INDIA SCIENCE AND TECHNOLOGY SCOREBOARD



- It is an **interactive data platform** aimed at mapping the country's **science and innovation ecosystem across states and Union Territories (UTs).**
- It enables policymakers to assess performance, identify gaps and compare their progress with other states.
- It is developed by **NITI Aayog's Science and Technology Division**.

Features

- **Information:** It will bring together **information on research institutions**, publications, patents, start-ups, research funding and state-level policies in one place.
- **National Overview:** The platform will **provide a national overview** of India's science and technology ecosystem, alongside state-wise profiles and benchmarking.
  - Users will be able to **compare any two states** or UTs, examine their research output and assess their performance across sectors.
- **Priority Areas:** It will also cover **11 priority research areas** of national importance, including clean energy, artificial intelligence, semiconductors, critical minerals and agriculture, allowing users to assess research output and compare progress across these sectors.
- **Comprehensive Data:** The scoreboard will **capture data on central,** state and private higher education institutions, R&D laboratories, deep-tech startups, Atal Tinkering Labs, and research funding from central, state and private sources.
- **For patents,** the platform will **provide information on applications filed**, patent strength, research areas and collaboration between states.

DELHI DEFENCE DIALOGUE 2026



- It is a **flagship platform of the Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA)** for addressing the multifaceted challenges of defence and security in India.
- **Organised annually**, the DDD brings together **government officials, military leaders, defence experts**, industry representatives, and **international delegates** to engage in constructive dialogue and exchange ideas.
- The **inaugural edition** of the DDD was held in **2024**.
- The platform is designed to discuss the evolving landscape of international security and defence strategies, with a focus on India's defence.
- DDD serves as a critical forum for addressing the need for a robust defence strategy that not only addresses immediate threats but also anticipates future challenges.
- **DDD 2026:**
    - It is the **third edition** of the dialogue.
    - **Location: New Delhi**
    - **Theme: "Defence Reforms, Aatmanirbharta, Collaborations and Exports"**

Key Facts about Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA):

- It is a **non-partisan, autonomous body** dedicated to objective research and policy-relevant studies on all aspects of defence, security, and international relations.
- MP-IDSA was **established** as a **registered society in New Delhi** on November 11, **1965**.
- Its mission is to promote national and international security through the generation and dissemination of knowledge on defence and security-related issues.
- **Funding**: MP-IDSA is **funded by the Indian Ministry of Defence.** It functions autonomously.

Cross And Climb

NEW AI MODELS



- It is a **new AI model** developed by **Soket Labs Technology and Research**.

Features of Eka-1:

- It is a powerful Foundation Model featuring **26.3 billion parameters** and trained on approximately 7.5 trillion tokens.
- It demonstrates advanced capabilities, spanning all **22 scheduled Indian languages alongside English.**
- It is built as an open, sparse hybrid language model and is **designed for math, code, reasoning, and agentic use.**

About Dhir 2B and Dhir 5B:

- These two are **open-source models** developed by **ZenteiQ AiTech Innovations.**
- **Features:**
  - These models can be deployed **as secure, on-premise, multilingual assistants** supporting **English and 10 Indian languages.**
  - The models **can run on different computing platforms**, including **GPUs and TPUs.**
  - Their lightweight architecture also allows **on-device deployment on mobile phones** without depending on cloud connectivity,
  - It enable **offline-capable, document-grounded automation**, knowledge retrieval, and citizen or enterprise services across defence, government, industrial, and educational sectors particularly in low-connectivity or sensitive environments.

Cross And Climb

THE CASE FOR A NATIONAL URBANISATION POLICY (NUP)

- India's 2027 Census, being conducted after a 16-year gap, will continue to classify settlements as urban based on statutory notification.
- The three census-town criteria are population of at least 5,000, density of at least 400 persons per sq km, and at least 75% of male workers engaged in non-agricultural activities.
- While this preserves comparability with previous Census years, it **fails to capture** India's evolving urban **realities**.
- Economic activity, infrastructure and population growth increasingly extend beyond municipal boundaries, creating a need for a comprehensive National Urbanisation Policy (**NUP**).

