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JULY 1



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Monsoon deficit hits 40%; July outlook bleak

El Niño's impact is becoming evident; rainfall in June is the fifth lowest for the month since 1901

Less rain may raise the risk of heat stress and put pressure on water resources in several regions

Area under kharif crop falls 22% compared to the last year; reservoirs' water levels also plunge 25%

Jacob Koshy
NEW DELHI

Rainfall in July - the most important of the monsoon months - will be "below normal" or less than 94% of what is usual for the month, Mrutyunjay Mohapatra, Director-General, India Meteorological Department (IMD), said on Tuesday. India's current monsoon deficit is 40%.

"Below-normal rainfall can pose significant challenges for agriculture, water resources, hydropower generation, ecosystem sustainability, and drinking water availability," the agency said in a statement.

"Such conditions may increase the risk of heat stress, and pressure on available water resources in several regions. To re-

duce potential impacts, timely planning and preparedness measures, including water conservation, efficient management of available water resources, and suitable agricultural contingency measures, may be considered by the concerned agencies and stakeholders."

The outlook for July comes on the back of weak June rainfall where the shortfall was nearly 40% of what is usual for the month. The 99.5 mm received was the fifth lowest since 1901 and the least since 2014.

"Usually two-three low pressure systems in the Bay of Bengal (pre-cyclonic bands of moisture) bring rain in June. This time there was none. The El Niño that developed in June has negatively impacted



People walk on the dry bed of the Bargi dam in Jabalpur, Madhya Pradesh, on Tuesday. PTI

rainfall," said Mr. Mohapatra at a press briefing. The first week of July will likely see good rainfall in India and this will benefit sowing, he said.

But with the month's rainfall expected to be weak, the overall outlook is "bleak", a senior meteorologist with the IMD told

The Hindu. "The last two monsoons were good so we have some surplus water storage in reservoirs, but this could be drained out faster with higher evaporation (due to low rains in the weeks ahead and high temperatures)," the meteorologist added.

The area under Kharif

crop has declined 22% compared to the same time last year, according to the Agriculture Ministry, with farmers likely delaying the sowing of paddy until more substantial showers. Key water reservoirs in India, as of the latest figures available from the Central Water Commission on June

25, have about 25% less water than they had in June 2025. But when averaged over 10 years, is 5% more than usual for June. The monsoon deficits assume significance in a year that forecasters globally have warned of what will likely be a 'Super El Niño' year.

This means an unusually hot Central Pacific through this peak period will only surface in winter - much after the southwest monsoon officially winds up by September-end. Six in 10 El Niño years translate to weak southwest monsoon rainfall.

Sea temperatures

Reputed weather models from the Australian Bureau of Meteorology have suggested that the Indian Ocean Dipole, or IOD, a climate pattern marked by

changing sea surface temperatures between the western and eastern Indian Ocean that can strengthen or weaken India's monsoon depending on its phase, could develop in the second of the monsoon (August and September) and, in theory, ameliorate the El Niño's impact.

"Our own models and several other reputable models show that the dipole will be 'neutral,' [meaning unhelpful]. The El Niño is like the big brother, and the IOD cannot fully compensate," said Mrutyunjay Mohapatra.

The 1997-98 El Niño year - one of the strongest in meteorological history - saw 2% more rain than was usual in India due to a favourable phase of the IOD. "That has happened only once ever," IMD-DG said.

