

Today's Prelims Topics

Sonic Weapons

Context

Serbia's President Aleksandar Vucic has denied allegations that his police forces used a banned 'sonic weapon' to disperse protesters in Belgrade.

What Are Sonic Weapons?

- Sonic weapons are **devices that emit loud or low-frequency sound waves** over long distances.
- They can be used for **non-lethal deterrence** or, in some cases, to cause **severe pain and injury**.
- They are also called **Acoustic Weapons**, these devices emit **very loud sounds over long distances**.
- They can produce both **audible and inaudible** sound waves.
- **How Do Sonic Weapons Work?**
 - Sonic weapons rely on **transducers** – electronic devices that convert **energy into sound waves**.



Types of Sonic Weapons

- **Long-Range Acoustic Device (LRAD):**
 - **Range:** Can transmit **intelligible speech up to 8,900 meters (8.9 km)**.
 - **Sound Intensity:** Up to **160 decibels (dB)**.
 - **Uses:**
 - ✓ **Crowd control** (protests, riots).
 - ✓ **Maritime security** (anti-piracy).
 - ✓ **Military operations** (battlefield communication, psychological warfare).
- **Mosquito Device:**
 - **Designed to target young people** (teenagers, early 20s).
 - Produces **high-frequency sound** that is **only audible to younger individuals**.
 - **Older adults (30+) cannot hear it** due to **age-related hearing loss**.
 - **Uses:**
 - ✓ **Preventing vandalism**.
 - ✓ **Dispersing youth gatherings** in public spaces.
- **Infrasonic Weapons:**
 - Uses **very low-frequency sounds** (below 20 Hz), which are **inaudible to humans**, still it can cause **discomfort, disorientation, and even pain**.

Health Effects of Sonic Weapons

Short Term	Severe Effects
<ul style="list-style-type: none"> ● Tinnitus (ringing in ears) – lasts minutes to days. ● Temporary hearing loss. ● Nausea, dizziness, sweating. ● Headaches, vertigo, loss of balance. 	<ul style="list-style-type: none"> ● Vomiting ● Bleeding from ears (indicating inner ear damage). ● Permanent hearing loss (especially with exposure above 120 dB).

Source:

- [Indian Express - Sonic Weapon](#)



Dark Oxygen: A Deep-Sea Mystery

Context

A study published in *Nature Geoscience* has ignited a debate among scientists about the potential production of oxygen in the deep sea without the need for sunlight.

About Dark Oxygen

- It refers to the production of molecular oxygen (O₂) in the deep ocean, specifically at depths where sunlight cannot penetrate, (thus making photosynthesis impossible).
- We usually believe that oxygen on Earth comes from **photosynthesis**—a process where plants, algae, and bacteria use sunlight to turn carbon dioxide into oxygen.
- Scientists studying polymetallic nodules—**potato-sized metal-rich rocks** found in deep-sea regions—suggested they could be producing **electrical current**.
- This electrical current could potentially **split seawater into hydrogen and oxygen** via **electrolysis**, leading to the formation of "dark oxygen."
- The findings challenge the widely accepted belief that **oxygen first emerged on Earth around 2.7 billion years ago** through **photosynthesis, which requires sunlight**.
- The research was conducted in the **Clarion-Clipperton Zone**, an underwater area between **Mexico and Hawaii**, known for its **rich mineral deposits** and growing interest in deep-sea mining.

Source:

- [Dark Oxygen](#)



Online Assurance Monitoring System

Context

Recently, the Parliamentary Affairs Minister informed that 99% of the Parliamentary Assurances have been fulfilled and OAMS has helped in ensuring that these assurances get fulfilled.

About Online Assurance Monitoring System (OAMS)

- It is a **digital platform** implemented by the **Ministry of Parliamentary Affairs** in collaboration with the **Lok Sabha and Rajya Sabha Secretariats**.
- It was launched in **2018**.
- It aims to **track, monitor, and ensure the fulfilment of assurances** given by Union Ministers in Parliament.
- **Key Features:**
 - **Digital Repository:**
 - Stores all parliamentary assurances in a **centralized database**.
 - Eliminates the **risk of losing or overlooking commitments**.
 - **Automated Alerts & Notifications:**
 - Sends **timely reminders** to relevant ministries and departments.
 - Helps maintain **adherence to deadlines** for fulfilling assurances.
 - **Real-time Progress Updates:**
 - Ministries can **log updates** on the status of assurances.
 - Ensures **accurate and up-to-date** information for stakeholders.
 - **Efficiency and Transparency:**
 - Streamlines the **tracking process**, reducing delays.
 - Strengthens **government accountability** by ensuring commitments are fulfilled.

