Today’s Prelims Topics

# New locations in ‘battle tourism’ map

## Context

The Indian Army in collaboration with the Ministry of Tourism, is launching **"Bharat Ranbhoomi Darshan"** to promote battlefield tourism.

## About Battle Field Tourism Initiative

* **Battle tourism** is the practice of visiting sites associated with war, such as battlefields, cemeteries, and memorials.
* The initiative aims to showcase 77 historically significant sites, including recent conflict zones like Galwan (2020) and Doklam (2017).
* **Objectives:**
  + **Tourism Promotion:** Integrate war memorials and museums to provide accurate historical narratives & Highlight sites through the **Incredible India** campaign.
  + **Socio-Economic Development:** Support local communities by promoting tourism in remote border regions.
  + **Awareness and Education:** Provide factual narratives of historic military events.

### Notable Battlefields Included

* **Northern Border:**
  + **Galwan Valley (Ladakh):** Site of the 2020 India-China border clashes.
  + **Dras & Kargil:** Known for the 1999 Kargil War.
  + **Siachen Base Camp:** World’s highest battlefield.
* **Eastern Border:**
  + **Bum La and Kibithu (Arunachal Pradesh):** Sites of past India-China engagements.
  + **Nathu La (Sikkim):** Scene of the 1967 India-China conflict.
* **Western Border:**
  + **Longewala (Rajasthan):** Site of the 1971 India-Pakistan war battle.

**Source:**

* [**Indian Express - Galwan to Siachen to Doklam**](https://epaper.indianexpress.com/c/76623250)

# Hamas accepts Draft agreement for Gaza Ceasefire

## Context

Hamas has agreed to a draft ceasefire agreement in the Gaza conflict, with final approval pending from the Israeli Cabinet. A recent **Lancet study** has reported over 64,000 deaths during the conflict period.

## About Draft Agreement

* **Phase 1:** Hostage Release and Initial Military Withdrawal
  + **Hostage Release:** 33 Israeli hostages would be released & In return, up to 1,000 Palestinian prisoners would be freed.
  + **Military Withdrawal:** Partial withdrawal of Israeli forces from Gaza would last for 60 days.
* **Phase 2:** Remaining Hostages and Complete Withdrawal. Negotiations to begin 16 days after Phase 1 implementation.
  + **Hostages:** Remaining 61 hostages, including military-age men and male soldiers, to be released.
  + **Prisoner Exchange:** Additional Palestinian prisoners to be released.
    - Those involved in deadly attacks or the October 7, 2023, Hamas attack will not be released.
  + **Complete Withdrawal:** Israeli forces to withdraw entirely from Gaza.

#### **Phase 3: Reconstruction and Humanitarian Assistance**

* + Large-scale reconstruction of Gaza would begin.

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### Challenges to Ceasefire implementation

* **Hamas' Conditions:** Hamas insists on a complete Israeli military withdrawal and an end to the war before releasing remaining hostages.
* **Political Opposition in Israel:** Far-right Israeli Minister **Itamar Ben-Gvir** has threatened to quit the government over the deal, calling it a surrender to Hamas.

**Source:**

* [**Indian Express - Hamas accepts draft agreement**](https://epaper.indianexpress.com/c/76623521)

# 150 Years of IMD

## Context

The Indian Meteorological Department has completed 150 Years of its establishment. The IMD **Vision-2047** document was also released on this occasion.

## About Indian Meteorological Department (IMD)

* It is the principal government agency in all matters relating to meteorology and allied subjects.
* **Establishment Year:** 1875 (New Delhi)
* **Regional Meteorological Centres of IMD (6)**: Mumbai, Chennai, New Delhi, Calcutta, Nagpur and Guwahati.
* **Nodal Ministry:** Ministry of Earth Sciences

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| **Facts**   * India was the **1st developing country** in the world to have its own Geo-stationary satellite, **INSAT.** * **IMD** became the 1st organisation in India to have a message switching computer for supporting its **Global Data Exchange.** |
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### IMD Vision-2047