Why India Needs a NUP?

- It would establish **shared principles** to align existing institutions without imposing a one-size-fits-all blueprint or creating a parallel delivery system.
- Grounded in the **principle of subsidiarity**, it would enable the Centre to coordinate across government tiers, channel resources and strengthen local capacities while allowing States and local governments to respond to local conditions.
- WRI India's report (Equitable, Productive, Low-carbon and Resilient System of Cities in India), proposes **seven** systemic transformations.

Seven Systemic Transformations:

- **Standardise urban classification:**
  - Satellite imagery and geospatial data can track built-up expansion and economic activity, enabling timely recognition of urbanising settlements.
- **Modernise spatial and regional planning:**
  - Spatial planning must precede infrastructure, housing, climate adaptation and financial reforms.
  - Peri-urban zoning should become mandatory in rapidly urbanising regions.

- **Reform urban finance:**
    - Key reforms include -
        - Strengthening own-source revenue, particularly property taxation.
        - Providing predictable, formula-based fiscal transfers.
        - Improving project preparation and implementation capacity.
        - Expanding access to blended finance and innovative financing instruments.
- **Establish a coordination architecture:**
    - A **National Urbanisation Council** could integrate existing institutions, including the Inter-State Council, the Central Council of Local Government and NITI Aayog. It would provide a platform for coordinated decision-making across States, regions and government tiers.
- **Align sectoral reforms with functional geographies:**
    - Reforms should be organised around functional units such as **airsheds**, river basins and city regions, with institutions empowered to operate at these scales.
- **Align urban politics with reform incentives:**
    - Untied grants should reach municipalities directly through transparent, published formulas. Financial incentives should encourage reforms while maintaining accountability for performance and service delivery.
- **Promote knowledge exchange and innovation:**
    - Cities require institutional support, technical expertise and opportunities to share successful practices.
    - Knowledge networks and local innovation can help municipalities adopt context-specific solutions and meet performance benchmarks.

Conclusion:

- A NUP can create a **coherent framework** for equitable, productive, low-carbon and resilient urbanisation, ensuring that governance, finance and planning evolve alongside the changing geography of economic activity and population growth.

DEATH PENALTY IN INDIA - JUDICIAL SAFEGUARDS & DUE PROCESS

- Recent Supreme Court decisions have reinforced procedural safeguards in death penalty cases, particularly the requirement to assess the possibility of reformation and provide meaningful opportunities for the accused to present mitigating circumstances during sentencing.

Constitutional and Legal Framework of the Death Penalty

- The death penalty is the highest form of criminal punishment in India. Although constitutionally permissible, its imposition is subject to strict judicial safeguards and procedural requirements.
- The Supreme Court's landmark judgment in **Bachan Singh v. State of Punjab** (1980) upheld the constitutional validity of capital punishment while establishing that it should be imposed only in exceptional circumstances.
- The legislative framework for sentencing also provides that courts must record special reasons for imposing a death sentence. This requirement was earlier contained in Section 354(3) of the Code of Criminal Procedure (CrPC) and is now reflected in Section 393(3) of the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023.

The Bachan Singh Judgment and the 'Rarest of Rare' Principle

- In Bachan Singh v. State of Punjab, a Constitution Bench upheld the death penalty but laid down guidelines to regulate judicial discretion.
- The judgment established that:
  - Life imprisonment must remain the rule, while the death penalty should be an exception.
  - Courts must record special reasons before imposing capital punishment.
- Both the circumstances of the crime and those of the accused must be considered.
- Death should be imposed only when life imprisonment is unquestionably foreclosed.

Individualised Sentencing and Reformation

- Individualised sentencing requires courts to consider the personal, social, psychological and structural circumstances of the accused before determining punishment.
- The objective is to assess the individual's moral culpability and whether the possibility of reformation has genuinely been eliminated.
- Importantly, the State bears the burden of establishing through evidence that there is no reasonable possibility of the accused being reformed.
- This approach ensures that the death penalty is not imposed solely because of the gravity or brutality of the crime.

Reformation as a Central Principle of Sentencing

- A nationwide study of 306 death sentences imposed between 2018 and 2020 found that:
  - 36.1% of death sentences were pronounced on the same day as conviction.
  - Another 18.4% were pronounced on the following day.
  - In most cases, the defence neither presented arguments nor submitted evidence relating to mitigating circumstances.
- In 2025, trial courts sentenced 128 individuals to death.
- These findings highlighted the gap between constitutional principles and their implementation during sentencing proceedings.

Reliability of Criminal Investigations and the Risk of Judicial Error

- The concerns surrounding capital punishment extend beyond sentencing procedures to the reliability of criminal investigations and prosecutions.
- Over the preceding decade, nearly one-third of death sentences considered by the High Courts and Supreme Court had ultimately resulted in acquittals.
- In 2025 alone, the Supreme Court acquitted the accused in 10 of the 19 death penalty cases it decided, repeatedly identifying serious flaws in investigations and prosecutions.
- These findings are particularly significant because the death penalty is irreversible. A criminal justice system vulnerable to investigative and prosecutorial errors must maintain rigorous safeguards before imposing capital punishment.

SATHYAMANGALAM TIGER RESERVE



The Madras High Court has ordered immediate closure of 87 resorts functioning in Sathyamangalam Tiger Reserve without obtaining planning permission/building approval from the Directorate of Town and Country Planning (DTCP).

- **Location:** It is located in the state of Tamil Nadu.
- It is nestled at the junction of the **Eastern and the Western Ghats in the Nilgiri Biosphere Reserve**
- It is contiguous with the **Mudumalai Tiger Reserve, Bandipur Tiger Reserve** (Karnataka), and **BR Tiger Reserve and Wildlife Sanctuary** (Karnataka).
- **Terrain:** The terrain is hilly and undulating with altitude ranging between 750 m and 1649 m.
- **Climate:** It mainly has **subtropical and dry type of climate.**
- **Rivers:** Some of the prominent rivers in the region include the **Bhavani and Moyar rivers.**
- Tribal Communities: It is home to several indigenous tribal communities, including the Irula and Kurumba tribes.
- **Vegetation:** It consists of **southern tropical dry thorn forests**, **mixed deciduous forests**, **semi-evergreen forests**, and riparian forests.
- **Flora:** It includes teak, sandalwood, bamboo, Terminalia, and Albizia, alongside medicinal plants and shrubs that support both wildlife and local communities.

Fauna: The major species are Elephant, Tiger, Panther, Sloth bear, Gaur, Black Buck, Spotted deer, Wild boar, Black napped hare, Common langur Nilgiri langur, Striped neck mongoose, and Bonnet macaque.

Cross And Climb

NAHARGARH WILDLIFE SANCTUARY



- It is located in the **Jaipur district** of **Rajasthan**.
- It's a small sanctuary covering an area of approximately 52.40 sq. km.
- It is situated in the **Aravalli range.**
- It is named after **Nahargarh Fort**, a historic fort **built** in the **18th century** by **Maharaja Sawai Jai Singh II,** the **founder of Jaipur.**
- It **connects** ecologically with other forest areas like the **Ranthambore Tiger Reserve.**
- **Within the sanctuary** is the **Nahargarh Biological Park**, which covers 720 hectares and focuses on conservation, including species like **Bengal tigers, Asiatic lions,** and sloth bears.
- The sanctuary features rugged terrain with hills, valleys, and seasonal streams.

Flora:

- The sanctuary contains **Tropical Dry Deciduous Forests** and **Tropical Thorn Forests.**
- Major trees include **dhok**, babool, **khejri**, and ber.

Fauna:

- Common species include the **Indian Leopard, Blackbuck, Chinkara (state animal),** Indian Wolf, Sloth Bear, Caracal, etc.
- It's a haven for birdwatchers, with a variety of species, including Sarus Crane, peacocks, owls, and eagles.
- It is also home to reptiles like Indian rock pythons, monitor lizards, and amphibians like frogs and toads.

Cross And Climb