About Ministerial Assurances

- During the course of answers to Questions or during debates, various assurances in the form of promises, undertakings or other such forms of expressions are given by Ministers on the floor of the House.
 - Such assurances are given **due to non-availability of information**, at that point of time, to meet the queries or points raised by the Members.
 - An assurance given to the **Lok Sabha /Rajya Sabha is required to be fulfilled within a period of three months from the date of assurance**.
 - With the approval of the Minister, the Ministry may seek extension of time from the **Committee on Government Assurances**, Lok Sabha/Rajya Sabha for fulfilling the assurance.

The Committee on Government Assurances consists of **15 members in the Lok Sabha and 10 members in Rajya Sabha**.

Source:

- [The Hindu - OAMS](#)

What is the APAAR ID?

- APAAR stands for Automated Permanent Academic Account Registry (APAAR).
- It is part of the **National Education Policy (NEP) 2020**, introduced to streamline student record-keeping.
- It provides a **'One Nation, One Student ID'** to track students' academic records.

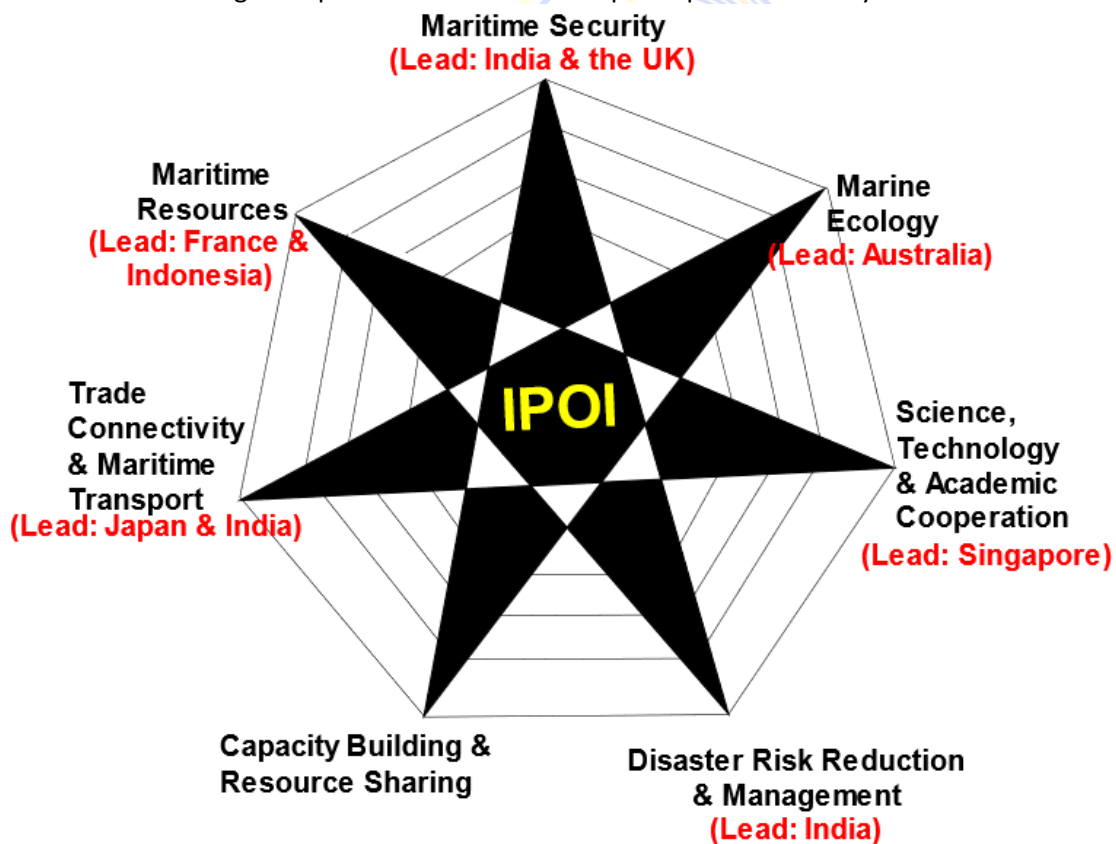
- **Functions:**
 - Stores students' academic achievements.
 - Facilitates easy transition between schools and institutions.
 - Helps in processing and verifying transcripts.
- **How It Works:**
 - Linked to **Aadhaar** and stored in **DigiLocker**.
 - Data collection is done via the **Unified District Information System for Education Plus (UDISE+)** portal, which holds statistics on schools, teachers, and students.
- **Is APAAR Mandatory - No**, The government has stated it is voluntary.

