

Sedimentation Crisis Undermines India's Reservoirs: Study

IISER Bhopal study examined government records for more than **300 large reservoirs** with storage exceeding **100 million cubic meters**.

Key Finding of Study

- Dams in India have **lost nearly 50% of their storage capacity to sedimentation**, cutting power generation and **weakening flood and drought protection**.
- By 2050, many more particularly in the **Himalayan region, Narmada-Tapi basin, Western Ghats, and Indo-Gangetic Plains** are expected to reach this level.
- Primary causes of this sedimentation include **agriculture-driven soil erosion, deforestation, and flooding**.

About Dams in India and other associated Safety Concerns

- India is the **3rd largest dam-owning nation** in the world after **China and USA**.
- There are around **5700 large dams in India**.
- **Key Concerns associated with safety of Dam:**
 - ⊕ **Ageing Dams:** 80% of large dams in India are already 25 years old.
 - ⊕ **Seismic Vulnerability:** Large dams in India are often built in seismically active areas.
 - ⊕ **Poor Financial Situation:** Translates into irregular maintenance and upkeep of other parts of the power plant.

Way Ahead to Ensure Dam Safety

- **Decommissioning** of ageing dams.
- Using current **state-of-the-art technology** related to dam safety.
- Countries like **Japan** have created **multiple sub-surface dams** as an alternative to surface dams.
- Prioritizing **immediate attention and management interventions** for reservoirs classified as having high or very high vulnerability.

Initiatives for Dam Safety

- **Dam Safety Act 2021:** Provide for surveillance, inspection, operation and maintenance of specified dams.
- **Dam Rehabilitation and Improvement Project (DRIP):** Funded by the World Bank.
- **National Centre for Earthquake Safety of Dams:** Will enhance the Structural and Earthquake Safety of Dams in India.
- **Others:** Dam Health and Rehabilitation Monitoring Application (DHARMA), **National Register of Large Dams (NRLD)**, etc.

World's First AI Minister Appointed In Albania

Diella, an **AI-generated bot** will manage and award all public tenders for government projects, aiming to enhance transparency and minimize corruption.

Role of AI in Public Service and Governance

- **Enhanced Decision-Making:** AI improves efficiency in healthcare, urban planning, traffic, and pandemic response.
 - ⊕ E.g., tools like **RAHAT app** optimize relief operations during disasters.
- **Objectivity and Anti-Corruption:** Automated systems reduce discretionary bias in welfare and service delivery.
- **Public Interaction:** AI chatbots and apps like **UMANG** manage large citizen inquiries and grievance redressal.
- **Inclusivity and Accessibility:** Platforms like **Bhashini** enable multilingual access to government services.

Issues with AI in Public Service

- **Undermining Democracy:** AI aids governance but cannot replace elected officials' **legitimacy and accountability** to public.
- **Social Justice:** E.g., a **misflagged beneficiary** in an **AI-driven Direct Benefit Transfer system** could affect access to welfare, healthcare, and justice.
- **Bias and Discrimination:** AI mirrors training data biases. For E.g., US predictive policing tools have **targeted minorities** disproportionately.
- **Transparency and Accountability:** Many advanced AI models operate as **black boxes** (non-transparent reasoning), making their underlying mechanisms opaque.
- **Other Challenges:** **No clear laws** to assign blame for AI errors; **Privacy and data sovereignty** issues, etc.

AI can be a **powerful tool** for efficient and inclusive governance, but it **must function under strong ethical and democratic safeguards** to ensure accountability and public trust.



India's Rising Non-Communicable Disease (NCD) Mortality Contrasts Global Declines: Lancet Study

The study tracked global progress to reduce deaths from chronic or 'non-communicable' diseases (NCDs) in 185 countries from 2010-2019.

Key Findings Related to India

- **Increased Mortality Risk:** India experienced an **increase in fatalities from non-communicable diseases (NCDs)**, such as cancer, diabetes, and heart disease, between 2010 and 2019.
 - ⌚ Probability of dying from an **NCD between birth and age 80 rose** in India, while it **decreased** in high-income Western and East Asian countries.
- **Specific Diseases and Demographics:** Heart disease and diabetes are identified as the topmost risk factors in India, with deaths from both increasing.