* **Forecast accuracy goals:** IMD aims to improve forecast accuracy by 10-15% in the next 5 years.
* **Vision for 2047 includes:**
  + Zero disaster deaths
  + Zero-error forecast accuracy for three-day predictions.
  + 90% accuracy for five-day forecasts.
  + Tailor-made forecasts for individual users.

| Mission Mausam - launched on occasion of 150th Anniversary  * A government initiative focusing on expanding India's weather observation and forecasting capabilities. * **Key Components**:   + Expanding the **weather observation network** with new instruments.   + Improving **weather forecasting models** through enhanced understanding of atmospheric physics and the integration of **machine-learning approaches**.   + Investigating **weather modification techniques**. * **Implementing Agencies**: India Meteorological Department (IMD), National Centre for Medium Range Weather Forecasting (NCMRWF), and Indian Institute of Tropical Meteorology (IITM). |
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**Source:**

* [**Indian Express - IMD**](https://epaper.indianexpress.com/c/76624165)

# Why India is warming slower

## Context

The year 2024 marked the warmest year globally, with temperatures exceeding the pre-industrial average by over 1.5°C. However, due to differences in baselines and the inclusion of ocean temperatures in global averages, India’s warming (1.2°C since 1901-1910) appears lower than the global trend.

## Challenges in Comparing Global and Indian Warming

* **Baseline Differences:** Global warming measurements include both **land and ocean surfaces**, while IMD data covers only **land temperatures**.
  + Oceans, due to higher evaporation capacity, show lesser warming compared to land.
* **Land and Ocean Warming Trend:** Previous global data suggests:
  + **Land warming:** Over **1.6°C** since pre-industrial times.
  + **Ocean warming:** About **0.9°C** during the same period.
* For 2024, global land warming is expected to be even higher than 1.6°C due to extreme conditions.

## Reasons for Lower Warming Over India

* **Geographical Location:** India lies in the **tropical region**, close to the equator, where temperature rise is generally lower than at higher latitudes (e.g., polar regions).
* **Polar Amplification:** The **Arctic region** has experienced warming **twice the global average**, with temperatures now at least **2°C higher than pre-industrial levels**. This is driven by:
  + **Albedo effect:** Melting Arctic ice exposes land/water, which absorbs more heat.
  + **Heat transfer systems:** Movement of warm air from the tropics to poles.
* **Aerosols and Pollution:** High concentration of **aerosols** over India scatters solar radiation back into space, creating a **cooling effect**.
  + Aerosols also affect cloud formation, further influencing temperature rise.
* India, as a tropical and heavily polluted region, generates a significant amount of particulate matter, unintentionally moderating warming to some extent.

**Source:**

* [**Indian Express - Warming slower**](https://epaper.indianexpress.com/c/76625095)

# New Approach to Obesity

## Context

The Lancet Diabetes & Endocrinology Commission has proposed a new framework for diagnosing obesity.

## Limitations of BMI and Proposed Changes

* **BMI as a Screening Tool:** BMI calculates weight relative to height and is a traditional indicator of obesity.
* While useful as a **preliminary screening tool**, BMI often leads to **underdiagnosis** or **overdiagnosis** of obesity-related health risks.

#### **Proposed Diagnostic Methods:**

* + **Combine BMI with Body Measurements:** Use at least one measurement, such as waist circumference, waist-to-hip ratio or waist-to-height ratio.
  + **Direct Body Fat Assessments:** Techniques like **DEXA scans** offer precise fat measurement and distribution.
* **Benefits of the Revised Framework:**
  + Helps in **personalized treatment** by assessing individual metabolic profiles and health risks.
  + Improves **intervention efficacy** by distinguishing between types and stages of obesity.

| Obesity  * Obesity is a chronic disease that occurs when the body stores excess calories as fat * It is caused by an **imbalance of calories consumed and calories expended** (when someone eats too many high-fat or high-sugar foods and doesn't get enough physical activity). * **Other factors:** Certain medications, such as antidepressants, steroids and diabetes medications, Lack of sleep, Stress & Genetics. * A **body mass index (BMI) of over 30 indicates obesity.** |
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**Source:**