- **Key Terms and Explanations**
- **El Niño-Southern Oscillation (ENSO):** A periodic climate pattern involving changes in the temperature of waters in the central and eastern tropical Pacific Ocean. During an El Niño phase, unusually warm ocean temperatures weaken the trade winds, disrupting global weather patterns. For India, this typically shifts moisture away from the subcontinent, acting as a historical trigger for weak monsoons and drought conditions.
- **Indian Ocean Dipole (IOD):** Often called the "Indian Niño," this is an atmosphere-ocean coupled phenomenon characterized by a difference in sea surface temperatures between the western and eastern poles of the Indian Ocean.
 - *Positive Phase:* Western Indian Ocean is warmer than the eastern part, which aids monsoon winds and brings surplus rain to India.
 - *Negative/Neutral Phase:* The western pole is cooler or equal to the east, offering no support or actively dampening rainfall over the subcontinent.
- **Monsoon Deficit and Long Period Average (LPA):** The LPA is the benchmark calculated by the India Meteorological Department (IMD) over a 50-year period to define a "normal" monsoon. A monsoon deficit occurs when the actual rainfall falls below this historical average. For instance, a 40% deficit indicates that the country received nearly half of its expected moisture volume during that specific window.
- **Kharif Crop Season:** The primary summer cropping season in India, heavily dependent on the onset and progression of the Southwest Monsoon. Sown between June and July and harvested in autumn, it includes water-intensive staples such as paddy (rice), maize, sugarcane, and cotton.
- **Low-Pressure Systems:** Cyclonic bands of moisture that typically form over the Bay of Bengal and move inland across Central India. These systems serve as the primary distribution vehicles for monsoon rainfall; their absence leads to prolonged dry spells.

- **Main Arguments and Substantive Parts**

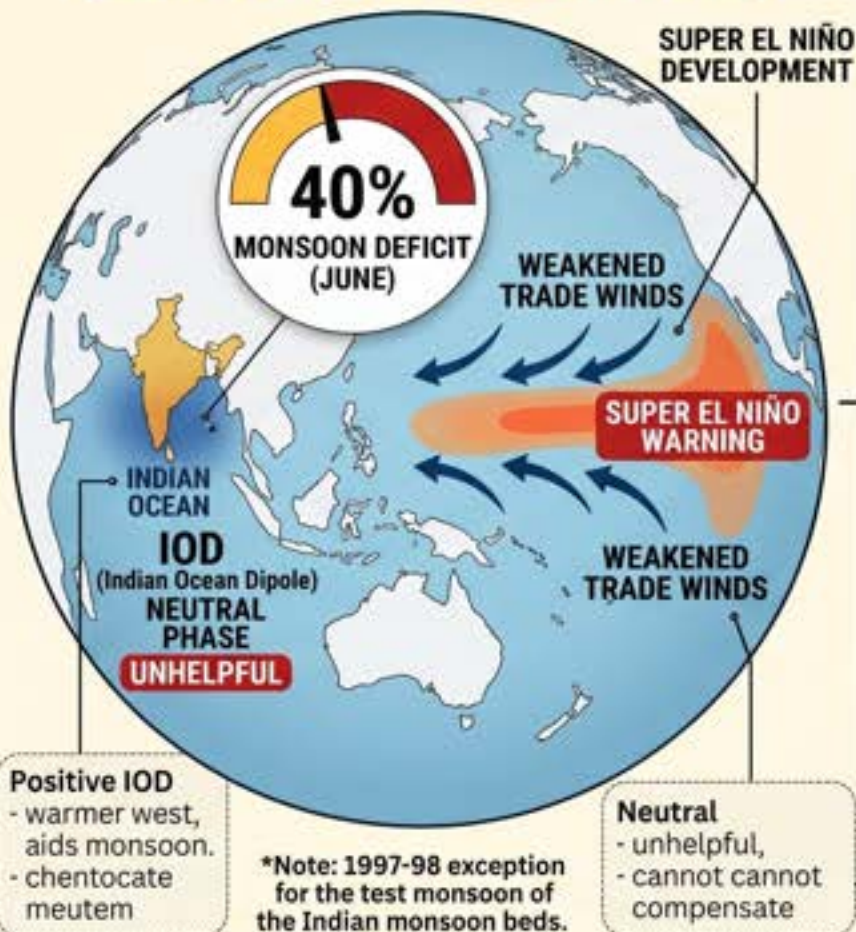
- The core crisis centers on a compounding environmental and economic shock: a massive initial monsoon deficit driven by the rapid development of El Niño, which directly threatens India's agricultural output, water security, and energy stability.
- **The Meteorological Disruption**
- The primary driver behind the severe rainfall shortfall is the early development of an El Niño phase in the Pacific, coupled with a completely neutral and unhelpful Indian Ocean Dipole. This atmospheric combination suppresses the formation of vital low-pressure systems in the Bay of Bengal. Without these moisture-laden systems moving inland, regional rainfall patterns collapse, causing an immediate spike in summer heat stress and accelerated evaporation rates across the subcontinent.
- **The Agricultural and Hydrological Cascade**
- The lack of early rain triggers an immediate slowdown in rural economic activity.
- **Sowing Contraction:** Sowing for vital Kharif crops, particularly water-dependent paddy, experiences sharp declines (exceeding 20%) as farmers delay planting in anticipation of sustained showers.
- **Reservoir Depletion:** The water levels in key national reservoirs experience severe drawdowns, dropping significantly below previous years' storage levels. This depletion threatens both the irrigation capacity required for upcoming crop cycles and the critical reserves needed for domestic drinking water.
- **The Limits of Natural Compensation**
- A crucial element of this climate dynamic is the structural imbalance between different ocean-atmosphere systems. While a highly favorable, positive Indian Ocean Dipole can occasionally override the drying effects of a strong El Niño—as observed during rare historical anomalies like the 1997-98 cycle—such events are meteorological exceptions. In standard years, El Niño acts as the dominant force, and a neutral IOD is entirely incapable of compensating for the widespread moisture deficit, leaving the subcontinent highly vulnerable to prolonged dry spells.

- **Historical Evolution of the Issue**
 - **The Pre-Independence Era (Late 19th Century to 1947):** British India suffered catastrophic famines driven by monsoon failures, such as the Great Famine of 1876–1878. These crises led to the creation of the Indian Meteorological Department (IMD) in 1875 to forecast rains and the formulation of the Provisional Famine Codes of 1883, which focused on reactive relief rather than proactive water management.
 - **Post-Independence and the Green Revolution (1950s–1980s):** India prioritized food self-sufficiency by expanding canal irrigation and building mega-dams (e.g., the Bhakra-Nangal project). However, the Green Revolution introduced highly water-intensive crop cycles, such as wheat-paddy rotations in semi-arid zones, which significantly increased the agricultural sector's vulnerability to monsoon shortfalls.
 - **The 1997-98 Meteorological Paradigm Shift:** This period altered global climate science. Despite experiencing one of the strongest El Niño events of the 20th century, India avoided a severe drought due to a historically strong positive Indian Ocean Dipole. This event led to the formal discovery and integration of IOD dynamics into subcontinental forecasting models.
 - **The Modern Era of Climate Volatility (2014–Present):** The current phase is defined by back-to-back deficit years (such as 2014 and 2015) and an increase in extreme weather events. In response, India launched the National Monsoon Mission to transition from traditional statistical forecasting to high-resolution dynamical modeling, reflecting the challenges of predicting monsoon behavior amid rising global temperatures.
 - **Way Forward**
 - **Transforming Water Management**
 - **Demand-Side Efficiency:** Shift agricultural policy incentives away from flood irrigation toward precision techniques like drip and sprinkler irrigation, supported by programs like *Per Drop More Crop*.
 - **Decentralized Storage:** Invest heavily in localized water conservation, including the rejuvenation of traditional stepwells, village ponds (*amrit sarovars*), and check dams to recharge shallow aquifers and reduce reliance on large, vulnerable reservoirs.
 - **Conjunctive Water Use:** Optimize water allocation by blending groundwater and surface water supplies, ensuring that deep aquifers are reserved for drinking water security during extended droughts.
 - **Agricultural Adaptation and Crop Diversification**
 - **Agro-Climatic Sowing:** Incentivize farmers in semi-arid and water-stressed zones to transition from water-heavy crops like paddy and sugarcane to climate-resilient alternatives like millets (sorghum, pearl millet, finger millet), pulses, and oilseeds.
 - **Climate-Smart Varietal Adoption:** Expand the distribution of short-duration, drought-tolerant crop seeds developed by institutions like the Indian Council of Agricultural Research (ICAR), allowing farmers to obtain viable yields even during shortened or delayed monsoon windows.
 - **Alternative Seeding Techniques:** Promote resource-conserving practices such as Direct Seeded Rice (DSR) and the System of Rice Intensification (SRI), which reduce initial water requirements during the critical sowing phase.
-