About Non Communicable Diseases (NCDs)

- **Definition:** Chronic diseases that are not transmissible from one person to another.
- **Main types of NCDs:** Cardiovascular Diseases (e.g. heart attacks and Stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.
- **Burden of NCDs in India:** The share of deaths due to NCDs in India rose from **37.9% in 1990 to 63% in 2018**.
- **Causes of NCDs in India:**
 - ⌚ **Lifestyle and Preventable Risk Factors:** E.g., Poor diet, lack of exercise, and substance abuse.
 - ⌚ **Societal and Environmental Factors:** E.g., Urbanization, globalization, ageing population and poverty promote unhealthy lifestyles.
 - ⌚ **Other:** Pollution (ambient and indoor), chronic stress etc.

Initiatives for NCDs in India

- **Eat Right India Movement** by FSSAI promotes healthy eating.
- **Fit India Movement:** Launched in 2019 aims to promote a physically active lifestyle.
- **National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD).**
- **Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PM-JAY)**

Tackling NCDs requires a multi-sectorial approach, **stronger primary healthcare, and the use of digital tools** for early detection and management. Policy reforms, **fiscal measures, and sustained investments** are essential to reduce risks and save lives.

Strategic Mineral Mining Projects Exempted From Public Hearing Under EIA

On the request of the Ministry of Defence and the Department of Atomic Energy, the Ministry of Environment, Forest and Climate Change (MoEFCC) exempted mining projects linked to national defence from public hearings under the **Environmental Impact Assessment (EIA), 2006** process.

- Exempted projects include mining of **atomic minerals** (uranium, thorium, monazite, etc.) and **critical/strategic minerals** (lithium, cobalt, rare earth elements, etc.) notified under the **Mines and Minerals (Development and Regulation) Amendment Act, 2023**.

Why These Projects Were Exempted?

- **National Security & Strategy:** These minerals are tied to India's defense, nuclear energy, and other sensitive sectors.
- **To Cut Imports:** Secures domestic lithium, cobalt, rare earths, uranium to reduce foreign reliance, esp., **China**.
- **Attract Investment:** Streamlines clearances for quicker, predictable business for investors.

Issues with Exempting Public Consultation

- **Undermines Legal Mandate:** Public consultation is a **statutory requirement** under EIA, 2006.
- **Erodes Transparency and Accountability:** Communities may remain unaware of projects, **weakening democratic oversight**.
- **Triggers Conflict:** Absence of early engagement can lead to protests, litigation, or unrest.
- **Precedent for Dilution of EIA Norms:** Frequent exemptions set a precedent, diluting environmental governance.



Environmental Impact Assessment (EIA)

- **About:** The EIA notification, 2006 was issued under **Environmental (Protection) Act, 1986**.
- **Objectives:** Predicts and evaluates **environmental impacts** of proposed projects on local communities and ecology, ensuring **early identification** of adverse effects.
- **Steps of EIA process** include Screening, Scoping, Public Consultation, Appraisal, etc.
- **Significance:** Acts as a **decision-making tool** for governments to approve, modify, or reject projects, **balancing development with environmental protection** and public interest.

Green finance backbone of resilient economies: Union Minister for Environment, Forests, and Climate Change

Green financing refers to **providing financial support for projects for renewable energy**, energy-efficient buildings, sustainable infrastructure, and other initiatives.

- It involves **restructuring capital flows so that every investment** not only yields **economic returns** but simultaneously strengthens **sustainability**.

Significance of Green Financing

- Meeting Emission Targets:** India needs over **USD 10 trillion by 2070** to meet net-zero targets.
- Enhances National Security & Competitiveness:** Through clean power, climate-smart agriculture and resilient infrastructure.
 - Enables **leadership in future value chains**, making India a hub for green industries.
- Job Creation:** India is set to **create a huge number of green jobs** i.e., around 7.3 million by the financial year 2027-28 and **35 million by the year 2047**.
- Other:** Environmental gains, ensuring just transition, developing disaster resilience, etc.

