polymerization."**

- **Developed by:** It has been developed by **Prof. Tushar Jana (School of Chemistry) with co-inventors Dr. Mutyalanaidu Ganivada and Sourav Jana.**
- **Properties**:
    - It has been developed as an **indigenous alternative to BUTACENE,** a commercially available **polymer-based burn-rate modifier used in solid rocket propellant**s in the aerospace and defence sectors.
    - Unlike conventional solid propellant formulations, which require separate binder and burn-rate catalyst materials, **HYDERACENE combines both functions in a single polymer molecule.**
        - This improves **long-term stability by preventing the catalyst from separating from the binder over time** and enables more controlled and efficient combustion in solid rocket motors.
- **Application**: It is intended for **use in solid rocket propellants employed in rockets, missiles** and other solid-propellant propulsion systems.
- **Benefits:**
    - It could strengthen **India's self-reliance in strategic defence technologies.**
    - This i**nvention could reduce India's dependence on imported strategic materials,** which cost about `50,000-`60,000 per kilogram.