
Today's Prelims Topics

Simlipal Tiger Reserve

Context

The Union Ministry of Environment, Forest and Climate Change has ordered a probe into allegations of fraudulent relocation of tribals from the Similipal Tiger Reserve (STR).

Similipal Tiger Reserve (STR)

- **Location:** Mayurbhanj District, in the Northern-most part of Odisha.
- It is a **National Park, Tiger Reserve & Biosphere Reserve**.
- **Characteristics:** Black tigers (melanistic tigers) are found here.
 - Around 12 rivers cross across the Tiger reserve such as Budhabalanga, Palpala Bandan, Salandi, Kahairi and Deo, all of which drain into the Bay of Bengal.
- **Prominent tribes:** Erenga Kharias, Mankirdia, Khadia, Kolha etc.
- **UNESCO Biosphere Reserve:** Declared a biosphere reserve in 1994.
 - It is also a part of the **UNESCO World Network of Biosphere Reserves since 2009**.
- STR is part of the **Mayurbhanj Elephant Reserve**, which also includes the Hadagarh Wildlife Sanctuary and Kuldiha Wildlife Sanctuary.

Source: [The Hindu](#)

Anticipatory Bail in Caste Crime

Context

On September 1, 2025, the Supreme Court of India quashed a Bombay High Court order that had granted anticipatory bail to an accused in a caste-related crime.

Anticipatory Bail in Caste Crime Provision in India

- **Anticipatory Bail:** It is a legal provision that allows a person to apply for **bail in anticipation of arrest**, i.e., before they are actually arrested by the police for a non-bailable offence.
- **General Provision (Section 482 of BNSS 2023):** It allows an accused to seek anticipatory bail if they fear arrest in a non-bailable offence.
- **Exception under SC/ST Act:**
 - **Section 18 of the SC/ST Act, 1989:** Bars the application of Section 482 BNSS (anticipatory bail) in cases registered under the Act.
 - **Reason:** To protect victims of caste atrocities from **intimidation, coercion, or retaliation** and to ensure free and fair investigation.
- **Judicial Precedents:** The Supreme Court in **State of M.P. vs Ram Krishna Balothia (1995)**, **Vilas Pandurang Pawar (2012)**, and **Prathvi Raj Chauhan (2020)** upheld this bar, stating that:
 - Offences under the SC/ST Act are a **special category of crimes**, rooted in **systemic caste discrimination and untouchability**.
 - Therefore, treating them differently is **constitutionally valid** and does not violate the right to equality (Article 14) or right to life and liberty (Article 21).

Source: [The Hindu](#)

India's Corn Production

Context

US Commerce Secretary Howard Lutnick questioned why India doesn't buy US corn while exporting many goods to the US.

Corn Production In India

- India is the 5th largest producer of maize in the world (*FAO, updated Dec 2023*).
 - The **US** is the **largest corn producer**, accounting for about 30-32% of global output
- According to the United Nations Comtrade (UN-COMTRADE) data for 2022, India was the 14th largest exporter of maize globally.
- **Production:** 42 million tonnes of maize—3% of the global output.
- **Export Value:** \$10,107 million.
 - **Major Destinations:** Vietnam, Nepal, Bangladesh, Malaysia, Thailand.
- In India, nearly **70% of maize is grown in the kharif season**, while 23% is grown in rabi and the remaining 7% during the summer or zaid season.

Maize yield (in tonnes per hectares, 2024-25), top 10 cultivating states in India

West Bengal	7
Telangana	5.9
Bihar	5.7
Tamil Nadu	5.5
Karnataka	3.2
Madhya Pradesh	2.9
Maharashtra	2.9
Uttar Pradesh	2.7
Rajasthan	2.7
Gujarat	1.8

Source: [Live Mint](#), [India Today](#)

Impact of Light Pollution on Avians

Context

A global study based on bird vocalisations (via BirdWeather network using AI model BirdNET) has revealed that artificial light pollution significantly alters bird behaviour.