Source:

- [The Hindu - APAAR ID](#)

Indo-Pacific Oceans Initiative (IPOI)

- It is a non-treaty-based voluntary arrangement that promotes cooperation for a free and open Indo-Pacific and the rules-based regional order.
- It was launched by **India in 2019 at the East Asia Summit (EAS) in Bangkok (Thailand)**.
- It aims to ensure a free, open, and inclusive Indo-Pacific, fostering peace, stability, and prosperity for all participating countries.
- It builds upon the **“Security and Growth for All in the Region” (SAGAR)** initiative announced by the Prime Minister in 2015.
- **Key Pillars of IPOI:**
 - The IPOI identified seven key pillars, with the possibility of one or two countries leading each pillar while others could participate voluntarily.



Source:

- [DD News - IPOI](#)

SQUAD Grouping

- The **Philippines and its allies** are working on **expanding the Squad**, an informal multilateral security grouping, to include **India and South Korea**.

About SQUAD

- It is an informal military grouping (**Members - USA, Australia, Japan and Philippines**).
- It aims to exchange intelligence and hold joint military exercises and operations to counter China's dominance in the Indo-Pacific region.
- **Joint Military Activities:**
 - Since **2023**, the defence forces of these four countries have conducted **joint maritime operations** in the **Philippines' exclusive economic zone (EEZ)** in the **South China Sea**.

Source:

- [Reuters - SQUAD](#)

NIDAAN Portal

- The **National Integrated Database on Arrested Narco-offenders (NIDAAN)** is a specialized portal developed by India's **Narcotics Control Bureau (NCB)**.
- It serves as a comprehensive repository of data on individuals arrested for narcotics-related offenses.
- It was launched in **July, 2022**.
- NIDAAN platform sources its data from the **ICJS** (inter-operable criminal justice system) & **e-Prisons** (a cloud-based application).
 - **Presently NIDAAN portal is partially integrated** with the **Crime and Criminal Tracking Network System (CCTNS)**. Full integration with CCTNS is planned for the future.
- **Key Benefits:**
 - Helps Drug Law Enforcement Agencies (DLEAs) in **investigations and proactive policing**.
 - Enables officers to **track repeat offenders** and **identify drug trafficking networks**.
 - Assists in **financial investigations** and in proposing detention under the **Prevention of Illicit Traffic in Narcotic Drugs & Psychotropic Substances (PITNDPS) Act, 1988**.
 - Provides details such as **past involvements, bail/parole status, and handler information**.

Source:

- [PIB - NIDAAN Portal](#)

Editorial Summary

A delimitation red flag — the lessons from J&K, Assam

Context

The debate on fresh **delimitation of legislative constituencies** has intensified, raising multiple concerns and possible solutions.

More In News

- A proposed solution suggests **freezing the number of parliamentary seats** but **increasing the number of Assembly seats** in States with growing populations.
- This is considered more democratic because:
 - MLAs are the first point of contact for constituents.
 - MPs represent their constituents at the national policy level.

Concerns of Southern States and Possible Solutions

- Southern States fear **power imbalance** due to fresh delimitation, which may reduce their political influence.
- **Suggested solution:** Redistribute **Rajya Sabha seats** equally among the five geographic zones:
 - **Northern, Central, Eastern, Western, and Southern** zones.
 - **Status of Zonal Councils:** Most Zonal Councils have not met since **2023**.
 - **Exception:**
 - **Western Zonal Council** met in **February 2025**.
 - **Southern Zonal Council** last met in **2022** (planned meeting in **January 2025** in Chennai).
- **Role of Zonal Councils:**
 - Initially meant for resolving inter-state disputes.
 - They now handle broader governance issues (e.g., **Aadhaar**, good governance).
 - **Suggestion:**
 - Free zonal councils from the **Home Ministry**.
 - Strengthen coordination with the **Inter-State Council** (dormant since **2016**).