Challenges Related to Green Financing

- Regulatory Barriers and Policy Uncertainties:** Energy (Concurrent subject) faces inconsistent policy implementation across states and sectors.
- Limited Environmental, Social, and Governance (ESG) expertise** in financial institutions.
- Cost of Financing:** For a 100 MW solar PV project, **India's rate is 10.0-11.5%** compared to around **2.8% in Germany** and **5.3% in the United States**.
- Finance Deficit:** India's green bond issuances (USD 21 billion till 2023) remain small compared to its renewable energy targets (~500 GW by 2030).

Initiatives taken for Green Financing

- Global:**
 - Green Climate Fund (GCF):** Developed countries pledged to mobilise US\$ 100 billion per year by 2020.
 - Special Climate Change Fund (SCCF):** To finance projects relating to: adaptation; technology transfer and capacity building; energy, transport, etc.
- India:**
 - Green Social, Sustainability and Sustainability-linked (GSSS) Bonds:** Which includes green, yellow (solar) and blue (marine) bonds.
 - Climate Change Finance Unit (CCFU):** Under Ministry of Finance to act as the nodal agency for climate change financing matters.

Also in News



Commonwealth Parliamentary Association (CPA)

Lok Sabha Speaker inaugurated the **11th Commonwealth Parliamentary Association (CPA) India Region Conference**, in Bengaluru.

About The CPA

- It is one of the oldest established organisations in the Commonwealth.
- Genesis:** Founded in 1911.
- Members:** Over 180 Legislatures or Branches; (India is a member).
- Headquarters Secretariat:** Houses of Parliament(UK), London.
- Objective:** It offers a vast opportunity for Parliamentarians to collaborate on issues of mutual interest and to share good practice.



Merger of Companies

Merger process in respect of **two or more unlisted companies, holding and subsidiary companies** have been amended.

About Merger of Companies

- A merger is an **agreement where two existing, independent companies combine to form a new, singular legal entity**.
- Mergers can take **several forms**, such as horizontal (companies in the same industry), vertical (companies in the same supply chain), and conglomerate (companies from different sectors).
- Companies Act, 2013** allows mergers/demergers.
- National Company Law Tribunal (NCLT):** NCLT is the primary authority **responsible for approving mergers and demergers**.
- Significance:** Ease of doing business, reduce compliance burden, etc.



Fast Track Immigration - Trusted Traveller Programme (FTI-TTP)

The **Union Home Minister** virtually inaugurated FTI-TTP at Lucknow, Thiruvananthapuram, Trichy, Kozhikode, and Amritsar airports.

About FTI-TTP

- Purpose & Benefit:** Designed to streamline immigration at Indian airports so that registered travellers can clear immigration in about 30 seconds, avoiding queues and manual checking.
- Rollout & Reach:** Launched in **2024** at Delhi, then extended to **13** other airports.
- Eligibility:** Indian Nationals and Foreign Nationals holding **OCI Card**.



Disaster Risk Index (DRI)

Himachal Pradesh Chief Minister stressed on reframing the **Disaster Risk Index (DRI)** in a meeting with **16th Finance Commission**.

About Disaster Risk Index (DRI)

- Developed by:** 15th Finance Commission.
- Aim:** To bring objectivity in **resource allocation (fiscal federalism)** and take note of disaster risk faced by the states.
- Coverage:** 14 hazards, 14 vulnerabilities and 2 exposures are covered.
 - Hazards include:** Earthquake, Cyclone, Flood, Drought, etc.
 - Vulnerabilities:** Rural/Urban poor, vulnerable children, vulnerable women, etc.
 - Exposures:** Population and GDP are the two parameters considered.