Impacts of Light Pollution on Birds (Avians)

- **Disrupted Biological Rhythms:** Birds rely on natural light cues to regulate **circadian cycles**.
 - Artificial light causes **earlier dawn activity** and **extended dusk activity**, disturbing their sleep and rest cycles.
- **Altered Migration Patterns:** Many migratory birds navigate by natural light (moon, stars).
 - Artificial lighting confuses navigation, leading to **collisions with buildings** and increased mortality.
- **Feeding and Energy Balance:** Extended activity hours mean **greater caloric needs**.
 - More foraging time may help some species, but for others, it can lead to **energy stress**.
- **Breeding Disruptions:** Extended activity can change **mating calls and courtship timing**, especially during breeding season.
 - Open-nesting and migratory species are particularly vulnerable.
- **Predation Risks:** Brighter nights make birds **more visible to predators**, reducing survival chances.
- **Ecosystem Imbalances:** Birds are key for **seed dispersal, pest control, and pollination**.
 - Disturbances in their activity cycles disrupt **food chains and ecological balance**.

Source: [The Hindu](#)

Defence Procurement Manual 2025

Context

Defence Minister Rajnath Singh has approved the Defence Procurement Manual (DPM) 2025 (which replaced DPM, 2009).

What is DPM 2025?

- It laid down guiding rules and procedures for **revenue procurement** (operations, sustenance, repairs, and services) by the Armed Forces and other organisations under the Ministry of Defence (MoD).
- **Annual value:** ~₹1 lakh crore.
- **Key Features:**
 - Collaboration with DPSUs, private industry, MSMEs, start-ups, IITs, IISc, academia.
 - Relaxed provisions in development contracts, lower penalties (Liquidated Damages capped at 5%, 10% in extreme delays) & assurance of orders up to **5–10 years**.
 - **Competent Financial Authorities (CFAs)** empowered at field level.
 - **No need for No-Objection Certificates** from DPSUs for open bidding.
 - Proprietary Article Certificate (PAC) allowed, with efforts to find alternatives.
 - 15% growth provision in **repair/refit/maintenance** of aerial/naval platforms → ensures quick turnaround and availability of equipment.
 - Special provisions for Govt-to-Govt agreements for high-value procurements.

Source: [PIB](#)

SC's Interim Order On Waqf Act

Context

The Supreme Court passed an interim order staying the operation of several provisions of the new Waqf (Amendment) Act, 2025.

What is Waqf?

- **Waqf** is a permanent dedication of property (movable or immovable) by a **Muslim** for religious, pious, or charitable purposes.
- The property becomes inalienable, meaning it **cannot be sold, gifted, or inherited**.
- Managed by Waqf Boards (State and Central), it supports activities such as **mosques, madrasas, graveyards, orphanages, education, and welfare work**.

Key Provisions Introduced by the Waqf (Amendment) Act, 2025

- **Expanded Powers of District Collectors (Sec. 3C):** District collectors (or designated officers) could **inquire into claims of Waqf properties**.
 - If an inquiry started, the land would **immediately stop being treated as Waqf property**, until the final decision.
 - Collectors could also order **corrections in revenue and Waqf Board records** directly.
- **New Definition of Waqf:** A Waqf could only be created by a person who has been **practising Islam for at least 5 years**.
- **Inclusion of Non-Muslims in Waqf Governance:** Allowed a larger number of **non-Muslims in Central Waqf Council and State Waqf Boards**.
 - No fixed cap in the Act; theoretically, non-Muslims could outnumber Muslims.
- **Abolition of “Waqf by Use”:** Earlier principle: Long-term religious or charitable use of land by Muslims could automatically make it a Waqf.
 - The amendment removed this, citing misuse to claim government land.
- **Application of the Limitation Act:**
 - Earlier: Waqfs could reclaim encroached property without any time limit.
 - Now: The **Limitation Act applies**, meaning cases must be filed within a legally prescribed time (generally 12 years for immovable property).
- **Procedural and Structural Changes:** Stricter mechanisms for **registration and verification** of Waqf properties.
 - Rules for more **transparency and accountability** in the management of Waqf estates.

Supreme Court's Rulings (Stayed Provisions)

1. Collector's Powers (Section 3C): Stayed this provision.

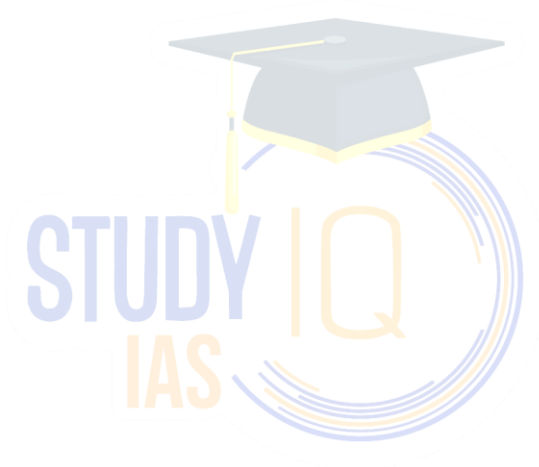
- Property will remain Waqf during inquiry.
- Collector cannot directly alter land records.
- To balance interests → No dispossession, but no third-party rights can be created until Waqf Tribunal decides.

2. Inclusion of Non-Muslims in Waqf Boards: Put a cap →

- Central Waqf Council (22 members) → Max 4 non-Muslims.
- State Waqf Boards (11 members) → Max 3 non-Muslims.

3. Five-Year Islam Practice Rule: Stayed this rule until the government frames clear guidelines on how such practice is to be verified.

Source: [Indian Express](#)



News In Short

INS Nistar



News? INS Nistar reached **Singapore** to participate in **Exercise Pacific Reach 2025 (XPR 25)**.

About INS Nistar (Commissioned in July 2025)

- Indigenous build (80%) mothership (MoSHIP) for India's Deep Submergence Rescue Vehicle (DSRV).
- **Capabilities:** Equipped with **side scan sonar**, **work-class and observation-class ROVs (Remotely Operated Vehicles)**, **expansive deep-sea diving systems** for complex underwater missions.

9th Edition Exercise Pacific Reach 2025

- A **biennial** multinational submarine rescue drill, first launched in 1996 in the Asia-Pacific region.
- **Purpose:** To improve cooperation, interoperability, and readiness in submarine rescue operations among navies.
- **Phases:**
 - **Harbour phase** activities include seminars, Subject Matter Expert Exchanges (SMEE), medical symposiums, and cross-deck visits.
 - **Sea phase activities** include live submarine rescue drills, intervention operations, deep-water simulated emergencies, and Mass Evacuation Exercises (MASSEVEX).

Source: [The Hindu](#)


Sir M. Visvesvaraya



News? Prime Minister pays tribute to Sir M. Visvesvaraya on Engineers' Day

About him

- **Born on** 15 September 1861, Muddenahalli, Karnataka.
- **Contributions:**
 - Joined **Bombay Public Works Department**; later worked with the **Indian Irrigation Commission**.
 - Famous for inventing **automatic sluice gates** (first installed at **Khadakwasla Reservoir, Pune**).
 - Key role in constructing **Krishna Raja Sagara (KRS)**

	<p>Dam in Mysuru – a landmark in irrigation engineering.</p> <ul style="list-style-type: none"> ○ Served as Diwan of Mysore (1912–1919) ● Honours: <ul style="list-style-type: none"> ○ Knighted as “Sir” in 1915 by the British Government. ○ Awarded Bharat Ratna in 1955, India’s highest civilian award. ● Legacy: Celebrated every year on 15 September (his birthday) in India, Sri Lanka, and Tanzania. <ul style="list-style-type: none"> ○ Known as the “Father of Modern Mysore State” and a pioneer of engineering excellence. <p>Source: PIB</p>
<p>Carlsberg Ridge</p> 	<p>News? India has secured an exploration licence from the International Seabed Authority (ISA) to explore polymetallic sulphides in the Carlsberg Ridge of the northwest Indian Ocean.</p> <ul style="list-style-type: none"> ● India’s Earlier ISA Contracts: <ul style="list-style-type: none"> ○ 2002: Exploration of polymetallic nodules in the Central Indian Ocean Basin (valid till 2027 after extensions). ○ 2016: Exploration of polymetallic sulphides in the Indian Ocean Ridge (valid till 2031). ● Note: Exploration activities involve surveying, mapping, and studying mineral deposits, not direct commercial mining (yet) <p>About Carlsberg Ridge</p> <ul style="list-style-type: none"> ● A tectonic ridge forming the boundary between the Indian and Arabian plates. ● Extent: Runs from near Rodrigues Island to the Owen fracture zone. ● Significance: Known for hosting hydrothermal vents that deposit mineral-rich polymetallic sulphides. <p>Source: The Hindu</p>

Mains Topics

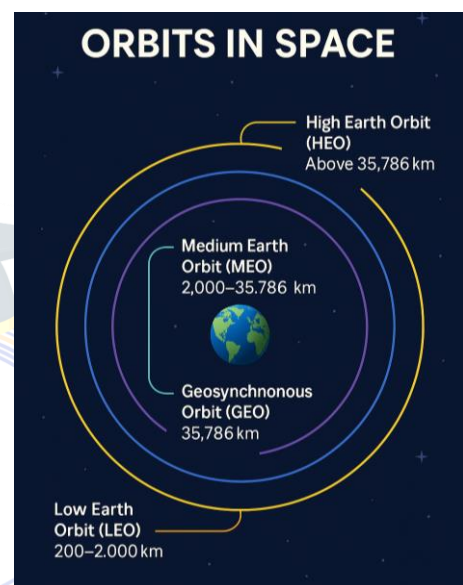
Space Junk and the Future of the Space Economy

Context

Low Earth Orbit (LEO) has become the **most crowded “real estate” in space**. Rapid growth in satellite launches, particularly for satellite internet, is leading to congestion and rising concerns over **space debris**.

Growth of the Space Industry

- The space sector has expanded faster in the last 5 years than in the previous six decades combined.
- There are **~15,000 active satellites** today; over **56% launched since 2020**, most in **Low Earth Orbit (LEO, 500-1,000 km altitude)**.
- LEO can hold **~60,000–100,000 satellites** → filling up fast.
- **International Space Station (ISS)** retiring by 2030 → new wave of private stations such as Axiom Space, Orbital Reef (Blue Origin), Starlab etc.
- **Key Pillars of emerging space economy:**
 - Satellite internet boom (SpaceX Starlink with 7,600+ satellites; plans for 40,000 by 2030).
 - Reusable rockets (Falcon 9, Falcon Heavy) cutting costs by 80–90%.
 - Megaconstellations (100+ satellites launched together).
 - Private space stations for habitation and research.
 - Microgravity manufacturing of medicines, alloys, semiconductors.



Reasons Behind Increasing Junk

- **Satellite Mega-Constellations:** Companies like SpaceX (Starlink), OneWeb, and Amazon (Kuiper) are launching thousands of satellites for internet connectivity.
 - These constellations dramatically increase the crowding of Low Earth Orbit (LEO).
- **Falling Launch Costs:** Reusable rockets (Falcon 9, Falcon Heavy) cut launch costs by 80–90%.
- **Defunct Satellites:** Many satellites are left in orbit after their operational life ends (average 5–10 years). They drift uncontrolled, increasing chances of collision.

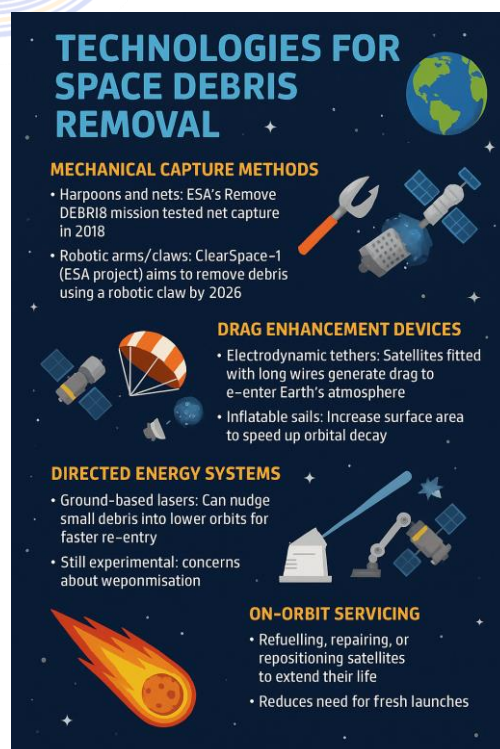
- **Explosions and Collisions:** Accidents such as the **2009 Iridium-Cosmos collision** generated thousands of debris fragments. Old rocket stages sometimes explode due to leftover fuel.
- **Anti-Satellite (ASAT) Tests:** Destructive tests by China (2007), USA (2008), and India (2019) have created clouds of debris.
 - **Eg:** China's 2007 test alone created **3,000+ trackable fragments**.
- **Lack of Global Governance:** No binding international treaty exists to control space debris. Current guidelines (like UN Space Debris Mitigation Guidelines) are **voluntary**.