* [**Indian Express - Obesity**](https://epaper.indianexpress.com/c/76624147)

# India-Bangladesh Border Fencing Dispute

## Context

**India** has summoned Bangladesh's Acting High Commissioner to discuss **border security and fencing**.

## About India - Bangladesh Border

* **Length**: 4,096.7 km, the **largest land border** India shares with any country.
* It passes through **West Bengal** (2216.7 km), **Assam** (263 km), **Meghalay**a (443 km), **Tripura** (856 km) and **Mizoram** (318 km).
* **Status of Fencing along the border:**
  + **Fenced**: 3,141 km (as of 2023).
  + **West Bengal**: 81.5% of fencing completed, remaining is unfenced due to;
    - Objections from villagers.
    - Challenging terrain.
    - Ongoing negotiations with Bangladesh.
  + **Riverine Border**: 900 km is **unfenced**, guarded by the BSF’s **water wing.**
* **Purpose of Fencing:** To curb trans-border crimes, including smuggling and illegal movement. An estimated **60%** of crimes occur where fencing is absent.

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### Border Guidelines and Disputes

* **1975 Joint India-Bangladesh Guidelines:**
  + Prohibits defence structures within 150 yards of the zero line.
  + India **doesn’t consider wire fencing as a defence structure, but Bangladesh and Pakistan do.**
* **Challenges due to complex geography:**
  + In North Bengal villages and houses fall within the 150-yard guideline.
  + In some areas, fencing is built right on the border to avoid displacing villages.
* **Bangladesh’s Objections:**
  + **Fencing’s Impact:**
    - Causes inconvenience to border residents.
    - Interpreted as a threat to national security when accompanied by smart surveillance systems (CCTV and sensors).
  + **Smart Fencing:** Opposed by **Border Guards Bangladesh (BGB)** for its ability to monitor activity within 100 yards of Bangladeshi territory.

**Source:**

* [**Indian Express - India summons envoy**](https://epaper.indianexpress.com/c/76623286)

News in Shorts

| Economic losses suffered by India due to Natural Catastrophes in 2023 |
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| * **Total Economic Losses**: $12 billion (over ₹1 lakh crore), significantly higher than the 10-year average of $8 billion (2013–2022). * **Key Contributors**:   + **Floods** in northern India and Sikkim.   + **Tropical Cyclones (TC)**: Biparjoy and Michaung.  Major Natural Catastrophes in 2023  * **Tropical Cyclone Biparjoy (June, 2023)**: Made landfall in **Kutch, Gujarat**, causing port shutdowns including **Kandla** and **Mundra**.   + **Damage**: Strong winds, heavy rainfall, and storm surges led to significant destruction in **Gujarat** and affected **Maharashtra** and **Rajasthan**. * **Tropical Cyclone Michaung (December, 2023):** Caused **extreme rainfall** in **Chennai**.  **Northern India Floods (July, 2023):** Heavy monsoon rains led to widespread flooding**.**  * + **Affected Areas**: Himachal Pradesh (including Shimla) and Delhi.   **Source:**   * [**Indian Express - India's Natural Catastrophe**](https://epaper.indianexpress.com/c/76623948) |
| Purulia Observatory |
| * The S N Bose Centre for Basic Sciences (SNBCBS), an autonomous institute of the Department of Science and Technology has set up a **new astronomical observatory in Purulia district (on Panchet Hill) of West Bengal.** * It is equipped with a 14-inch diameter telescope for scientific observations. * **Other Observatories in India:**    + ARIES Observatory - Nainital, Uttarakhand),   + Vainu Bappu Observatory - Kavalur, Tamil Nadu   + Indian Astronomical Observatory (IAO) - Hanle, Ladakh   + Giant Metrewave Radio Telescope (GMRT) - Pune, Maharashtra.   **Source:**   * [**PIB - New observatory at remote Purulia district**](https://pib.gov.in/PressReleasePage.aspx?PRID=2092417) |

Editorial Summary

# Groundwater Contamination

## Context

The Annual Groundwater Quality Report 2024, released recently by the Central Ground Water Board, highlights alarming levels of contamination in groundwater across the country.

### Findings of the Report

* **Nitrate Contamination**: 20% of samples exceeded the permissible limit for nitrate.
* **Fluoride Contamination**: 9.04% of samples had fluoride levels above the limit.
* **Arsenic Contamination**: Found in 3.55% of samples, especially in the Ganga-Brahmaputra floodplains.
* **Contamination hotspots**: Rajasthan, Punjab, Haryana, and Andhra Pradesh.
* States like Arunachal Pradesh, Mizoram, and Meghalaya had **100% compliance with Bureau of Indian Standards norms.**

| Groundwater Usage in India  * **Drinking Water**: Groundwater meets about 85% of rural water supply needs. * **Irrigation**: It supports 62% of India’s irrigation requirements. |
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## Reasons for Groundwater Contamination

* **Natural Factors:** Natural leaching of minerals into aquifers.
* **Anthropogenic Factors:**
  + Overuse of chemical fertilizers and pesticides (e.g., Punjab).
  + Agricultural runoff leading to nitrate contamination.
  + Industrial discharge and untreated sewage.
  + Unregulated mining activities.
  + Presence of microplastics in urban areas.
  + Over-extraction leading to salinity and seawater intrusion in coastal regions.
* **Urban Groundwater Issues**: Microbial contamination due to improper waste management.

## Impacts of Groundwater Contamination

* **Public Health Hazards**
  + Contaminants like **nitrates**, **arsenic**, and **fluoride** cause severe health issues:
    - **Nitrate contamination** can lead to methemoglobinemia (blue baby syndrome).
    - **Arsenic exposure** causes skin lesions, cancer, and neurological disorders.
    - **Excessive fluoride** results in dental and skeletal fluorosis.
  + Microbial contamination increases the spread of **waterborne diseases** like diarrhea and cholera.
* **Agricultural Productivity Decline**
  + Contaminated groundwater affects soil fertility and reduces crop yields.
  + Harmful substances absorbed by crops enter the food chain, impacting food safety.
  + In coastal regions, salinity due to seawater intrusion reduces the productivity of agricultural land.
* **Economic Losses**
  + Healthcare costs rise due to diseases caused by polluted groundwater.
  + Declining agricultural yields lead to financial losses for farmers.
  + Increased costs for industries and households to treat water before use.
* **Ecosystem Degradation**
  + Contaminants harm aquatic ecosystems as polluted groundwater often discharges into lakes, rivers, and wetlands.
  + Soil degradation due to toxic substances affects biodiversity and plant life.
* **Social and Equity Issues**
  + Rural communities, dependent on groundwater, face severe hardships due to contamination.
  + Inequities arise as only wealthier households can afford water purification systems.
  + Migration may increase as people move away from regions with poor water quality.
* **Reduced Availability of Safe Drinking Water**
  + Groundwater contamination decreases access to potable water, especially in rural and urban areas reliant on it.
  + Excessive extraction of contaminated groundwater exacerbates water scarcity issues.

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## Solutions to Address Groundwater Contamination

* **Improved Water Management:**
  + Promote sustainable agricultural practices.
  + Use low-cost water filtration techniques for poor households.
  + Recharge aquifers artificially.
  + Provide proper sewage disposal systems.
* **Policy Interventions:** Central schemes like **Atal Bhujal Yojana** and state programs like **Tamil Nadu's rainwater harvesting**.
  + Arsenic-mitigation programs in West Bengal.
* **Community Participation:** Enable local institutions and communities to make decisions regarding groundwater management.
* **Technological Measures:** Establish hydrogeological monitoring networks.
  + Form water security plans at the gram-panchayat level.
* **Awareness and Regulation:**
  + Launch public-awareness drives.
  + Install water meters and formalize rights to groundwater access.
  + Enforce groundwater rights detached from land ownership.

**Source:** [**Business Standard: Ground Realities**](https://www.business-standard.com/opinion/editorial/ground-realities-groundwater-contamination-poses-serious-hazards-125011401179_1.html)

# Niti Aayog 2.0 In The Time Of Global Churn

## Context

The intellectual traditions of the neo-liberal era—characterized by open markets, deregulation, globalization, and a smaller state—have significantly shaped policymaking in India since the pivotal reforms of 1991. However, these ideas are now losing legitimacy both domestically and globally.

## Current Global Situation

* **Rise of Populism and De-globalisation**: Many nations are turning inward, challenging globalisation and open markets.
  + Western economies are prioritising national interests, leading to trade wars and reduced global economic integration.
* **Technological Advancements**: Rapid technological disruptions are reshaping industries, creating uncertainty about future jobs and the digital divide.
* **Climate Crisis**: Accelerating climate challenges demand innovative and coordinated global responses, which are often lacking due to fragmented policymaking.
* **Economic Inequalities**: Unequal wealth distribution, stalled structural transformations, and persistent unemployment are evident across developing and developed nations.

### India’s Challenges

* **GDP Growth**: The GDP growth rate is projected at 6.4% for FY25, a decline from previous years. The second quarter of FY25 saw growth slow to 5.4%, marking a seven-quarter low.
* **Stalled Structural Transformation**: India's transition from an agrarian to an industrial economy remains incomplete, with a disproportionate reliance on informal jobs.
* **Unemployment and Inequality**: Persistent joblessness and a widening income gap indicate unequal economic growth.
  + Persistent unemployment remains a critical issue as India needs to generate around 8 million jobs annually until 2030.
* **Weakened Federalism**: Centre-state relations have worsened, with states losing autonomy in fiscal and development strategies.
  + Also wealthier states questioning fiscal devolution formulas favoring poorer states.
* **Inadequate Responses to Climate and Technology**: India’s policymaking struggles to address challenges in climate resilience and technological adaptation.

## Niti Aayog Challenges

Niti Aayog, which celebrated its 10th anniversary in January 2025, was established through a Cabinet resolution that envisioned it as a "directional and policy dynamo" for national development. Despite this ambitious mandate, its performance has been underwhelming due to various contextual and structural challenges.

## Criticisms of NITI Aayog

* **Lack of Autonomy**: Critics argue that the NITI Aayog functions more as an arm of the central government rather than as an independent think tank.
  + This led to a scarcity of credible independent research.
  + **E.g.,** While the Mahatma Gandhi National Rural Employment Guarantee Scheme has been extensively studied since its inception in 2006, Niti Aayog has not fostered similar public discourse on government schemes.
    - Instead, it has often relied on management consultants rather than academics or civil society for policy advice.
* **Reduced State Empowerment**: The dismantling of the Planning Commission in 2015 stripped Niti Aayog of budgetary powers, creating an institutional vacuum in fiscal transfers to states.
  + The Finance Commission's role has become more pronounced without the Planning Commission's mediating function, leading to disempowerment of states and friction in Centre-state relations.
* **Over-reliance on Private Consultants**: The think tank has leaned heavily on private consultants, sidelining academics, technical experts, and civil society.
* **Limited Public Consultation**: Strategic initiatives like India@75 and action agendas lacked meaningful public and stakeholder engagement.
* **Focus on Rankings over Strategy**: Niti Aayog's attempts to assert influence through state rankings and indices have been criticized as lacking autonomy, positioning it more as a tool for centralization rather than a credible think tank.

## Way Forward

* Boosting exports and investments in sectors like green energy, AI, and infrastructure.
* Enhancing support for Micro, Small, and Medium Enterprises (MSMEs) to mitigate liquidity issues.
* Navigating global uncertainties including tariff walls and currency depreciation.
* Equip NITI Aayog with financial autonomy to effectively guide medium- and long-term development strategies.
* Encourage open enquiry, independent research, and critique to improve the credibility and effectiveness of policy advice.
* Transition from fragmented and reactive policies to a coherent industrial policy and long-term planning suited to the 21st century.

**Source:** [**Hindustan Times: Niti Aayog 2.0 in the time of global churn**](https://www.hindustantimes.com/opinion/niti-aayog-2-0-in-the-time-of-global-churn-101736866258834.html#:~:text=Without%20budgetary%20powers%2C%20the%20Niti,remit%20of%20the%20Finance%20Commission.)