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INDIA'S RESERVOIRS FALL BELOW HALF CAPACITY: CWC DATA

Context

- **The Central Water Commission (CWC)**, which monitors 166 reservoirs and 20 river basins across India, has flagged a sharp decline in water levels in its latest data.

About

- **The total live storage capacity** of the 166 reservoirs monitored by the CWC is **183.565 billion cubic metres (BCM)**, accounting for about **71.2%** of the country's estimated total capacity of 257.812 BCM.
- Water levels in India's major reservoirs have **fallen to below 45% of total capacity**.
 - ♦ **Several reservoirs** have reached **critically low or zero levels**.
- **Most of India's 20 river basins** are now operating between **30% and 60%** of capacity, with only a few above that range. In Bihar, the Chandan dam has run completely dry.
- **Southern India** has seen the steepest drop, raising concerns ahead of peak summer.
- Overall, the data suggests a **widespread decline in water levels**, with the risk of a **summer water shortage rising**, particularly in the south and west.

Water reservoirs

- Water reservoirs are **natural or artificial storage spaces** where water is collected and stored for future use.
 - ♦ They include rivers, lakes, glaciers, groundwater aquifers, dam reservoirs, tanks, and canals.
 - ♦ They play a crucial role in ensuring a **steady supply of water for various purposes**.
- **Reasons for Decline in Capacity:**
 - ♦ **Siltation (Sediment Deposition):** Accumulation of silt and debris reduces storage capacity over time.
 - ♦ **Catchment Area Degradation:** Deforestation, mining, and overgrazing increase soil erosion and sediment inflow.
 - ♦ **Encroachment & Urbanisation:** Illegal occupation of reservoir areas and feeder channels reduces effective storage.
 - ♦ **Eutrophication & Aquatic Weeds:** Nutrient pollution leads to excessive growth of algae and weeds, occupying space.

- ♦ **Climate Variability:** Erratic rainfall and droughts reduce inflow and accelerate sedimentation.

Water scarcity in India

- India has **18%** of the world's population but only **4%** of its freshwater.
- The World Bank calls India one of the **most water-stressed countries**.
 - ♦ Many parts of India could face **severe water scarcity by 2040** because of growing demand, poor management, and climate change.
- According to the **Annual Ground Water Quality Report 2024** by the **Central Groundwater Board (CGWB)**, the average stage of groundwater extraction in India stands at **60.4%**.

Major Causes of Water Scarcity

- **Rapid urbanisation and industrialisation** have led to increased pollution of water bodies, making them unfit for consumption.
- **Inefficient agricultural practices and excessive groundwater extraction** have depleted crucial water sources.
- **Climate change** further aggravates the situation, causing irregular rainfall patterns and affecting the recharge of rivers and aquifers.
- **Poor water management** and lack of proper infrastructure also play a significant role in exacerbating the crisis.

Water Governance in India

- **Constitutional Provisions**
 - ♦ **State Subject:** Water is primarily under **Entry 17 of State List (Seventh Schedule)**.
 - ♦ **Union Role:** Regulation of inter-state rivers under **Entry 56 of Union List**.
 - ♦ **Article 262:** Parliament can adjudicate inter-state water disputes.

Key Issues in Water Governance in India

- **Fragmented Institutional Framework:** Water governance in India is highly fragmented due to its placement in the State List, which leads to jurisdictional conflicts between states.
- **Predominance of Engineering-Centric Approach:** Water management policies in India have historically focused on large-scale infrastructure such as dams, canals, and irrigation systems.