Impacts and Risks of Space Junk

- **Collisions and Kessler Syndrome:** Even a 1 cm debris fragment can disable a satellite.
 - **Kessler Syndrome:** A chain reaction where collisions generate more debris, making orbits unusable.
- **Threat to Astronauts & ISS:** The International Space Station and future human missions face severe risk from high-speed debris.
- **Astronomy Disruption:** Bright satellites from megaconstellations (like Starlink) interfere with telescopes, blocking clear night-sky observations.
 - **Eg:** AST Spacemobile's **BlueBird** constellation is so bright it confuses astronomers.
- **Environmental Impact:** Metallic ash (from satellite re-entry) releases **alumina particles** that may cause **ozone depletion** and affect upper atmospheric temperatures.
- **Geopolitical and Security Risks:** Debris may be mistaken for a hostile missile attack.
- **Economic Losses:** Threatens critical services dependent on satellites: communication, GPS, banking, weather forecasting, and defence.

Way Forward

- **Global Governance:** A **binding space debris treaty** under the UN. Extend International Telecommunication Union (ITU's) role beyond spectrum allocation to orbital traffic management.
- **Responsible Launch Practices:** Mandate "end-of-life" de-orbiting or shifting to graveyard orbits & Design biodegradable satellites that burn up completely on re-entry.



- **Ban Destructive ASAT Tests:** Promote non-destructive testing (e.g., cyberwarfare simulations, electronic jamming).
- **Incentives for Debris Removal:** Encourage “polluter pays” principle. Insurance premiums linked to compliance with debris mitigation.
- **International Collaboration:** Shared **Space Situational Awareness (SSA)** systems & Global data-sharing platforms on debris tracking.
- **Public-Private Partnerships:** Governments and private firms must jointly invest in debris-removal technologies.

ISRO's Role in Tackling Space Junk

- **Space Situational Awareness (SSA)**
 - **Project NETRA:** India's early warning system for tracking debris and near-Earth objects.
 - **Multi-Object Tracking Radar (MOTR)** at Sriharikota monitors orbital traffic.
- **Responsible Satellite Disposal:** RISAT-2 (2022) and Megha-Tropiques-1 (2023) were de-orbited in controlled maneuvers → Prevented them from turning into debris.
- **ASAT Test Precaution:** Mission Shakti (2019) conducted at **low altitude (300 km)** to minimise long-term debris.
- **Collaboration:** Works with **UNOOSA (UN Office for Outer Space Affairs)** on global debris mitigation.
- **Research in Green Tech:** Exploring **eco-friendly propellants** and technologies to ensure satellites don't contribute to junk after end-of-life.

Source: [Hindustan Times](#)

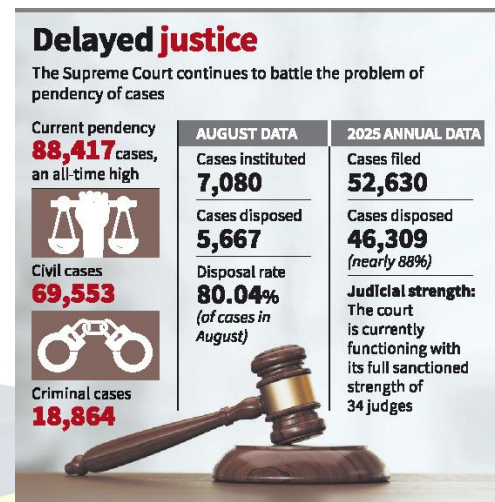
Increasing Pendency in Supreme Court

Context

The pendency of cases in the Supreme Court has reached an all-time high of 88,417, even when the court is currently functioning with its full sanctioned judicial strength of 34 judges.

Reasons for Increasing Pendency

- **High Case Inflow vs Disposal Capacity:** Annual inflow remains higher than disposal despite full strength of judges.
 - **Eg:** Fresh filings (e.g., 7,080 in Aug 2025) consistently outnumber disposals (5,667).
- **Structural Limitations:** Supreme Court handles not only constitutional cases but also routine appeals and bail matters.
 - It acts as a court of last resort even for small disputes, unlike apex courts in the US/UK.
- **Post-Pandemic Pile-Up:** COVID years created a backlog surge; pendency has continued to climb since 2023.
- **Procedural Inefficiencies:** Frequent adjournments, lengthy arguments, and lack of strict case management. Also Digital initiatives like e-filing are not fully mainstreamed.
- **Vacancies in Lower Judiciary:** Pendency in subordinate courts (over 4.5 crore cases) leads to spillover appeals into higher courts. The Supreme Court ends up shouldering the cumulative burden.
 - **Eg:** As per Ministry of Law there are more than 5,600 vacancies in the judiciary.



Impacts of Pendency

- **Access to Justice Denied:** Justice delayed amounts to justice denied, eroding public faith in the judiciary.
- **Economic Costs:** Investor confidence is weakened due to slow resolution of commercial and arbitration cases.
 - World Bank's Ease of Doing Business indicators have flagged judicial delays as a barrier.
- **Increased Workload for Judges:** Judges overburdened, leading to stress and reduced quality of judgments.

- **Prison Overcrowding:** Criminal cases pending for years keep undertrials in jail, worsening overcrowding and human rights issues.
- **Federal Tensions:** States suffer when major policy or legislative matters remain unresolved (e.g., Governor assent cases, Centre–State disputes).

Way Forward (Committee Recommendations)

- **Increase Judge Strength**
 - **Law Commission (1987, 245th Report):** Raise judge-population ratio from ~21 per million to at least 50.
 - Establish a **Constitution Bench Division** and **Appellate Division** (Law Commission, 229th Report).
- **Specialised Benches and Courts:** Create **special courts** for commercial, environmental, and tax disputes to reduce the Supreme Court's burden.
- **Process Reforms & Technology:** Adopt **case management systems**, limit adjournments. Strengthen **e-Courts Mission Mode Project** and expand virtual hearings.
- **Institutional Reforms:** Filter entry of cases by limiting **Special Leave Petitions (SLPs)** to matters of constitutional importance.
 - Introduce **National Court of Appeals** (L. Chandrachud Committee) to handle routine appeals.
- **Strengthen Lower Judiciary:** Fill vacancies in district courts to reduce inflow of appeals.
 - All-India Judicial Service (AIJS) to ensure uniform quality and quicker recruitment.

Source: [The Hindu](#)

Women's Economic Empowerment Index (Uttar Pradesh)

Context

Uttar Pradesh launched India's first Women's Economic Empowerment (WEE) Index to track and address gender gaps in economic participation through data-driven district-level insights.

WEE Index by Uttar Pradesh

- First **district-level tool** in India to track women's participation.
- Covers **five economic levers**: (1) Employment, (2) Education & Skilling, (3) Entrepreneurship, (4) Livelihood & Mobility (5) Safety & Inclusive Infrastructure.
- **Outcomes/Insights**:
 1. **Made inequities visible**: Showed high female enrolment in skilling programmes but low representation in entrepreneurship and access to credit.
 2. **Catalytic reforms**: In UP's transport sector, gender data led to redesign of recruitment and provision of women's restrooms in bus terminals.
 3. Shifted focus **from participation rates to structural barriers**.

Way Forward

- **Replication & Scaling**: States like Andhra Pradesh, Maharashtra, Odisha, Telangana can adopt the WEE Index.
- **Integration into MIS**: Gender breakdowns in departmental data (MSMEs, housing, transport, etc.).
- **Beyond Headcounts**: Track retention, leadership, quality of jobs, and re-entry of women into the workforce.
- **True Gender Budgeting**: Apply gender lens to every rupee spent — in education, energy, infrastructure.
- **District-Wise Gender Action Plans**: Convert index findings into budget allocations and programmatic reforms.

Source: [The Hindu](#)