Zonal Councils

They are **statutory bodies** (not constitutional) established under the **States Reorganisation Act of 1956**.

Formation of Zonal Councils
While forming the five zones, the following factors were considered:

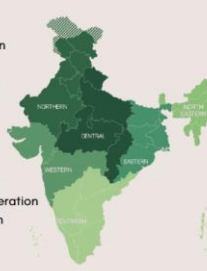
- Natural Divisions
- River Systems and Communication
- Cultural and Linguistic Affinity
- Economic Development, Security and Law & Order

Objectives

- Promoting National Integration
- Arresting Growth of Regionalism.
- Encouraging Centre-State Cooperation
- Enhancing Interstate Cooperation

Functions

- Cooperation in economic growth and social development.
- Resolving conflicts related to state boundaries.
- Safeguarding interests of linguistic groups.
- Coordination in transport and communication infrastructure.
- Addressing challenges arising from the reorganisation of States.



Note
North-Eastern Council
Established by
North-Eastern Council Act of 1971

Major Risks from Delimitation

- **Political Imbalance:** Power shift toward large northern States → Weakens influence of more developed States.
- **Communal Division:** Religious-based electoral boundaries → Deepens social divisions.
 - E.g., Jammu and Assam delimitations show bias towards creating smaller population constituencies to benefit majoritarian communities.

Lessons from Recent Delimitation Exercises

Jammu and Kashmir Delimitation (2022)

- **Impact:**
 - Jammu gained **6 seats**; Kashmir Valley gained **1 seat** → Created voting imbalance.
 - E.g., Jammu elector's vote = **1.2 times** the value of a Kashmir Valley elector's vote.
 - Creation of new constituencies with no administrative/geographic logic:
 - E.g., Jammu's **Poonch and Rajouri** added to Kashmir Valley's **Anantnag Lok Sabha seat** – geographically distinct (Pir Panjal range vs. Jhelum valley).
- **Allegations of communal demarcation:** 6 new constituencies (Jasrota, Ramgarh, Ramnagar, Vaishno Devi, Padder-Nagseni, Doda West) → **Hindu majority**.
 - **Kishtwar** (Muslim majority) → Turned into Hindu majority by merging with Hindu-dominated areas.
 - **Population imbalance:**
 - Vaishno Devi, Padder, and Doda West → Electorates of **50,000**.
 - Muslim-majority Dooru and Surankote → Electorates of **1.92 lakh** and **1.77 lakh** respectively.

Assam Delimitation (2023)

- **Assembly seats were frozen** but the Assam Cabinet merged districts, reducing the number from **35 to 31**.
- **Consequences:**
 - Loss of **10 Muslim-majority constituencies:**
 - South Salmara, two seats in Barpeta, Darrang, Nagaon, Dibrugarh, Sibsagar, Jorhat, Hailakandi, Karimganj.
 - Increased representation of **Hindu and tribal** seats.
 - Created constituencies of vastly different population sizes.

Conclusion

- A purely population-based delimitation will create a **political power imbalance**.
- Communal demarcation of constituencies will lead to **polarisation** and threaten the foundation of India's **pluralistic federalism**.
- Both trends constitute a serious challenge to the **unity and integrity** of India.

Source: [The Hindu: A delimitation red flag — the lessons from J&K, Assam](#)

Draft Digital Personal Data Protection Rules, 2025: Criticism and Demands

Context

The draft Digital Personal Data Protection Rules, 2025, released by MeitY in January under the Digital Personal Data Protection Act, 2023, have faced several criticisms.

Criticisms of the Draft Digital Personal Data Protection Rules, 2025

- **Appointment of DPB Members:** The Union government has the discretion to appoint members to the Data Protection Board (DPB), raising concerns over the separation of powers and the independence of the DPB since it performs **quasi-judicial functions**.
- **Dispute Resolution Mechanism:** Appeals from the DPB's decisions will be filed before the Telecom Disputes Settlement and Appellate Tribunal (TDSAT) within 6 months, which is seen as unrealistic given the TDSAT's current workload and capacity constraints.

Demands for Institutional Reforms

- **Specialist Appointment:** A **technical member with expertise in data protection** should be appointed to the TDSAT since data protection issues are distinct from telecom matters.
 - **Amendment to Section 14C of the TRAI Act** is required to accommodate this change.

Section 14C of the TRAI Act outlines the qualifications and eligibility criteria for the appointment of members to the TDSAT.

- **Increased Capacity:** TDSAT is **already overburdened**, with over 3,448 pending cases as of February 2025.
 - More **budget allocations and additional benches** are needed to handle the increased workload from data protection cases.
- **Technological Infrastructure:** TDSAT's **website and digital filing systems** need significant **upgrades** to handle data protection appeals efficiently.
 - **Improved access** to case information and **smoother digital navigation** are necessary.
- **Accountability:** TDSAT should **publish annual reports** detailing the number of appeals filed, disposed of, and pending, along with key issues involved in each type of matter.

Source: [The Hindu: Telecom tribunal reforms to handle data protection pleas](#)

Jan Vishwas 2.0

Context

The recently announced **Jan Vishwas Bill 2.0** at the Union government level aims to simplify and humanize India's legal framework.

State of India's Legislative Framework

Legislative Data (Vidhi Centre for Legal Policy Report)

- The Vidhi Centre for Legal Policy compiled data on **174 years** of legislative activity, covering **882 central laws**.
- Key findings:
 - **370 laws** contain criminal provisions covering **7,305 crimes**.
 - Out of these:
 - **5,333 crimes** attract jail terms.
 - **982 crimes** attract mandatory minimum jail terms.
 - **433 crimes** attract life imprisonment.
 - **301 crimes** attract the death penalty.
 - **Criminal justice laws** like the **Bharatiya Nyaya Sanhita** and **National Security Act** account for only **25%** of these crimes.
 - The remaining **75%** cover aspects of **everyday life** such as:
 - Parent and child care
 - Gathering in assembly
 - Mobility

Challenges with Existing Criminal Laws

- **Excessive Criminal Provisions for Minor Infractions:** Some laws are rarely enforced but provide scope for the arbitrary exercise of power by officials.
 - Examples of minor offences attracting harsh punishments:
 - Milking a cow or buffalo on the street
 - Failing to report the death of an animal within three hours
 - Removing corpses by unprescribed routes
 - Neglecting to provide proper exercise to a pet dog
 - Distributing feeding bottles to a mother who cannot breastfeed
 - Storing e-cigarettes
- **Disproportionate Punishments:** The current system imposes **lesser punishment for serious offences** and **severe punishment for minor offences**:
 - **Mental Healthcare Act, 2017:** Six months' jail for:
 - Failing to maintain records and fulfil reporting obligations.
 - Performing brain surgery for mental illness without the patient's consent and Board approval.
 - Running a red light while driving can result in jail time comparable to **forcing someone into labour**.
 - **Impact:** Distorts incentives and undermines public trust in the justice system.
- **Lack of Awareness and Misuse by Officials:** Many citizens are unaware of these criminal provisions, making them vulnerable to exploitation.
 - Corrupt officials may use obscure provisions to demand bribes or threaten action.
 - **Example:** Recent digital arrest scams involved citizens paying bribes to avoid arrest for crimes they had not committed.
- **Overreliance on Criminalisation:** India's legal framework reflects the **frustration of trying to impose a modern state on an ancient civilisation**.

- Over-criminalisation is a **state-sanctioned system** rather than a **society-sanctioned process**, making it unsustainable in the long run.

Criminal Justice System Challenges

- **Overburdened Courts and Prisons:** 75% of prison inmates in India are **undertrials** – they have not been convicted.
 - There are **3.5 crore pending criminal cases** arising from the **5,333 criminal provisions**.
- **Conviction Rates and Legal Process Issues:** Conviction rates remain low.
 - Courts are hesitant to pass sentences that do not meet a common sense test.
 - Harsh penalties impact the poor and marginalized communities the most.

Structural and Institutional Barriers

- **Resistance from Bureaucracy:** Under Jan Vishwas Bill 1.0 (enacted in 2023), several minor offences were proposed to be decriminalized across 42 laws.
 - However, the actual reduction in criminal provisions was limited because civil servants resisted giving up penal powers.

Proposed Reforms Under Jan Vishwas Bill 2.0

- **Principles for Criminalisation (Vidhi Report):** The Vidhi Centre for Legal Policy recommends four guiding principles to justify criminal provisions:
 - **Protection of Value:** Criminalisation must protect a value vital for society's existence and public interest.
 - **Protection Against Clear Harm:** Criminalisation must be justified by a direct and reasonable apprehension of harm.
 - **Effective and Efficient Solution:** Criminalisation must be the only reasonable means to achieve the law's objective.
 - **Proportionate Response:** Punishment must be proportionate to the gravity of the harm caused.
- **Removal of Arbitrary and Excessive Punishments:** Jan Vishwas 2.0 aims to eliminate excessive criminal penalties for minor infractions.
 - The Bill proposes to make laws more consistent and predictable.
- **Public Consensus and Updated Legal Framework:** A public consensus is needed to revise the legal framework based on the four principles.
 - Legal reforms must be clear, concise, consistent, comprehensible, and implementable.
 - **Example:** Mental Healthcare Act's penalties for administrative lapses vs. medical malpractice reflect the need for consistency.
- **Focus on Restorative Justice:** Shift from a **punitive** to a **rehabilitative and restorative** justice model.
 - The goal is to ensure that the justice system works towards correction rather than mere punishment.

Conclusion

- **The reforms should:**
 - Align criminal laws with public interest.
 - Make criminal laws enforceable and predictable.
 - Strengthen citizens' trust in the legal system.
- **Accountability:** Criminal provisions must be assessed for their impact on:
 - Human rights
 - Society
 - Fiscal resources
 - Justice system capacity.

Source: [Indian Express: Trust and Punishment](#)

MAGA Effect Outside U.S.

Context

Donald Trump's "Make America Great Again" (MAGA) policies, especially aggressive tariffs and trade wars, have triggered significant responses across the globe.

Global Effects outside US

- **India: Reversal of Trade Barriers**
 - India had increased protectionism since 2016 by raising tariffs on over **500 item categories**.
 - However, Trump's push for **trade parity and tariff reciprocity** forced India to rethink its stance:
 - Basic customs duty cut on over **two dozen items** (e.g., bourbon, high-end cars).
 - Average customs duty reduced to **10.66%** from **11.66%**.
 - India is now trying to shed its image as a **high-tariff economy**.
- **China: Shift Toward Consumption-Led Growth:**
 - US tariffs hurt China's export sector, leading to a shift from an **export-driven** to a **consumption-driven** model.
 - China's 30-point action plan includes:
 - Raising workers' incomes.
 - Addressing property market issues and improving annual leave policies.
 - China aims to boost domestic confidence and stabilize growth at around **5%**.
- **Europe: Increased Defence Spending:**
 - Trump's threat to withdraw US defence guarantees pushed Europe to enhance its security.
 - Germany bypassed its "**debt brake**" to increase defence and infrastructure spending:
 - Proposed **€500 billion** investment fund for infrastructure.
 - European Commission termed it a "**watershed moment**" in European security policy.
 - Boost to growth expected, but fiscal constraints remain in countries like France and Italy.
- **Canada: Potential Pivot Toward the EU:**
 - Trump's unpredictability led Canada to explore stronger ties with Europe:
 - 44% of Canadians support joining the EU.
 - Increased trade between Canada and the EU could be mutually beneficial.
 - ➡ A potential shift in North American trade alliances.
- **US Dollar's Reserve Currency Status Under Threat**
 - Trade wars and tariffs risk stoking **US inflation** and undermining foreign confidence in US debt.
 - Central banks, including the **RBI**, have started buying physical gold instead of US dollar-linked assets.
 - Threat to the dominance of the US dollar as the global reserve currency.

Global Trade Uncertainty

- Trump's unilateral actions (e.g., violating USMCA terms) raised doubts about US commitment to trade deals.
- Retaliatory tariffs by China and the EU on American farm goods increased pressure on Washington.
- Increased volatility and reduced global trust in US trade agreements.

Source: [Indian Express: MAGA Effect Outside US](#)