- ♦ This approach prioritises supply augmentation while neglecting ecological sustainability and demand management.
- **Agricultural Policies:** Agricultural policies promoting water-intensive crops such as rice and wheat have led to excessive groundwater extraction.
- **Lack of Ecosystem-Based Approach:** Water governance does not adequately incorporate the interlinkages between land, water, and ecosystems.
 - ♦ Environmental flows (e-flows) are often ignored, leading to degradation of rivers and wetlands.
- **Weak Data Systems:** There is a lack of reliable, comprehensive, and accessible water data across the country.
 - ♦ This leads to poor planning, inefficient allocation, and unregulated extraction of water resources.
- **Neglect of Demand-Side Management:** Water policies largely focus on increasing supply rather than managing demand.
 - ♦ Limited attention is given to water-use efficiency, conservation practices, and rational pricing.
- **Upcoming concerns:** India's data centre boom confronts a water challenge as predictions state that 60–80% of India's data centres will face high water stress this decade.
 - ♦ Most of these centres are built in cities such as Mumbai, Chennai, Hyderabad, and Bengaluru, places where water is already in short supply.

Government Initiatives

- **Jal Shakti Abhiyan (2019):** Focuses on water conservation and groundwater recharge in water-stressed districts.
- **AMRUT 2.0 scheme** was launched in the 2021 in all Urban Local Bodies (ULBs)/ cities, enabling the cities to become 'self-reliant' and 'water secure'.
 - ♦ Rejuvenation of water bodies and development of green spaces and parks are other components of the mission.
- **Amrit Sarovar Mission:** Aims to develop and rejuvenate 75 water bodies per district.
- **National Aquifer Mapping Program (NAQUIM):** Helps delineate and understand aquifers for sustainable management.
- **Atal Bhujal Yojana**, was launched to improve groundwater management in priority areas with critical and overexploited blocks.
- **Jal Jeevan Mission (JJM):** To enable every rural household in the country to have assured potable water; since 2019, Government in partnership with states, is implementing Jal Jeevan Mission (JJM).
 - ♦ This initiative facilitates adequate quantities of prescribed quality water on a regular and long-term basis, through tap water connection.

Conclusion

- There is a need to move from a **fragmented and engineering-dominated approach** to a comprehensive governance framework.
- Water must be treated as a shared and finite resource, requiring coordinated management across sectors.
- The focus should shift from **supply augmentation to sustainability, efficiency, and equity.**

Source: DTE

WOMEN'S RESERVATION IN LEGISLATURES

Context

- PM Modi has emphasized that reservation for women in legislative bodies is essential to make Indian democracy more vibrant, inclusive, and participative.

Political Representation of Women in India

- The percentage of women MPs in the Lok Sabha had been very low between **5% and 10% till 2004**.
- It rose marginally to **12% in 2014** and currently stands at **14%** in the 18th Lok Sabha, which is **lower than the global average of 24 percent**.
- The representation in State Legislative Assemblies is even poorer with the national average being around 9%.
- As of 2024, **India ranked 143** in the list of countries in the '**Monthly ranking of women in national parliaments**' published by the Inter-Parliamentary Union, a global organisation for national parliaments.

Reservation for Women in India

- The Constitution 73rd and 74th Amendment Acts, mandated the reservation of **one-third of seats for women** in Panchayati Raj institutions and offices of the chairperson at all levels of Panchayati Raj institutions, and in urban local bodies respectively.

- ♦ Out of the total 1/3rd seats reserved for women, **33% had to be reserved for the Scheduled Castes and Scheduled Tribes.**
- **Women's Reservation in Legislatures:** The Nari Shakti Vandana Act (106th Constitutional Amendment) is a landmark law reserving **33%** of seats for women in the Lok Sabha, state legislative assemblies and the Legislative Assembly of the National Capital Territory of Delhi, including those reserved for **SCs and STs.**

Reasons of Lower Representation of Women

- **Gender Bias:** Despite progress, many women encounter stereotypes that question their competence and leadership abilities.
- **Work-Life Balance:** Balancing professional responsibilities with traditional family roles can be particularly demanding, often leading to burnout.
- **Harassment and Discrimination:** Workplace harassment remains a significant issue, creating hostile environments that discourage women from asserting themselves.
- **Cultural Expectations:** Societal norms impose additional pressures on women, such as expectations to conform to traditional roles, which conflict with career ambitions.
- **Networking Challenges:** Male-dominated networks make it difficult for women to establish connections that are crucial for career growth.

Significance of Women Representation

- **Diverse Perspectives:** Women bring unique experiences and viewpoints that contribute to more comprehensive decision-making, leading to better solutions and innovation.
- **Role Models:** Increased visibility of women in leadership roles inspires younger generations and helps challenge stereotypes about gender roles.
- **Equity and Justice:** Fair representation promotes gender equality, ensuring that women's voices and needs are considered in policymaking and organizational decisions.
 - ♦ Some recent studies on panchayats have shown the **positive effect of reservation on empowerment of women** and on allocation of resources.
- **Balanced Policies:** Women's involvement in governance can lead to policies that address issues specifically affecting women and families.
- **Economic Growth:** Empowering women and ensuring their representation can significantly

contribute to economic development, as it expands the talent pool and encourages inclusive growth.

- **Cultural Change:** Increasing women's representation can challenge societal norms and promote a culture of equality, benefiting society as a whole.

Conclusion

- Women's reservation in legislatures is not merely a political reform but a structural transformation aimed at deepening democracy.
- Ensuring women's participation in governance is essential for achieving a more equitable, representative, and vibrant democratic system.

Source: AIR

INDIA WITHDRAWS BID TO HOST COP 33 IN 2028

Context

- India has withdrawn its candidature to host COP33 (2028) under the United Nations Framework Convention on Climate Change process.

Possible Reasons for Withdrawal

- **Administrative Burden:** Hosting a COP event requires substantial infrastructure, security, and financial expenditure.
 - ♦ Preparations for other large-scale international events, such as the proposed **2030 Commonwealth Games in Ahmedabad**, will require similar administrative and financial resources.
- **Political Timing:** The year 2028 falls close to the **2029 Lok Sabha elections**, which is a period marked by intense administrative, political, and logistical engagements.

Impact of India withdrawal

- India's withdrawal from hosting COP33 results in the loss of an important global platform to project itself as a leader of the **Global South in climate negotiations.**
- India **loses an opportunity** to **highlight its progress in renewable energy**, energy transition, and sustainable development initiatives before the global community.
- The decision may **limit global attention on the climate vulnerabilities of South Asia**, which is one of the most climate-sensitive regions.

- Hosting such global events helps in **mobilising climate finance, technology transfer, and international collaborations**, which may now be relatively constrained.

What is COP (Conference of Parties)?

- The Conference of Parties (COP) is the annual supreme decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC).
 - ♦ It brings together **nearly 200 countries** to negotiate global climate action, climate finance, and emission reduction commitments.
 - ♦ The **first COP session** was held in **Berlin, Germany, in March 1995**.
- **Meeting:** The COP **meets every year**, unless the Parties decide otherwise.
 - ♦ **The COP Presidency rotates** among the five recognized UN regions: **Africa, Asia-Pacific, Latin America and the Caribbean, Central and Eastern Europe and Western Europe and Others**.
 - ♦ **The COP meets in Bonn**, unless a Party offers to host the session.

United Nations Framework Convention on Climate Change

- UNFCCC is one of the three **Rio Conventions**, which were adopted at the **Earth Summit 1992** alongside the Convention on Biological Diversity (CBD) and the Convention to Combat Desertification (UNCCD).
 - ♦ The convention entered into force in **1994**.
- **The primary objective** of the UNFCCC is to stabilize greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic interference with the climate system.
- **Secretariat:** The UNFCCC secretariat is headquartered in **Bonn, Germany**.
- **Major Instruments: It is the parent treaty to two major legal agreements:**
 - ♦ **Kyoto Protocol (1997):** Set the emission targets for developed countries.
 - ♦ **Paris Agreement (2015):** A landmark universal agreement aiming to limit global warming to well below **2°C**, preferably **1.5°C**, above pre-industrial levels.
- **Financial Mechanisms:** Manages and coordinates funds such as the Green Climate Fund (GCF), the Global Environment Facility (GEF), and the Adaptation Fund to assist developing nations.

Recent COP Meetings

- **COP27:** Held in Sharm El Sheikh, Egypt (2022).
- **COP28:** Held in Dubai, UAE (2023), resulting in the “UAE Consensus” focused on transitioning away from fossil fuels.
- **COP 29:** held in Baku, Azerbaijan (2024)
- **COP 30:** Held in Belém, Brazil (2025)
- **COP 31:** Scheduled for Antalya, Türkiye (2026)

Source: DTE

DRAFT MASTER PLAN FOR GREAT NICOBAR ISLAND PROJECTS

Context

- **The draft master plan for developing the Great Nicobar Island (GNI)** has proposed to focus on **tourism as the “primary economic driver”** of growth.

Great Nicobar Island project

- The project received **Stage-I clearance in 2022**.
- **Implementing authority:** The project is being implemented by the Port Blair-based Andaman and Nicobar Islands Integrated Development Corporation Ltd (**ANIIDCO**).
- **The Project involves** developing an **International Container Transshipment Terminal (ICTT)**, an international airport, township development, and a **450 MVA gas and solar-based power plant** on the island.
 - ♦ The site for the ICTT and power plant is **Galathea Bay** on the southeastern corner of Great Nicobar Island, where there is no human habitation.

The Andaman and Nicobar Islands Integrated Development Corporation (ANIIDCO)

- **ANIIDCO is a quasi-government agency**, incorporated in **1988** under the Companies Act.
- **Its objective** is to develop and commercially exploit natural resources for the balanced and environment friendly development of the territory.
- **Its main activities** include trading of petroleum products, Indian made foreign liquor and milk, managing tourism resorts and infrastructure development for tourism and fisheries.

Highlights of the Draft Plan

- The plan has been drafted for a projected population of **3.36 lakh by 2055**.

- ♦ By that time, the master plan is expected to **achieve an annual inflow of more than a million tourists.**
- **It proposes a township divided into several clusters:** an administrative and institutional cluster, a multi-modal logistic cluster (to include airport, port, freight and passenger terminals, defence area, and green development), and tourism clusters.
- The development will start with **“anchor projects”** such as the International Container Transshipment Port (ICTP), the Great Nicobar International Airport, and the GNI gas and solar power plants from **2025 to 2029.**
- **The second part of Phase 1 (2030-2035)** is expected to see growth in tourism activity and upgraded infrastructure.
- **Phase 2 (2036-2041)** envisages a phase of consolidation and enhanced growth of tourist traffic and the opening of opportunities for other potential economic drivers.
- **The last phase (2042-2047)** has been earmarked for “future development”.

Concerns over the project

- **Ecological Fragility:** Large-scale diversion of pristine tropical forests threatens a highly fragile island ecosystem with low carrying capacity.
- **Biodiversity Loss:** Destruction of habitats may endanger endemic species.
- **Economic Viability Concerns:** Experts questioned the economic feasibility of the project, given the high costs and ecological sensitivity of the region.
- **Indigenous Rights Violation:** The project allegedly violates the rights of the **Shompen**, a Particularly Vulnerable Tribal Group (PVTG) of hunter-gatherers. The disruption of their traditional lands and lifestyle raises human rights concerns.
- **Volatile Zone:** The proposed port is situated in a seismically active zone that experienced a significant geological event during the 2004 tsunami, leading to concerns about the safety and long-term stability of the infrastructure in such a location.

Significance of the Project

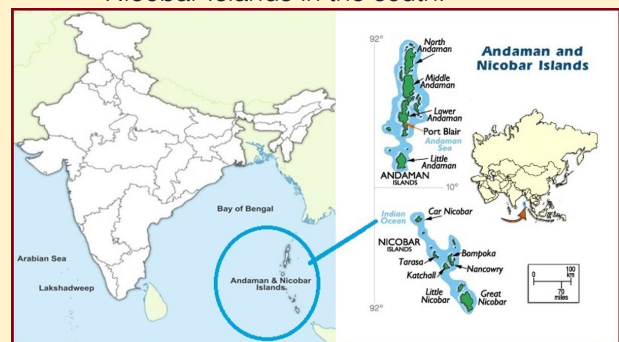
- **Strategic Maritime Location:** Its proximity to the Strait of Malacca enhances India's ability to monitor one of the world's busiest sea lanes.
- **Strengthening National Security:** Development of dual-use infrastructure (port and airport)

improves India's defence logistics, surveillance, and naval reach in the Indo-Pacific.

- **Global Trade Hub Potential:** The transshipment port can reduce India's dependence on foreign ports (like Singapore/Colombo) and position India as a major logistics hub.
- **Economic Development of Island Region:** Infrastructure, connectivity, and urban development can boost investment, employment, and tourism in the Andaman & Nicobar region.
- **Blue Economy Promotion:** It supports sustainable use of ocean resources such as shipping, fisheries, and marine-based industries, aligned with India's blue economy goals.
- **Regional Connectivity and Act East Policy:** Enhances connectivity with Southeast Asia, reinforcing India's engagement under its Act East Policy and Indo-Pacific vision.

Andaman and Nicobar Islands

- **Location:** The islands are located 1,300 km southeast of the Indian mainland in the Bay of Bengal.
 - ♦ It extends from 6° 45' N to 13° 41' N and from 92° 12' E to 93° 57' E.
- This archipelago is composed of more than 500 big and small islands, which are divided into two distinct groups of islands – **The Andaman Islands and the Nicobar Islands.**
 - ♦ **‘Ten Degree Channel’** separates the Andaman Islands in the north from the Nicobar Islands in the south.



Facts Related to Andaman and Nicobar Islands

- The Southernmost Island is Great Nicobar whose **southernmost tip is only 150 km away from Sumatra, Indonesia.**
- The highest point is **Saddle Peak** in North Andaman (732 metre), **Mount Thullier** in Great Nicobar (642 metre).
- **Pandanus or Nicobar Breadfruit** is a rare fruit found in the Andaman and Nicobar islands.

- **Barren Island of the Andaman & Nicobar** Island group is the only confirmed active volcano not just in India but the whole of South Asia.
- **Indira Point in Great Nicobar** is the Southern-most point of India.

Source: TH

NEWS IN SHORT

MAHATMA JYOTIRAO PHULE

Context

- Prime Minister Narendra Modi paid tributes to Mahatma Jyotirao Phule on his birth anniversary.

About Jyotirao Phule

- **Birth:** On **11th April, 1827** in Khatgun village which is today in the Satara district of **Maharashtra**.
- **Title:** His family belonged to the 'mali' caste and their original title was '**Gorhay**'. On May 11, 1888, he was bestowed with the title of **Mahatma** by a Maharashtrian social activist Vithalrao Krishnaji Vandekar.
- **Ideology and influence:** His ideology centered around **liberty, egalitarianism, and socialism**. He drew inspiration from **Thomas Paine's** book **The Rights of Man**.
- **Marriage:** He was married off when he was only 13 with **Savitribai**. The couple went on to establish the country's **first school for girls** in Bhidewada, Pune, in 1848.
- **Balhatya Pratibandhak Griha:** In **1863**, Jyotirao and Savitribai began Balhatya Pratibandhak Griha, India's first home dedicated to prohibiting infanticide and supporting pregnant Brahmin widows and rape victims.
- **Satyashodhak Samaj:** Phule along with his followers formed **Satyashodhak Samaj in 1873** which meant 'Seekers of Truth' and was dedicated towards the removal of the socio-economic backwardness of Dalits.
 - ♦ It is believed that it was Phule who **first used the term 'Dalit'** for the depiction of oppressed masses often placed outside the '**varna system**'.
- **Literary works:** Gulamgiri (Slavery), Shetkarayacha Aasud (Cultivator's Whipcord), and Tritiya Ratna.
- **Source:** PIB

PROJECT GLASSWING

Context

- Anthropic has launched Project Glasswing, a global cybersecurity initiative linked to its advanced AI model Claude Mythos.

What is Project Glasswing?

- Project Glasswing is a global cybersecurity initiative led by **Anthropic**.
- It is a **consortium of around 40 global technology firms** and open-source contributors aimed at securing critical digital infrastructure, using advanced Artificial Intelligence.
- The project **provides early access to the Claude Mythos model** to selected partners. It is backed by;
 - ♦ \$100 million in AI usage credits,
 - ♦ \$4 million support for open-source security.
- **Major participating firms include:** Amazon Web Services, Apple, Google, Microsoft, NVIDIA etc.

Role of Claude Mythos

- Claude Mythos is an **advanced Large Language Model (LLM)** with exceptional coding and vulnerability detection capabilities. It can;
 - ♦ **Detects zero-day vulnerabilities** (previously unknown flaws).
 - ♦ **Identify decades-old bugs** in widely used systems.
 - ♦ **Combine vulnerabilities** to gain system-level control.

Source: TH

ZOROASTRIANISM

Context

- The decline of the gray wolf in Iran is deeply rooted in ancient Zoroastrian ethos, where the wolf was viewed as an evil creature.

What is Zoroastrianism?

- Zoroastrianism is one of the **world's oldest monotheistic religions**, founded by **Zarathustra (also known as Zoroaster)**.
- It originated in ancient **Persia (modern-day Iran)** around **1500–1000 BCE**.
- Centered on the worship of one supreme God, **Ahura Mazda (Wise Lord)**, it emphasizes a cosmic struggle between good and evil, promoting an ethical life based on "**Good Thoughts, Good Words, Good Deeds**".

- **Holy Book:** The **Avesta**, which contains the **Gathas (hymns written by Zoroaster)**.
- **Worship & Purity:** Fire is a central symbol of purity and divine light, representing Ahura Mazda's wisdom. Fire temples are used for worship.

Decline and Contemporary Presence

- Following the Islamic conquest of Persia in the 7th century CE, **Zoroastrianism gradually declined** as the dominant religion in Iran.
 - ♦ At present, small Zoroastrian communities continue to reside in Iran.
- **Presence in India:** Between the 8th and 10th centuries CE, groups of Zoroastrians migrated from Persia to India and came to be **known as the Parsis**.
 - ♦ They are an officially recognized **religious minority in India**, comprising one of the smallest, yet most influential, communities with roughly 57,264 members as of 2011.

Source: DTE

INDUS RIVER DOLPHIN

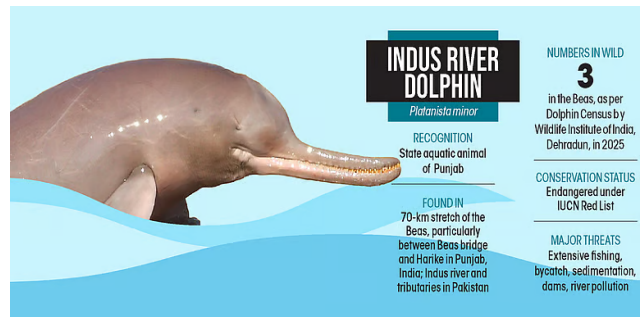
Context

- The dolphin is one of the world's most endangered freshwater cetaceans and a flagship species of the **Indus river system**.

Indus River Dolphin

- **Cetaceans** are aquatic mammals which include whales, dolphins and porpoises.
- **Indus River Dolphin** was once distributed across the **Indus and its tributaries in Pakistan and northwestern India**.
 - ♦ But its range has drastically contracted due to flow regulation, loss of connectivity, pollution, climate change and entanglement in fishing gears.

- The Indus river dolphin is **functionally blind**, it relies entirely on **echolocation to navigate, hunt and avoid obstacles**.



Source: DTE

MICROBIAL METHANE

Context

- As per a new study, **Microbial methane** leaking from non-producing oil and gas wells is being emitted at rates **nearly 1,000 times higher than previously estimated**.

About

- **Microbial methane (or biogenic methane)** is **methane gas** produced by microorganisms, specifically **archaea** known as **methanogens**.
- It is produced through the **decomposition of organic matter** in oxygen-depleted (anaerobic) environments.
- It is a major component of the **global carbon cycle**, generated in wetlands, rice paddies, landfills and digestive systems of ruminants.
- Methane is a powerful **greenhouse gas** when released into the atmosphere, regardless of its origin.

Source: DTE