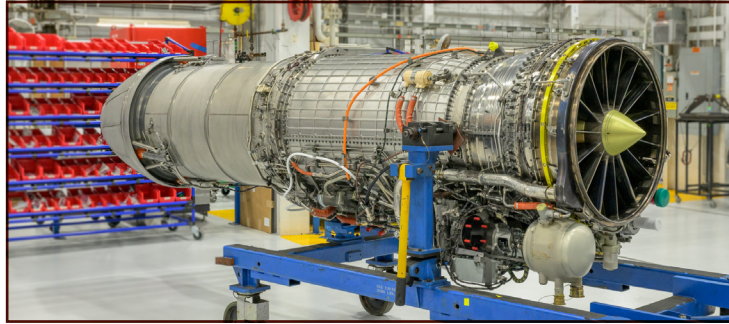
F404-IN20 Engine

HAL has received the 3rd of 99 F404-IN20 engines, ordered from US firm GE Aerospace.

➤ **Engine supply stability** is critical for HAL to meet its delivery schedule of Tejas Mk-1As.

About F404-IN20 Engines

- **Type & Origin:** Afterburning turbofan engine, customized for India's LCA Tejas Mk-1A fighter aircraft.
- **Power & Performance:** Produces around 85 kN thrust, giving Tejas high subsonic/supersonic capability.
- **Versatile Military Application:** Powers a wide range of aircraft, from subsonic attack to high-altitude interception missions.



Exercise Siyom Prahar

The Indian Army conducted Exercise Siyom Prahar in Arunachal Pradesh.

About Exercise Siyom Prahar

- **Aim:** To validate **drone integration** in tactical operations under battlefield-like conditions.
- **Drone types used:** For surveillance, battlefield reconnaissance, target acquisition, and precision strikes.
- **Significance:** Helped develop new **tactics, techniques, and procedures (TTPs)** for integrating drone inputs with conventional firepower, joint targeting, and rapid decision-making in dynamic scenarios.

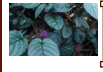


AdFalcivax Vaccine

Government of India has licensed private firms to produce its first indigenous multi-stage malaria vaccine, **AdFalcivax**.

About AdFalcivax Vaccine

- **Developed by:** Indian Council of Medical Research (ICMR).
- **Mechanism:** Targets **Plasmodium falciparum** (Deadliest malaria parasite Species) at **multiple stages**, unlike existing vaccines that cover only one.
- **Properties:** It is a **Recombinant Chimeric Vaccine** that combines antigens from different parasite stages into a single immunogen using **recombinant DNA technology**.
- **Advantages:** Dual-stage protection, longer immunity, and cost-effective production.



Murikooti Pacha

Indian researchers have harnessed the wound-healing potential of **Murikooti Pacha**.

About Murikooti Pacha

- It is the **red ivy plant**, locally known as **Murikooti Pacha** and **Vranaropani** in Sanskrit.
- **Origin:** Native to Southeast Asia, it is also found in other tropical regions including India.
- **Characteristics:**
 - ⌚ It is a **small herb** with rooting branches, **deep reddish leaves** and **white flowers**.
 - ⌚ The **wound-healing pad** contains a molecule, **acteoside**, a natural compound known for its **therapeutic potential**.



Personality in News



Acharya Vinoba Bhave (1895-1982)

Acharya Vinoba Bhave **Birth Anniversary** celebrated.

About Acharya Vinoba Bhave

- Born at **Gagode**, a tribal hamlet in **Maharashtra**.
- He is Considered as a **National Teacher of India** and The **Spiritual Successor Of Mahatma Gandhi**.

Key Contributions

- Participated In The **Quit India Movement** and was **first satyagrahi** in the **Individual Disobedience campaign**.
- He taught students at **Sabarmati ashram** and carried out experiments in **constructive work** like khadi, education and sanitation.
- To organise village-service, Vinoba **established Gram-seva Mandal** in 1934.
- He is Best Known For The **Bhoodan Movement(1951)**.
 - ⌚ It was a voluntary, non-violent socio-political movement in India aimed at **redistributing land to landless peasants**.
- **Literary Works:** 'Gitai' and 'Gita Pravachane', 'Sthitaprajna-Darshan' ('The Steadfast Wisdom'), 'Gitai Chintanika', 'Jnanadevanchi Bhajane', 'Ishavasya-Vrutti' 'Vichar-Pothi' and 'Swarajya-Shastra'.

Values: Austerity, Selflessness, Simplicity, Justice and Equity, etc.



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI