

Factly Weekly

Compilation

2026

**For UPSC CSE Prelims
Exam**

**4th Week
March 2026**

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Constitution (Scheduled Castes) Order, 1950

News: The Supreme Court held that a person converting to Christianity cannot claim Scheduled Caste protections, upholding the Andhra Pradesh High Court order.

About Constitution (Scheduled Castes) Order, 1950

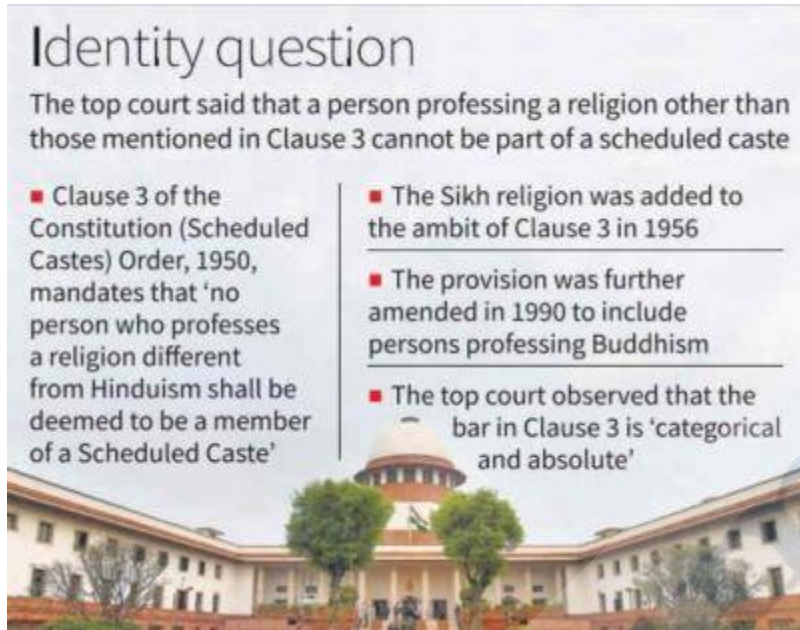


Figure 1. Source – TH

- It defines Scheduled Castes (SCs) and restricts their status based on specific religions under Article 341.
- Constitutional basis: It was issued by the President to provide protection against social disability arising from untouchability.
- Religious criteria: It initially restricted SC status to Hindus, later extended to Sikhs (1956) and Buddhists (1990), and now

applies only to these three religions.

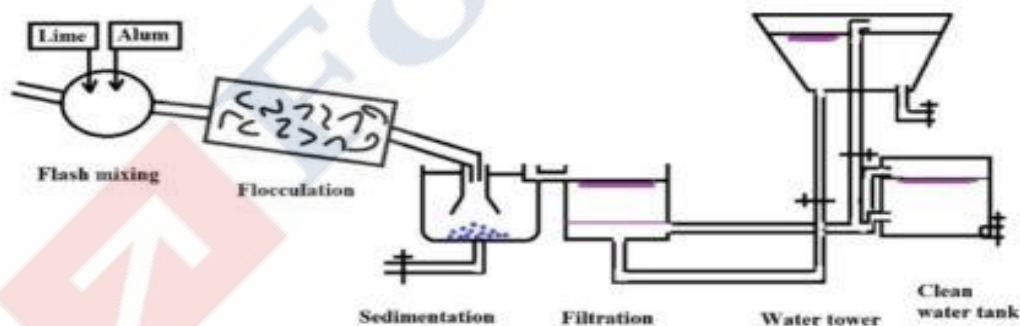
- **Clause 3 (religious restriction):** Paragraph 3 clearly states that no person professing a religion other than Hinduism, Sikhism, or Buddhism shall be deemed a Scheduled Caste member.
- **Territorial Nature:** A caste recognised as SC in one State may not be recognised in another State or Union Territory.
- **Relevant Constitutional Articles**
 - **Article 341(1):** It empowers the President to notify the list of Scheduled Castes.
 - **Article 341(2):** It allows only Parliament to include or exclude any caste from the list.
 - **Article 366(24):** It defines Scheduled Castes as those notified under Article 341.
 - **Articles 15(4) and 17:** These provisions support advancement of Scheduled Castes and abolish untouchability.
- **About SC Status after Supreme Court Ruling (2026)**
 - **Background of the case:** The case arose from a complaint filed in 2021 by a Christian pastor who alleged caste-based abuse and invoked provisions of the SC/ST Act.

- The accused argued that since he had converted to Christianity and was functioning as a pastor, he could not claim Scheduled Caste status.
- The Andhra Pradesh High Court in April 2025 accepted this argument and quashed the case.
- **Supreme Court ruling (2026):** Supreme Court upheld the High Court's decision and held that a person who converts to Christianity cannot continue to claim Scheduled Caste status or related protections.
- **Loss of status and mutual exclusivity:** Conversion to non-specified religions leads to immediate loss of Scheduled Caste status, and such persons cannot simultaneously claim Scheduled Caste identity.
- **Reconversion and proof requirement:** The Court stated that to regain Scheduled Caste status after reconversion, a person must provide clear and credible proof of returning to the original religion and acceptance by the caste community, and mere self-declaration is not sufficient.

Nalgonda Technique

News: The Government of India has commissioned a study to reassess fluoride removal technologies as existing standards based on the Nalgonda technique lag behind advancements.

About Nalgonda Technique



Source – Research Gate

- The Nalgonda technique is a simple and cost-effective method used for removing excess fluoride from drinking water.
- **Developed by:** It was developed by the National Environmental Engineering Research Institute (NEERI), Nagpur, in 1974.

- **Chemicals used:** The technique involves the sequential addition of three primary chemicals –
 - **Alum (aluminium sulphate):** Acts as a coagulant that reacts with fluoride ions to form “flocs”.
 - **Lime (calcium oxide):** Added to maintain the pH of the water and ensure proper flocculation.
 - **Bleaching powder:** Used for disinfection to remove pathogens.
- **Process:** The process follows four main sequential steps –
 - **Rapid mixing:** Chemicals (alum, lime, and bleaching powder) are added to the raw water and mixed vigorously, usually for 1–2 minutes, to ensure they are properly dispersed.
 - **Flocculation:** The mixture is stirred gently for a longer duration, typically 10–20 minutes. This allows the formation of large, settleable “flocs” as the chemicals react, which trap the fluoride ions.
 - **Sedimentation:** The water is allowed to remain undisturbed for about 1–2 hours. During this phase, the flocs formed in the previous step settle to the bottom due to gravity.
 - **Filtration:** The clear, treated supernatant water is separated from the settled sludge by passing it through filters, such as a rapid gravity sand filter.
- **Limitations:** It produces high amounts of sludge, requires daily chemical addition and is less effective in water with high total dissolved solids or hardness.
- **Significance :** It provides an affordable and practical solution for safe drinking water in fluoride-affected regions.

Beavers – Animal Kingdom’s Engineers

News: A new international study found that beavers reshape river systems and help store carbon, reducing its release into the atmosphere.

About Beavers – Animal Kingdom’s Engineers



Source – PBS

- Beavers are semiaquatic rodents known for building dams that transform landscapes and create wetlands.
- **Habitat:** They live in freshwater ecosystems such as rivers, streams, lakes, ponds, and marshes, usually in slow-moving water areas.
- **Distribution :** Beavers are native to North America, Europe, and Asia.
 - The Manipur beaver (*Trogontherium cuvieri*) is recorded to have existed in India until approximately 1905, which marks the last known record of its population.
- **Characteristics**
 - **Body structure:** Beavers have stout bodies, large heads, and flat, scaly tails with webbed hind feet for swimming.
 - **Size:** They are the second-largest rodents in the world and can weigh up to 50 kg.

- **Teeth adaptation:** They possess strong chisel-like incisors that grow continuously and help in cutting wood.
- **Aquatic adaptation:** Their eyes, ears, and nostrils are positioned to stay above water, with special valves for underwater protection.
- **Diet:** They are herbivorous and feed on tree bark, aquatic plants, grasses, and sedges.
- **Movement ability:** They are efficient swimmers and can carry materials while walking on their hind legs.
- **Ecological roles**
 - **Ecosystem engineer:** Beavers change their habitat by moving mud, stones, and logs to build dams and lodges, which reshape landscapes.
 - **Keystone species:** Their activities create wetland ecosystems that support fish, birds, and amphibians, and their removal can degrade the ecosystem.
 - **“Nature’s kidneys”:** Beaver dams trap sediment and filter pollutants like nitrates and phosphates, which improves water quality downstream.
 - **Carbon sequestration:** Beaver-created wetlands trap organic matter and help store carbon, which reduces its release into the atmosphere.
- **Conservation status**
 - **American Beaver (*Castor canadensis*):** It is classified as Least Concern under the IUCN Red List.
 - **Eurasian Beaver (*Castor fiber*):** It is also classified as Least Concern under the IUCN Red List.

Hudsonian godwit (*Limosa haemastica*)

News: The Hudsonian godwit (*Limosa haemastica*) population has plunged 95% in four decades due to a complex mix of environmental changes across multiple countries.

About Hudsonian godwit (*Limosa haemastica*)



Source: TH

- They are large shorebird belongs to sandpiper family, Scolopacidae.
- Scientific name: Their scientific name is *Limosa haemastica*.
- Habitat: They breed in wetland habitats such as sedge meadows and muskeg in the sub-Arctic and Boreal regions.
- Distribution: They are long -distance migratory species that breed at remote sites in northern Canada and winter in southern South America.
 - They migrate to South America and the Caribbean.
 - They are occasionally recorded as vagrants in Europe, Australia, and South Africa.
- Characteristics
 - Adults have long dark legs and a long pink bill with a slight upward curve and dark at the tip.
 - Their upper parts are mottled brown and the underparts are chestnut.
 - Their tail is black and the rump is white.
 - They show black wing linings in flight.
 - Their legs and feet are bluish-grey.
- Diet: They forage by probing in shallow water. They mainly eat insects and crustaceans.
- Conservation status
 - IUCN: Vulnerable

- They are one of 42 species proposed for international protection at a meeting of parties to the UN Convention on the Conservation of Migratory Species (CMS).

World Air Quality Report, 2025

News: IQAir recently released its 8th World Air Quality Report (2025) highlighting global air pollution trends, health risks, and monitoring gaps.

About World Air Quality Report, 2025

INDIA 6th AMONG 143 COUNTRIES

> No. of cities analysed: 9,446 in 143 countries	> Kolkata rank among 259 Indian cities: 49th	$\mu\text{g}/\text{m}^3$
> India's global rank: 6th most polluted country	> Kolkata PM2.5 level: 51 $\mu\text{g}/\text{m}^3$	> Cities meeting WHO guideline: Only 14% globally
> Top polluted countries: Pakistan, Bangladesh, Tajikistan	> WHO safe limit: 5 $\mu\text{g}/\text{m}^3$	> Key concerns: Rising pollution linked to climate change, wildfires, and emissions
> Most polluted Indian city: Loni in UP (112.5 $\mu\text{g}/\text{m}^3$)		

 In 2025, familiar culprits, like industrial agriculture, wildfires and fossil fuels, left their mark... This open, transparent data is an essential tool for holding polluters accountable and securing a healthy environment for everyone – **Aidan Farrow** | SR SCIENTIST, GREENPEACE INT'L

Source: TOI

- World Air Quality Report evaluates pollution levels, based on annual average PM2.5.
- Released by: It is published by Swiss air quality technology company IQAir.
- Edition: This is the eighth edition of the report.
 - The first edition of this Report was released in 2018.
- The report analyzed data from monitoring stations across 9,446 cities in 143 countries, regions and territories.
- Findings of the report related to India:
 - India ranked as the sixth most polluted country in the world based on annual average PM2.5 concentration levels.
 - Loni in Uttar Pradesh was identified as the most polluted city in the world and Delhi ranked fourth globally in terms of PM2.5 pollution levels.

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- Loni recorded an annual average PM2.5 concentration of 112.5 $\mu\text{g}/\text{m}^3$, which was nearly 23 percent higher than in 2024 and more than 22 times higher than the guideline level recommended by the World Health Organization (WHO).
- Kolkata has been placed 49th in pollution ranks among 259 cities in India.
- Among the ten most polluted cities in the world, five cities were from India, namely Loni, Byrnihat, Delhi, Ghaziabad, and Ula.
- **Findings of the report related to World:**
 - Pakistan ranked as the most polluted country, followed by Bangladesh, Tajikistan, Chad, and Congo.
 - The top 25 most polluted cities in the world were located in India, Pakistan, and China, with India being home to three of the four most polluted cities globally.
 - 54 countries experienced an increase and 75 countries recorded a decrease in annual average PM2.5 levels, two countries remained unchanged, and 12 countries were newly represented in the dataset.
 - Only 13 countries and territories globally met the WHO annual PM2.5 guideline. India is not one among them.
- **Sources of pollution:** The report highlighted that wildfires intensified by climate change played a major role in worsening global air quality in 2025.
 - Record biomass emissions from Europe and Canada contributed approximately 1,380 megatons of carbon, which significantly affected atmospheric pollution levels.
- **Suggestions**
 - The report emphasized that expanding access to real-time air quality monitoring data is essential for protecting public health and enabling communities to take informed action.
 - The report also highlighted that reducing emissions and addressing climate change are necessary steps to achieve long-term improvements in global air quality.

Globe Network

News: India hosted the 12th Steering Committee Meeting of the Global Operational Network of Anti-Corruption Law Enforcement Authorities (Globe Network) in New Delhi.

About GlobE Network

GLOBE Network

Source: GlobE Network

- **Global Operational Network of Anti-Corruption Law Enforcement Authorities (GlobE Network)** is a global platform of specialised anti-corruption law enforcement authorities.
- **Established in:** It was established in 2021 under the Riyadh Initiative during Saudi Arabia's G20 Presidency.
- **Members:** All UN member states and state parties to the UN Convention against Corruption (UNCAC) are part of GlobE Network.
 - It consists of 135 member countries and 250 member authorities, as well as 18 observers, including EUROPOL, the World Bank, and the International Association of Anti-Corruption Authorities.
 - **India's membership:** India joined the GlobE Network in 2022, with the Central Bureau of Investigation and the Directorate of Enforcement as its two designated member agencies.
 - India is currently member of GlobE Steering Committee.
- **Structure:** The organizational structure of the GlobE Network comprises three bodies:
 - **Plenary:** It is the governing body responsible for making decisions relevant to the functioning of the GlobE Network.
 - **Steering committee:** It is the managing body of the GlobE Network.
 - **Permanent Secretariat:** It is responsible for supporting the effective functioning of the day-to-day activities of the Network.

- It is supported by the United Nations Office on Drugs and Crime (UNODC) which provides the Network's secretariat.
- **Function:** It enables law enforcement authorities to work together across borders to detect, investigate, and prosecute corruption offenses.
 - These authorities include anti-corruption agencies, police forces, prosecutor's offices and offices of the attorney general, asset recovery offices and financial investigation units.
 - **Globe Secure Communications Platform (SCP)** is a highly effective platform for encrypted, real-time information exchange among member authorities.

About United Nations Convention against Corruption (UNCAC)

- **The United Nations Convention against Corruption (UNCAC) is the only legally binding universal anti-corruption instrument.**
- **Adopted:** It was adopted in 2003 by the General Assembly of the United Nations, New York.
- **Entered into force:** 14 December 2005
- **Status:** It has 140 signatories and 192 Parties (as of 25 September 2025). India is a Party to the Convention
- **The Convention adopts comprehensive approach to tackle corruption, emphasize the importance of preventive measures, criminalization and law enforcement, international cooperation and asset recovery.**

Thane Creek Flamingo Sanctuary

News: Water samples from key flamingo habitats near Thane Creek Flamingo Sanctuary (TCFS) showed rising toxicity, raising long-term ecological concerns.

About Thane Creek Flamingo Sanctuary



Source: TOI

- **Location:** It is located along the western bank of the Thane creek.
- **It is the first flamingo sanctuary in India.**
- **Established:** It was declared a flamingo sanctuary in 2015.
- **Status:** It was declared a Ramsar site by the International Wetlands Convention in 2022.
 - It has been categorized as an Important Bird Area (IBA).
- **Area:** It covers an area of 16.9 sq km covered with water, mangroves and inter-tidal marshy zone.
- **River associated:** The creek gets the largest source of fresh water from Ulhas River and numerous drainage channels. It receives saline water from Arabian sea.
- **Flora:** It hosts 12 species of mangroves and associates including *Avicennia marina*, *Acanthus illicifoliosus* and *Salvadora persica* etc.
- **Fauna:**
 - It has more than 200 species of resident and migratory birds including Lesser Flamingos, Greater Flamingos, Pied Avocet, Western Reef Heron, Black-headed Ibis, Common Redshank, Marsh Sandpiper, etc are found here.
 - It also includes diversity of birds, reptiles, mammals, and invertebrates like butterflies, moths, honeybees, wasps, spiders, and benthic organisms.

Blue Zones

News: The concept of Blue Zones highlights regions with exceptional longevity, offering lessons on healthy lifestyles amid rising stress, poor diet, and inactivity.

About Blue Zones



Source – CBS News

- **Blue Zones are specific geographic regions where people live significantly longer, healthier lives (often passing 100) due to lifestyle, diet, and social factors rather than genetics alone.**
- **Introduced by:** The concept was introduced by Dan Buettner, a National Geographic explorer.
- **Major regions:** The major Blue Zones identified are Ikaria in Greece, Ogliastra in Sardinia (Italy), Okinawa in Japan, Nicoya Peninsula in Costa Rica, and Loma Linda in California (USA).
- **Characteristics**
 - **Plant-based diet:** People mostly consume plant-based food, with nearly 95% of their diet coming from vegetables, beans, whole grains, nuts, and fruits.
 - **Limited meat and sugar intake:** Meat is eaten sparingly, about five times a month, while sugar is rarely consumed and desserts are occasional.
 - **Natural and local food habits:** Food is fresh, local, and seasonal, with minimal use of processed or packaged items.
 - **Moderate eating practice:** People follow the “80% Rule,” which means they stop eating when they feel about 80% full.
 - **Daily physical activity:** Physical activity is part of daily life through walking, farming, and household work rather than structured exercise.

- Strong sense of purpose: Concepts like Ikigai and Plan de Vida provide meaning to life and support mental wellbeing.
- Strong social connections: Close family ties and social groups like “moais” provide emotional and social support, reducing stress.

India's Nationally Determined Contribution (2031-2035)

News: The Union Cabinet, has approved India's Nationally Determined Contribution for 2031-2035 period.

About India's Nationally Determined Contribution (2031-2035)



Figure 2. Source – TH

aligned with the vision of Viksit Bharat and the long-term goal of achieving net-zero emissions by 2070.

- **Key Targets of India's NDC (2031-2035)**
 - **Emissions intensity:** India aims to reduce emissions intensity of GDP to 47% by 2035, strengthening the previous 45% target for 2030.
 - **Non-fossil capacity:** India aims to achieve 60% share of non-fossil fuel-based energy in installed electric power capacity by 2035.
 - **Carbon sink:** India aims to create 5-4.0 billion tonnes of CO₂ equivalent carbon sink through forest and tree cover by 2035.

- **India's earlier NDC (2015):** India's earlier NDC (2015) targeted a 33–35% reduction in emissions intensity of GDP from 2005 levels by 2030 and 40% non-fossil capacity.
 - These were achieved ahead of time, with emissions intensity reduced by 36% during 2005–2020, showing strong climate performance.
- **Approach to NDC (2031–2035)**
 - **Global framework alignment:** The approach considers Global Stocktake outcomes, Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC) principle, and equity while balancing development priorities and energy security.
 - **Consultative process:** The targets are based on consultations involving ministries, experts, industry, and civil society through NITI Aayog working groups.
 - **Integrated governance approach:** The approach ensures a whole-of-government and whole-of-society strategy aligned with national priorities and domestic capabilities.

Helium and Helium Crisis

News: The disruption in global helium supply due to the Middle East war and restrictions in the Gulf of Hormuz has raised concerns in India's healthcare sector.

About Helium and Helium Crisis



Source - TH

- **Helium is a non-renewable inert gas.**
- **Discovered by:** It was discovered in 1868 by Jules Janssen and Norman Lockyer.
- **Naming:** It was named after the Greek word "Helios", meaning Sun.
- **Properties of helium**

- **Nature:** Helium is a chemical element with symbol 'He' and atomic number 2 and it belongs to the noble gas group.
- **Physical characteristics:** It is a colourless, odourless, tasteless, non-toxic, and inert gas that exists in monatomic form.
- **Lightness:** Helium is the second lightest element after hydrogen.
- **Boiling Point:** It has the lowest boiling point among all elements at about -268.9°C and becomes liquid at extremely low temperatures.
- **Solidification condition:** It cannot be solidified at normal atmospheric pressure and requires a pressure of about 25 atmospheres at around 1 K (-272°C) to become solid.
- **Thermal properties:** The boiling and freezing points of helium are lower than those of any other known substance.
- **Applications**
 - **MRI:** Helium is used in MRI machines as a coolant for superconducting magnets.
 - **Cryogenics:** Helium is used in cryogenics as a coolant because it is the coldest substance.
 - **Rocket propulsion:** It is used to pressurize fuel tanks, especially for liquid hydrogen systems.
 - **Meteorology:** It is used as a lifting gas for weather balloons carrying instruments.
 - **Welding and breathing:** It is used as an inert gas in welding and in high-pressure breathing mixtures.
- **Global Reserve:** The largest global reserves of helium are found in the United States, Algeria, and Russia.
- **Reserve in India:** India's Rajmahal Volcanic Basin in Jharkhand is a significant helium reservoir.

About Helium Crisis

- **The helium crisis** refers to supply disruptions and rising prices due to geopolitical tensions and supply-demand imbalance.
- **West Asia tensions:** The war in the Middle East and restrictions in the Gulf of Hormuz have disrupted helium supply chains, especially from Qatar, increasing prices significantly.
- **Infrastructure disruptions:** Damage to critical hubs like Qatar's Ras Laffan LNG facility has further constricted supply.
- **Impact on India**

- **Rising costs:** The price of helium has nearly doubled, increasing the cost burden on healthcare facilities, especially for smaller operators.
- **MRI Installation and Operational Challenges:** New MRI installations may be postponed due to high initial helium requirements, and older machines that require large volumes face higher disruption risks.

Immigration, Visa, Foreigners Registration & Tracking (IVFRT) Scheme

News: The Union Cabinet approved continuation of the Immigration, Visa, Foreigners Registration & Tracking (IVFRT) Scheme from April 2026 to March 2031.

About Immigration, Visa, Foreigners Registration & Tracking (IVFRT) Scheme



Figure 3. Source – PIB

- The IVFRT is a mission-mode project that creates a secure, integrated, and service-oriented framework for managing the entire lifecycle of travellers.
- **Launched in:** The project was originally approved on 13 May 2010.
- **Timespan:** The scheme will be in operation for a period of five years from 01 April 2026 to 31 March 2031.
- **Legal basis:** It is launched in the backdrop of the recently enacted Immigration and Foreigners Act, 2025.
- **Nodal Ministry:** Ministry of Home Affairs
- **Objective:** The objective is to modernize and interlink immigration, visa issuance, and foreigner registration functions to facilitate legitimate travellers while strengthening national security and curbing illegal migration.

- **Key Features**

- **Interlinked digital ecosystem:** The system connects 117 Immigration Check Posts, 15 FROs, and 854 FROs into a single integrated database.
- **Contactless and faceless services:** The scheme enables a fully online visa process with automated appointments and payments, with over 91% of e-visas cleared within 72 hours.
- **Fast Track Immigration Programme:** Automated e-gates at 13 major airports reduce clearance time from 3 minutes to 30 seconds for trusted travellers.
- **Technological innovation and biometrics:** The system uses self-service kiosks, mobile-based services, and biometric integration to ensure secure and seamless passenger movement.

IIED Food Security Index

News: A new study by International Institute for Environment and Development shows India faces worsening food insecurity under rising global temperature scenarios.

About IIED Food Security Index



Figure 4. Source – IIED

- The IIED Food Security Index measures countries' ability to ensure adequate, accessible, nutritious, and resilient food systems.
- **Developed by:** It was developed by the International Institute for Environment and Development (IIED).
- **Key features**
 - **Four pillars:** The index evaluates availability, accessibility, utilisation, and sustainability of food systems.
 - **Scoring system:** Countries are ranked on a scale of 1 to 10, with a global average of 6.74.
 - **Climate sensitivity:** It examines how food security changes under 1.5°C and 2°C warming scenarios.
 - **Economic link:** It relates food security with GDP, showing limited impact on sustainability.

- **Global findings**
 - About 56 billion people (59%) live below the global average score of 6.74.
 - At 2°C warming, an additional 291 million people may fall below this level.
 - Lower-income countries will face serious dietary instability at 1.5°C warming.
 - Food insecurity gaps between rich and poor countries will widen, especially in sub-Saharan Africa and South Asia.
- **India-Specific Data**
 - India's baseline score is 31, which is significantly below the global average of 6.74.
 - India is ranked behind Brazil (6.72), Mexico (6.36), and Indonesia (5.87) in the index.
 - India's food security score is projected to decline to 96 at 1.5°C warming.
 - The score is further expected to fall to 52 at 2°C, showing a steady worsening trend.

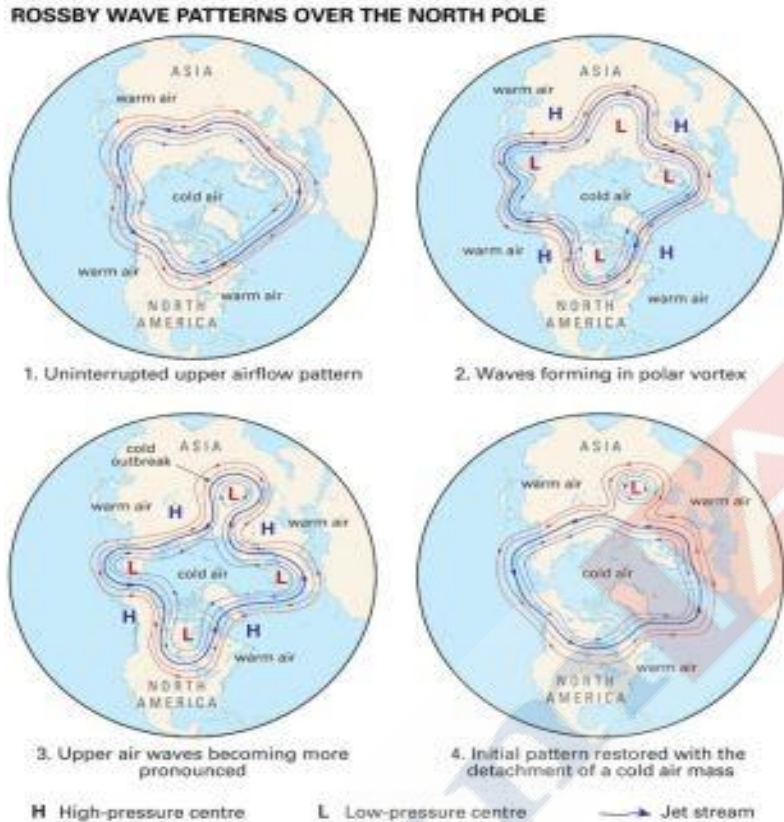
About International Institute for Environment and Development (IIED)

- The IIED is an independent, non-profit policy and action research organisation that specializes in linking local priorities to global challenges to promote sustainable development.
- **Origin:** Established in 1971 as the International Institute for Environmental Affairs (IIEA), it became the IIED in 1973.
- **Headquarters:** Its headquarter is in London.
- **Mission:** Its mission is to build a fairer, more sustainable world using evidence, action, and influence in partnership with others.
- **Key contributions:** IIED helped pioneer the concept of sustainable development.
 - It has influenced major global bodies like the IPCC, the World Bank, and various UN conventions.

Rosby Waves and Wet Bulb Temperature

News: A recent study links warming oceans with rising humid heatwaves, highlighting atmospheric processes like Rossby waves influencing large-scale heat extremes.

About Rossby Waves



Source – Britannica

- **Rossby waves are large horizontal atmospheric undulations that move westward and influence global weather and climate patterns.**
- **Mechanism**
 - **Role of coriolis effect:** The Rossby waves form due to the variation of the Coriolis effect with latitude, which affects moving air and water.
 - **Deflection of moving air:** When air moves toward the poles, it gets deflected and then curves back to conserve its potential vorticity.
 - **Formation of wave pattern:** This repeated deflection creates a large oscillating wave pattern that propagates westward.
 - **Heat transfer function:** These waves help in transferring heat between the tropics and the poles, maintaining earth's energy balance.
- **Key types and characteristics**
 - **Atmospheric rossby waves**

Nature and occurrence: These appear as large undulations in the jet stream and influence weather patterns over wide regions.

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Ridges and troughs: They create ridges, which bring warm, dry, and high-pressure conditions and troughs, which bring cold, wet, and low-pressure systems such as cyclones.

○ **Oceanic rossby waves**

Movement and location: These move slowly across ocean basins along the thermocline, which lies between warm surface water and colder deep water.

Impact on deep water: Although surface changes are small, they cause significant shifts in deeper water layers over long time periods.

Topographic rossby waves

- **Formation:** These are formed when physical barriers like mountains or ocean ridges disturb the normal flow of air or water.
- **Effect of physical features:** Such disturbances force the flow to adjust its path, leading to the development of wave patterns.

About Wet Bulb Temperature

- **Wet bulb temperature** is the lowest temperature that can be reached by air through evaporation of water under given conditions.
- **Basis:** It is the temperature of air cooled to saturation (100% humidity) by evaporation, with heat supplied by the air parcel itself.
- **Human impact and threshold:** Wet-bulb temperatures above about 31°C–31.5°C can prevent the human body from cooling through sweating and increase mortality risk.
- **Measurement:** It is measured using a thermometer covered with a wet cloth, where evaporation cools the reading below dry temperature.

Global Initiative on the Taking of Migratory Species (GTI)

News: To address the illegal and unsustainable taking of wildlife, the Convention on the Conservation of Migratory Species of Wild Animals (CMS) officially launches the Global Initiative on the Taking of Migratory Species (GTI) during a special event here at its 15th Meeting of the Conference of the Parties (COP15).

About Global Initiative on the Taking of Migratory Species (GTI)



Source – SOU News

- It is a collaborative global effort under Conservation of Migratory Species of Wild Animals (CMS) to address the drivers of illegal and unsustainable taking.
- **Launched at:** It is launched in March, 2026 during the 15th Meeting of the Conference of the Parties (COP15) to the Convention on the Conservation of Migratory Species of Wild Animals (CMS) in Campo Grande, Brazil.
- **Aim:** The GTI aims to provide coordinated support to CMS parties and fill longstanding gaps in global conservation efforts, and is expected to equip countries with the tools, partnerships and knowledge required to safeguard migratory species from this growing threat.
- **Objectives and focus areas:** It will focus on four key areas of work –
 - Improve data and monitoring
 - Strengthen legal and policy frameworks
 - Enhance community engagement
 - Raise awareness.
- **Meaning of Illegal and/or Unsustainable Taking:** Illegal and/or unsustainable taking refers to the removal of wild animals from nature in ways that are prohibited under the Convention and/or exceed the level of taking that can be sustained by species populations.
 - Taking for domestic motivations can include hunting, fishing, trapping, or capturing migratory species for food, domestic sale, sport, medicine, rituals, or retaliation in human-wildlife conflict.
 - This form of taking is a major direct driver of biodiversity loss globally.

- **Launching partners:** The initiative is being launched together with partner organizations whose work is directly relevant to addressing these challenges – the Convention on Biological Diversity (CBD), BirdLife International, the Global Initiative to End Wildlife Crime, Wildlife Conservation Society (WCS), World Wide Fund for Nature (WWF) and TRAFFIC etc.
 - The Governments of Uzbekistan, the United Kingdom, and France are among the CMS Parties participating in this new initiative and provided financial support.

Partnership for Indo-Pacific Industrial Resilience (PIPIR)

News: The U.S.-led Partnership for Indo-Pacific Industrial Resilience (PIPIR) has agreed to assess funding for a new ammunition assembly and production line in the Philippines.

About Partnership for Indo-Pacific Industrial Resilience (PIPIR)



Source – US Defence News

- It is a multilateral initiative aimed at strengthening supply chains and industrial resilience in the Indo-Pacific region.
- **Lunched in:** It was launched in May 2024.
 - It is launched under the framework of the [Indo-Pacific Economic Framework for Prosperity \(IPEF\)](#).
- **Objectives**
 - Reduce over-dependence on a single country for critical goods.
 - Promote trusted and transparent supply chains.
 - Strengthen industrial cooperation and crisis response mechanisms.

- Encourage investment and capacity building in partner countries.
- It is creating a trusted ecosystem of information exchange, technical cooperation, supply chain resilience, and co-production and co-sustainment
- Member countries: It comprises of 16 Indo-Pacific and Euro-Atlantic partners. The countries are –
 - United States, Australia, Japan, Republic of Korea, Philippines, Singapore, New Zealand, Thailand.
 - Canada, Germany, Italy, Lithuania, Netherlands, Norway, Sweden, United Kingdom.
 - Taiwan participates in an advisory
 - India is not a formal member but is frequently referenced in US statements for potential bilateral or project-based cooperation.

RBI's Payments Vision 2028

News: The Reserve Bank of India released Payments Vision 2028 outlining new initiatives to strengthen and expand India's digital payment ecosystem.

About RBI's Payments Vision 2028



Source – ET

- It is a comprehensive policy roadmap guiding the evolution of India's payment systems towards a secure, interoperable, and resilient ecosystem, consisting of 15 specific initiatives.
- Theme: "Shaping India's Payment Frontier"
- Aim: The primary aim is to empower users while providing strong safeguards against fraud and improving efficiency in payment systems.

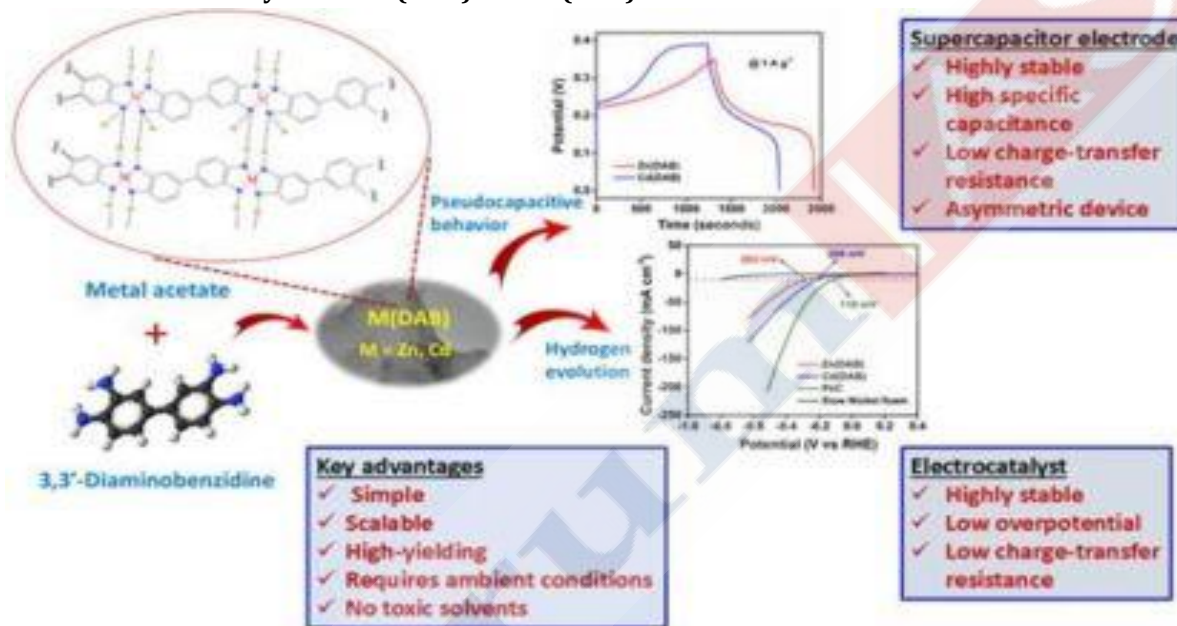
- **Duration:** The Vision document charts a roadmap for the next three years, extending up to December 2028.
- **Focus Area:** It focuses on user empowerment, fraud prevention, cross-border payment efficiency, interoperability, and ease of doing business.
- **Features**
 - **Switch On/Off Facility:** It proposes extending the existing card-based facility to all digital payment modes, including domestic and international transactions, to provide users greater control and reduce fraud risks.
 - **Payments Switching Service (PaSS):** It introduces a centralised service to enable seamless migration of both incoming and outgoing payment instructions during bank switching or mergers.
 - **Centralised Payment Control:** It allows customers to view all payment flows linked to their accounts and initiate full or partial switching with proper authorisation.
 - **Shared Responsibility Framework:** It proposes joint liability of issuer and beneficiary banks for unauthorised transactions, replacing the earlier framework where liability was only on the issuer.
 - **Strengthened Fraud Safeguards:** It encourages banks to adopt robust fraud detection systems and improve coordination for timely intervention.
 - **TReDS (Trade Receivables Discounting System) Interoperability and Expansion:** It aims to integrate platforms, introduce factoring with recourse, and enable receivables discounting for export MSMEs to improve financing access.
 - **Cheque System Review:** It plans a comprehensive review of cheque design and security features to enhance uniformity and prevent fraud.
 - **Electronic Cheques:** It explores introducing electronic cheques to combine the reliability of paper instruments with digital efficiency.
 - **Cross-Border Payment Efficiency:** It focuses on improving cross-border payment frameworks and simplifying authorisation processes.
 - **Ease of Doing Business:** It promotes smoother payment processes and supports a more efficient financial ecosystem.

- Significance: It strengthens India's position as a global leader in digital payments while enhancing security, efficiency, and accessibility of the ecosystem.

Coordination Polymers—Zn(DAB) and Cd(DAB)

News: Indian scientists developed coordination polymers Zn(DAB) and Cd(DAB) showing strong performance in energy storage and green hydrogen production.

About Coordination Polymers - Zn(DAB) and Cd(DAB)



Source - PIB

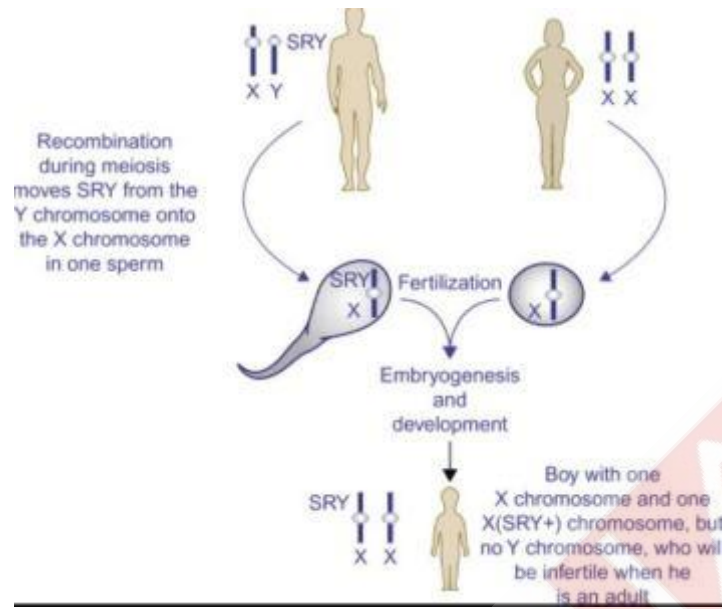
- Zn(DAB) and Cd(DAB) are coordination polymers made of zinc (Zn^{2+}) or cadmium (Cd^{2+}) metal ions and organic molecules of 3,3'-diaminobenzidine (DAB) naturally assemble to form layered frameworks with strong structures.
- Developed by: These materials were developed by scientists from the Centre for Nano and Soft Matter Sciences (CeNS) under the Department of Science and Technology, in collaboration with CHRIST (Deemed to be University), Bengaluru.
- Synthesis: They are synthesized using a simple room-temperature process without complex equipment or high temperature, which allows large-scale production.
- Structure: The materials consist of zinc (Zn^{2+}) or cadmium (Cd^{2+}) ions combined with organic DAB molecules to form strong layered frameworks.
- Characteristics

- Energy storage (Supercapacitors): Both materials show strong energy storage performance when tested in a standard three-electrode setup, which is used to evaluate materials individually.
 - Zn(DAB): Achieved 4 farads per gram (F/g).
 - Cd(DAB): Achieved 6 farads per gram (F/g).
- Performance in practical devices: Under device-like conditions using asymmetric supercapacitors, Zn(DAB) reached 785.3 farads per gram (F/g), while Cd(DAB) reached 428.5 farads per gram (F/g).
- Green hydrogen production: Both materials act as electro-catalysts for electro-catalytic water splitting, which is used to produce hydrogen fuel.
- Low energy requirement (Overpotential): They require low energy input, with 263 millivolts (mV) for Zn(DAB) and 209 millivolts (mV) for Cd(DAB).
- Durability and stability: Both materials retained a significant amount of their energy capacity after 5000 charge-discharge cycles, showing strong long-term stability.
- Significance: These materials show dual functionality in energy storage and hydrogen production, making them useful for clean and accessible energy solutions.

SRY Gene Test Screening

News: The International Olympic Committee mandated SRY gene screening and banned transgender women and DSD athletes from female categories to ensure fairness and safety.

About SRY Gene Test Screening



Source – ResearchGate

- Sex-determining Region Y (SRY) gene test screening is a DNA-based test that detects the presence of the sex-determining region Y gene.
- The SRY gene is a segment of DNA that is almost always on the Y chromosome, signalling the presence of testes/testicles and initiating male sex development by the production of testosterone.
- Developed by: The SRY gene was first discovered in 1990 by Andrew Sinclair.
- Objective: The objective is to protect the female category in elite sports by ensuring that athletes do not have physiological advantages linked to male development.
- Function: The test works by collecting a saliva sample, analyzing DNA for the SRY gene.
- Duration: The analysis process typically takes about one week for the results to be issued and submitted to the relevant international sports body.
- Key features
 - Once-in-a-Lifetime Test: The screening is required only once because the SRY gene remains fixed throughout life.
 - Indicator of biological development: The SRY gene is treated as a reliable sign of whether an athlete has experienced or will experience male sex development.
 - Limited scope of application: It applies only to elite international athletes and not to grassroots or leisure sports.

- Exceptions for rare conditions: Athletes with Complete Androgen Insensitivity Syndrome (CAIS) and other rare XY DSD (Differences in Sex Development) that do not benefit from the anabolic and/or performance-enhancing effects of testosterone would be eligible to compete in female category.

Gruh Sugam Portal

News: The National Housing Bank (NHB) has launched the Gruh Sugam Portal to revolutionize housing finance accessibility.

About Gruh Sugam Portal



Figure 5. Source – PIB

- It is a digital initiative to streamline the home loan process for Defence / Government personnel.
- Launched by: National Housing Bank (NHB)
- It promotes digital lending adoption and strengthens financial inclusion by improving access to housing loans.
- Features of the portal:
 - Who can apply: Defence Personnel, Members of Paramilitary Forces, Government Employees (State and Central) can apply for housing loans digitally through their respective administrative units.
 - It gives access to Unified Digital Marketplace that improves transparency and helps applicants discover the most suitable loan offers.

- It provides seamless digital integration between NHB and lending institutions to ensure smoother operations.
- It improves loan processing efficiency through a structured digital system.
- It includes a grievance redressal mechanism and consumer protection support. It offers an online chat facility for quick resolution of queries.

About National Housing Bank (NHB)

- It is the apex agency to promote cost effective housing finance system in India.
- Set up: It was set up by an Act of Parliament in 1987.
- Nodal Ministry: It operates under the Ministry of Finance.
- Objective: To promote a sound, healthy, viable and cost effective housing finance system to cater to all segments of the population and to integrate the housing finance system with the overall financial system.
- Head office: Its head office is at New Delhi.

India's First Port of Refuge (PoR)

News: Adani Ports and Special Economic Zone Ltd (APSEZ) has operationalised India's first Port of Refuge (PoR) to handle maritime emergencies and support vessels in distress.

About India's First Port of Refuge (PoR)



Figure 6. Source: NDTV

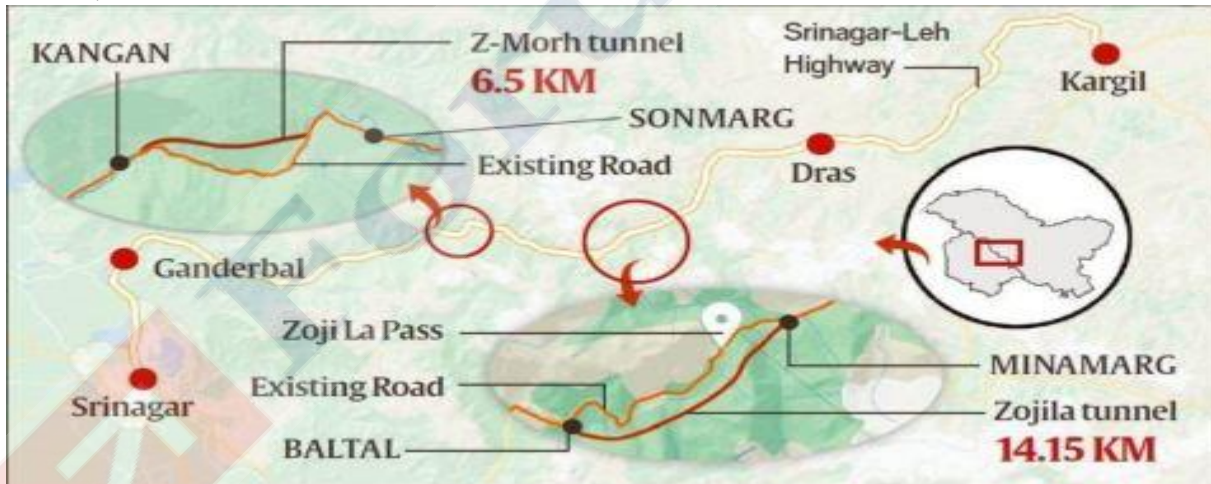
- India's first Port of Refuge (PoR) has been launched to create a structured and formal mechanism to handle maritime emergencies and vessels in distress.
 - PoR: A PoR is a designated location where ships can seek shelter to stabilise conditions, protect life, and limit environmental damage.
- Operationalised by: It is being operationalised by Adani Ports and Special Economic Zone Ltd (APSEZ).
- It is backed by a tripartite memorandum of understanding (MoU) with SMIT Salvage, the salvage and emergency response division of Royal Boskalis Westminster NV (Boskalis) and the [Maritime Emergency Response Centre \(MERC\)](#), bringing global expertise and coordinated response capability.
 - It will also support vessels insured under the International Group of Protection and Indemnity (P&I) Clubs.

- It is aligned with international maritime conventions, enhancing safety, environmental protection and India's role in global shipping corridors.
- Features:
 - Two ports have been identified as PoR:
 - Dighi Port on the west coast, supporting traffic across the Arabian Sea and routes to the Persian Gulf.
 - Gopalpur Port on the east coast, serving vessels in the Bay of Bengal and routes towards the Malacca Strait, one of the world's busiest maritime trade corridors.
 - The facilities will provide salvage and wreck removal, firefighting, pollution containment and emergency coordination services through specialized equipment and trained response teams.

Zojila Pass

News: An avalanche at Zojila Pass on March 28, 2026 caused seven deaths, raising concerns over traffic regulation and safety measures.

About Zojila Pass



Source - IE

- Zojila Pass is a high mountain pass in Ladakh, known as the "Mountain Pass of Blizzards."
- Location: It is situated at about 3,580 m on the Srinagar-Leh Highway.
 - It lies between Ganderbal district (Jammu and Kashmir) and Kargil district (Ladakh).
 - It lies in the Greater Himalayan Range.
- Connecting: It connects Sonmarg in Kashmir with Dras, Suru valleys, and further to Leh.

- It serves as the only surface link between Kashmir Valley and Ladakh.
- **Strategic importance:** It acts as a crucial supply route for Indian forces in sensitive areas like Siachen Glacier and LAC.
 - It supports transport of essential goods for Ladakh and maintains civilian life.
- **Climate:** It faces very harsh winters and heavy snowfall that disrupt mobility.
- **Geological sensitivity:** It is highly avalanche-prone and unstable due to melting snow.
- **Seasonal closure:** It remains closed for almost half of the year due to snow.
- **Historical significance**
 - **1947–48 Indo-Pak war:** It was a major battleground during the 1947–48 Indo-Pak war.
 - It was initially seized by Pakistan-backed forces in 1948.
 - **Operation Bison:** It was recaptured by the Indian Army on 1 November 1948 under Operation Bison using tanks.
- **Tunnels Passing Through Zojila Pass**
 - **The Zojila Tunnel:** It is a 14 km long tunnel under construction on the Srinagar–Leh highway.
 - It will reduce travel time across the pass from 3.5 hours to about 15 minutes.
 - It will be the longest bidirectional tunnel in Asia.
 - **Nilgrar Tunnels (1 & 2):** These tunnels are important components of the Zojila Tunnel Project in Jammu and Kashmir.
 - They are located on the Srinagar–Leh highway near Sonamarg and Baltal.
 - Nilgrar-1 is 435 m long and Nilgrar-2 is 1,950 m long.
 - They provide all-weather connectivity by bypassing snow-prone areas and ensuring year-round access.
 - **Z-Morh Tunnel (Sonamarg Tunnel):** It is a 5 km long two-lane tunnel between Gagangir and Sonamarg at an altitude of 8,650 feet.
 - It became fully operational in January 2025.

Jungle Cats (*Felis chaus*)

News: A new study published in Scientific Reports provides baseline data on jungle cat population, habitat preference, and conservation needs in India.

About Jungle Cats (*Felis chaus*)



Source – Wild Cat Family

- The jungle cat is a medium-sized wild cat found in diverse habitats across Asia.
- Scientific name: The scientific name of the jungle cat is *Felis chaus*.
- Naming: Its name comes from the Caucasus Mountains, where it was first discovered, and it is also called Swamp Cat or Reed Cat.
- Habitats: They inhabit grasslands, wetlands, and deserts, while avoiding dense forests and heavily modified landscapes, and preferring agro-pastoral and open habitats.
- Distribution : Jungle cats are found across Asia, including Egypt, southwest Asia, southeast Asia, Central Asia, and southern China.
 - In India : India supports large populations, with highest numbers in Madhya Pradesh, Rajasthan, and Odisha across 21 States.
- Characteristics
 - Appearance: The jungle cat has a white muzzle, yellow irises, and large ears ending in black tufts.
 - It has long legs and faint stripes on its body, which give it a distinct look among small cats.
 - Adaptability: It can survive in areas with moderate human presence, but it avoids places with high population density and intense disturbance.
 - Diet: It is a carnivorous animal that mainly feeds on rodents.

- It also eats lizards, frogs, snakes, and sometimes livestock depending on availability.
- **Social behaviour:** It is not nocturnal in nature and carries out most of its hunting activities during the early morning and late afternoon periods.
- **Ecological role:** Jungle cats help control rodent populations in agricultural areas, which reduces crop damage and supports farming systems in agro-pastoral landscapes.
- **Threats**
 - **Habitat fragmentation**
 - **Urbanisation, roads, poaching, stray dogs**
 - **Possible hybridisation with domestic cats**
- **Conservation status**
 - **IUCN Red List:** It is classified as Least Concern.
 - **Wildlife (Protection) Act, 1972:** It is listed under Schedule II.

CALM-Brain

News: CALM-Brain was launched on March 25, 2026 as India's first digital repository on psychiatric disorders to advance research, diagnosis, and treatment.

About CALM-Brain



Source – TH

- **CALM-Brain is a first-of-its-kind open-source digital repository on brain structure and function in psychiatric disorders.**

- **Developed by:** It has been developed by the National Institute of Mental Health and Neuro Sciences (NIMHANS) and the National Centre for Biological Sciences (NCBS) – TIFR under the Rohini Nilekani Centre for Brain and Mind (CBM).
- **Objective:** The main objective is to identify biomarkers, understand disease progression, and study treatment responses for better clinical outcomes.
- **Features**
 - **Comprehensive data coverage:** The repository integrates clinical, neuro-imaging, behavioural, and genetic datasets.
 - It covers major disorders such as addiction, bipolar disorder, dementia, obsessive compulsive disorder, and schizophrenia.
 - **Large dataset base:** It includes data from over 2,000 individuals across 900 families.
 - This enables comparison between affected and unaffected individuals for better analysis.
 - **Biorepository linkage:** The repository is linked with a stem cell biobank.
 - This supports research on the biological basis and origins of psychiatric disorders.
 - **Open-source platform:** The database will be available as an open-source platform for clinicians and researchers.
 - It helps in studying disease onset, progression, and underlying biological changes.

Balirajgarh Site

News: The Archaeological Survey of India (ASI) has begun excavation at Bihar's historic Balirajgarh site, which is believed to be the gateway to ancient Mithila.

About Balirajgarh Site



Source: Bihar Tourism

- Balirajgarh site is an **archaeological site** located at **Madhubani district, Bihar**.
- It was **declared a site of national importance in 1938**.
- **Findings:** The site has shown evidence of a **fivefold cultural period- Northern Black Pottery Ware, Sunga, Kushana, Gupta, followed by Pala Period**.
 - **Other findings also included remains of a rampart in three different phases, structural remains of burnt bricks laid in mud mortar, and some other structures of residential building.**
 - Among the antiquities are **terracotta objects** like animal and human figurines, **beads, semiprecious stones beads, sealings, bone tools, copper objects, punch-marked coins, etc.**
 - The excavation also indicated a **massive brick fortification spanning approximately 176 acres**. According to some scholars, **the Balirajgarh fort was built by the last King of the Janaka Dynasty in Mithila**.
- **Historical and Cultural significance:** The local folklore identifies it as the **capital of the legendary King Bali**.
 - Some scholars also believe that it **served as a major administrative hub** of the **ancient Videha Kingdom**.

Persian Leopard

News: The Persian leopard is the last remaining Panthera species in Iran after the extinction of the Asiatic lion Panthera leo persica and the Caspian tiger Panthera tigris virgata.

About Persian Leopard

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Source: Geographical Magazine

- The Persian leopard is also known as the **Anatolian or Caucasian leopard**.
- **Scientific name:** *Panthera pardus tulliana*
- **Habitat:** They are most commonly **found in mountainous regions** covered with forests, woodlands, and scrublands, with rocky outcrops and precipitous slopes.
- **Distribution:** They are a **subspecies** of leopard native to **Western and Central Asia**.
 - Historically, their range extended from **modern-day Turkey and the Caucasus across Iran into parts of Central Asia**.
 - Today, their distribution has **shrunk greatly and become fragmented**, with **over 70% of its original range lost**.
 - The **largest remaining population (about 500–700 individuals)** is found in **Iran**.
 - **Turkmenistan** has the **second-largest population**, with **up to 100 individuals** remaining.
 - They are currently present in countries across **Southwest and Central Asia, including Iran, Afghanistan, Armenia, Azerbaijan, Georgia, Iraq (Kurdistan), Kazakhstan, Pakistan, Russia (North Caucasus), Turkiye, and Turkmenistan**.
- **Characteristics**
 - **Appearance:** They have **grayish, slightly reddish fur** with large rosettes on the flanks and back, smaller ones on the shoulder and upper legs, and **spots on the head and neck**.
 - **Weight:** **Males can weigh up to 90 kg**, while the slenderer **females weigh up to 60 kg**.

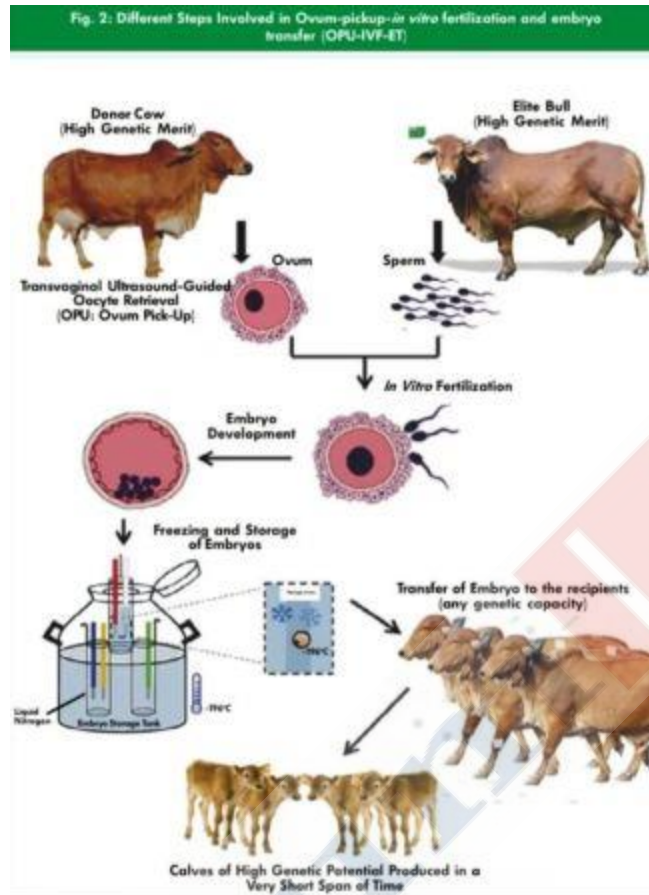
Factly Compilation [Fourth Week] March 2026

- **Behaviour:** They are **wide-ranging predator**, with male individuals typically occupying large territories.
 - They are **solitary and mostly active at night**.
 - **Both sexes mark their territories** with scrapes on ridgetop trails and trees, scent markings, and droppings.
 - **Diet:** They are **carnivores** and their diet varies depending on their habitat.
- **Ecological Role:** They play a very **important role in their native ecosystem** because they **control the numbers and health of the populations of their prey species**.
- **Threats**
 - Habitat fragmentation
 - Poaching
 - Loss of natural prey
 - Conflict with humans
- **Conservation status**
 - **IUCN Red List: Endangered**

OPU-IVF-ET technology and Cattle Breeds

News: The Indian Veterinary Research Institute, Bareilly, has successfully produced five healthy Sahiwal calves, including a female, through test-tube embryo transfer (OPU-IVF-ET) technology.

About OPU-IVF-ET technology



Source – ICAR

- The 'OPU-IVF-ET' technology stands for 'Ovum Pick-Up (OPU) and In Vitro Fertilization (IVF) and Embryo Transfer.
- Mechanism of technology
 - In this process, mature eggs are collected from animals using ultrasound-based techniques and fertilized with sperm in the lab.
 - The embryos can also be stored and used as needed.
 - These lab-developed embryos are then implanted into the uterus of surrogate cows or buffaloes, often those with lower milk yield, helping spread better genetic traits more widely.
 - These "test-tube" offspring are likely to produce milk similar to the original animal, helping improve breeds and increase overall milk production.
- Advantages: Under normal breeding, cows and buffaloes can become pregnant only once a year.
 - However, with the OPU-IVF technique, around 10 calves can be produced from a buffalo and about 20 from a cow annually.

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About OPU-IVF-ET Programme

- The OPU-IVF-ET programme was initiated during 2022-23.
- Launched by: ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly
- Aim: It is aimed at strengthening the genetic improvement of indigenous bovine breeds, targeting the three major dairy breeds.
- The breeds targeted are – Sahiwal, Murrah and Tharparkar.

About Cattle Breeds

- Sahiwal



Figure 7. Source – ICAR

The Sahiwal breed originates from the Sahiwal district in the Punjab region of Pakistan.

- It is found in the Punjab provinces of both Pakistan and India, particularly in Haryana, Punjab, and Rajasthan.
- This breed otherwise known as Lola (loose skin), Lambi Bar, Montgomery, Multani, Teli.
- The best indigenous dairy breed.
- The colour is reddish dun or pale red, sometimes flashed with white patches.
- Heavy breed with symmetrical body having loose skin.
- The average milk yield of this breed is between

1400 and 2500 kg per lactation.

- Age at first calving ranges from 37 to 48 months and the calving interval is 430 to 580 days.

Tharparkar



Source – ICAR

- Originated in Tharparkar district (Pakistan) of undivided India and also found in Rajasthan.
- Otherwise known as White Sindhi, Gray Sindhi and Thari.
- They are medium sized, compact and have lyre-shaped horn.
- Body colour is white or light grey.
- The bullocks are quite suitable for ploughing and casting and the cows yield 1800 to 2600 kg of milk per lactation.
- Age at first calving ranges from 38 to 42 months and inter calving period from 430 to 460 days.

Murrah



Figure 8. Source – ICAR

- It is the most important breed of buffaloes whose home is Rohtak, Hisar and Jind of Haryana and Nabha and Patiala districts of Punjab.
- Synonyms: Delhi, Kundi, Kali
- The colour is usually jet black with white markings on tail and face.
- The tightly curved horn is an important character of this breed.

- The body size is massive, neck and head are comparatively long.
- Head of females is short, fine and clear cut.
- Hips are broad and fore and hind quarters are drooping.
- The buffalo cows of this breed are one of the most efficient milk and butter fat producers in India.
- Butter fat content is 7% Average lactation yield is vary from 1500-2500 kg the average milk yield is 8 kg/day.
- While a few individual animals yield much as 19.1 kg/day.
- Age at first calving is 45-50 months and inter calving period is 450-500 days.

Myntdu River

News: The Liar Pamkam and Mynkrem tributaries of the Myntdu river have been severely damaged by rampant debris dumping during the construction of the Jowai bypass road.

About Myntdu River

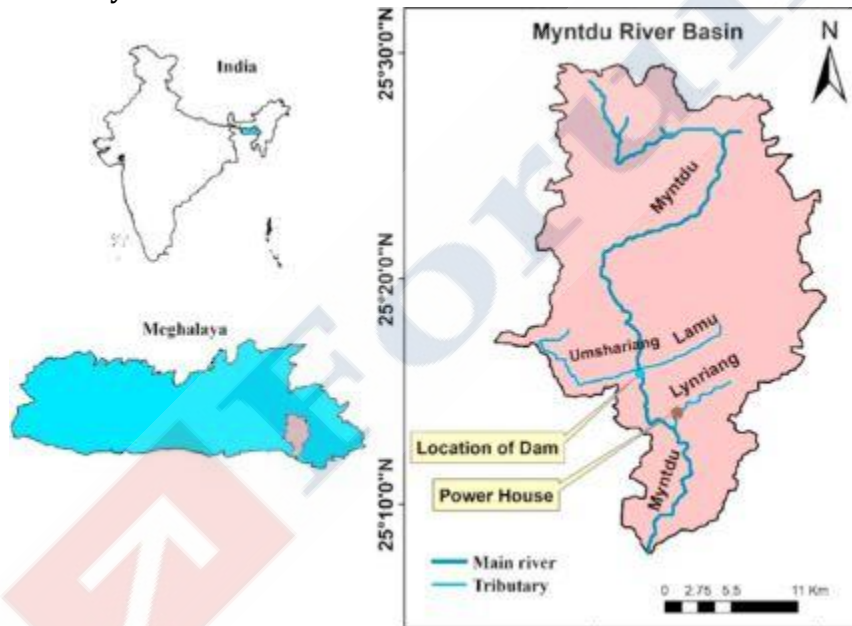


Figure 9. Source – ScienceDirect

- Origin: The Myntdu River originates in the Jaintia Hills District of Meghalaya, near the village of Mihmyntdu, approximately 2 km from the district headquarters of Jowai.
- This river encircles Jowai on three sides excluding the northern part of town.
- It is locally known as 'ka Tawiar ka Takan' (Our Guardian Angel) in the Pnar

dialect.

- It is often described as the guardian and protector of the inhabitants of Jowai region.

- **Course:** The river flows across Jowai, and then through Leshka, to reach the village Borghat, within Jaintia Hills, before finally entering Bangladesh, where it is locally called 'Shari' (or 'Hari').
 - It ultimately joins the Surma-Meghna river system.
- **Tributaries:** The chief tributaries of the Myntdu River are Umshariang, Lamu and Lynriang River.
 - The Umshariang coming from the west and Lamu coming from the east unite with the Myntdu River and form a tri-junction of three tributaries named as Leshka.
 - The Myntdu River after flowing southwards from Leshka joins its major tributary of the Lynriang River at a height of 335 m.
- **Geology:** The river traverses the denudational high and low hills of the Jaintia Hills, dominated by the Shella Formation of the Jaintia Group, which features alternating layers of sandstone and limestone.
- **Project:** The prominent Myntdu Leshka Hydroelectric Project (Stage I) is a 126 MW (3 × 42 MW) run-of-the-river dam located at Leshka.

e-Commerce Moratorium

News: The e-Commerce Moratorium is to be reconsidered for extension at the 14th Ministerial Conference in Yaounde, Cameroon.

About e-Commerce Moratorium



Source: WTO

- The **e-commerce moratorium** is a **global agreement among World Trade Organization members** which **bans customs duties being applied to electronic transmissions** such as digital downloads and streaming.
- **First adopted in:** It was **first adopted in 1998 at the WTO's Second Ministerial Conference in Geneva** as part of a **declaration to encourage early digital trade growth**.
- **Coverage:** It covers **cross-border transmissions** such as **software downloads, e-books, music and movie streaming and video games**.
- **Extension of moratorium:** **Originally**, it was planned to be **temporary**, but the tariff moratorium has been **renewed roughly every two years at each WTO ministerial conference**.
 - It was **most recently extended at the 13th Ministerial Conference (2024)**.
 - It is to be reconsidered at the 14th Ministerial Conference in Yaounde, Cameroon.
- **India's stand on extension:** India believes that its extension would **deprive it of tariff revenue to fund infrastructure and close the digital divide**.

Zambezi River and Kariba Dam

News: A 500MW Floating Solar Plant is being designed to be installed at Kariba Dam to boost power supply in Zimbabwe.

About Zambezi River and Kariba Dam



Figure 10. Source: koamnewsnow

About Zambezi River

- The Zambezi River is the **fourth-longest river in Africa** (after Nile, Congo, Niger).
- **Origin:** It starts off in a **shallow depression in Angola's southern highlands**, at the source of a river called the **Lungwebungu**.
- **Length:** It has a total length of **3,421 km**.
- **Drains into:** It drains into the **Indian Ocean** via a 100-km-wide delta.

- **Countries covered:** It flows through **Angola, Zambia, Namibia, Botswana, Zimbabwe, and Mozambique**.

- **Tributaries:** The main tributaries of the Zambezi River include the **Shire, Kafue, Luangwa, Kabompo, and Cuando (Kwando) rivers.**
- **Waterfalls:** The river is known for several notable waterfalls, including **Victoria Falls, one of the world's largest waterfalls,** and the **Chavuma Falls on the Zambia-Angola border.**
- **Famous Dams:** Cohara Bassa and **Kariba Dams**

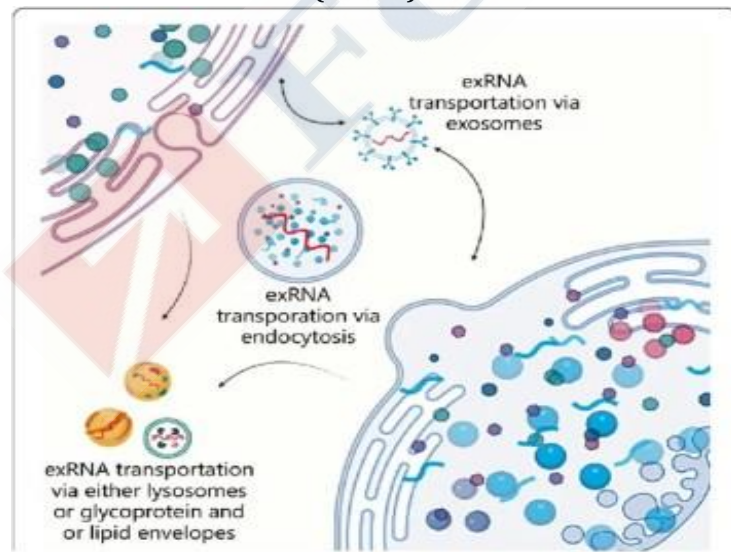
About Kariba Dam

- **Location:** The Kariba dam is a **double curvature concrete arch dam** in the **Kariba gorge** of the **Zambezi river basin** between **Zambia and Zimbabwe.**
- **Size:** It stands about **128 m tall** and stretches around **617 m in length.**
- It was **constructed between 1956 and 1959.**
- It has **created Lake Kariba, the largest man-made lake in the world by reservoir storage capacity,** holding 181 cubic kilometers of water.
- It can **generate around 1,700 MW of electricity for Zambia and Zimbabwe.**
 - Each country has its **own power station,** one on the north bank and one on the south bank of the dam.

Extracellular RNA (exRNA)

News: In a study, scientists reported that extracellular RNA (exRNA) from bacteria can persist in disinfected drinking water.

About Extracellular RNA (exRNA)



- Extracellular RNA (exRNA) are RNA that exists outside cells.
- They are found in body fluids such as blood, saliva, urine, and cerebrospinal fluid.
- They are heterogenous populations including small (e.g., miRNA) and long non-coding RNAs and coding RNAs (e.g., mRNA).

Figure 11. Source: ResearchGate

- They can exist in a free form or associate with carriers range from lipo- and ribo-proteins to extracellular vesicles such as exosomes in the extracellular fluids.
- To survive outside the cell, exRNA travels in its own molecular containers that prevent enzymes from breaking it down before it reaches its destination.
- **Functioning:** They are part of a sophisticated long-distance cell-to-cell communication system.
 - A cell releases RNA to deliver instructions to another cell elsewhere in the body, changing how it behaves or which genes it activates.
 - This process helps coordinate responses in the immune system, tissue repair, and development.
- **Applications:** The exRNAs have been widely studied as a biomarker for cancer and other diseases.