UPSC CURRENT AFFAIRS ANALYSIS: THE MONSOON DEFICIT CRISIS

Based on data analysis of the India Monsoon Deficit

METEOROLOGICAL DRIVERS



JULY OUTLOOK & POLICY MEASURES



THUNDSSDK BLEAK B - RAIN WEAK

OUTLOOK BLEAK - RAIN WEAK

- Agriculture
- Water Resources
- Hydropower
- Ecosystem
- Drinking Water

UPSC CIVIL SERVANT POLICY MEASURES

1. **Water Conservation & Efficiency.**
2. **Agricultural Contingency Planning.**
3. **Crop Diversification.**
4. **Heat Stress Risk Reduction.**
5. **Efficient Water Resource Management.**



Gulf remittances rose in April despite West Asia crisis: Ministry

T.C.A. Sharad Raghavan
NEW DELHI

Despite the West Asia crisis, net remittances from the region to India rose to \$36 billion in April 2026, the second month of the conflict, up 70% over the corresponding period of last year, show data presented by the Union Finance Ministry in its latest report.

The Monthly Economic Review by the Department of Economic Affairs said that this resilience of remittance inflows is consistent with what happened during previous crises such as the COVID-19 pandemic.

"Contrary to concerns that geopolitical tensions in the West Asia region could adversely affect remittance inflows from the Gulf economies, transfer receipts have remained robust," the report said.

Stable component

The report highlighted the stability of remittances during volatile market conditions. "This resilience is consistent with empirical findings that remittances are among the most stable components of external financing, remaining relatively insulated from episodes of financial market volatility and geopolitical uncertainty... Unlike portfolio flows, debt flows or foreign direct investment, remittance inflows are relatively acyclical," the report added.

The Ministry report said that this resilience comes about because remittances are flows of funds driven by employment conditions and wage levels in host economies rather than by financial market signals or investor sentiments.

This means that remittances from the Gulf countries are more anchored to

Flowing in

Resilience in remittances pegged to labour market conditions in the Gulf



70% surge in net inward remittances from Gulf countries in April 2026

• Often, inward remittances surge during times of uncertainty

• Risks to this could emerge if prolonged war-like situations hamper working conditions in West Asia

the working conditions there than the stock market performance in India.

In fact, an analysis in the report found that remittances in the short run may even run opposite to what a shock would generally result in.

That is, migrants in other countries front-load precautionary transfers back home during periods of uncertainty and stress.

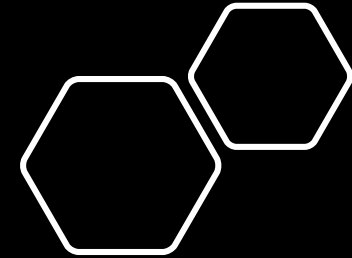
The report, however, stopped short of saying whether this is what was playing out in the case of remittances to India.

However, this also leads to what could be a risk in the medium and long term if the war-like conditions in the region do not abate.

Labour market

"The principal risk to remittance inflows, however, arises from a sustained deterioration in labour market conditions in host economies that affects migrant employment and earnings," the report said.

"Consequently, while short-term external shocks may have limited effects on remittance inflows, developments in overseas labour markets warrant close monitoring in the current context," it added.

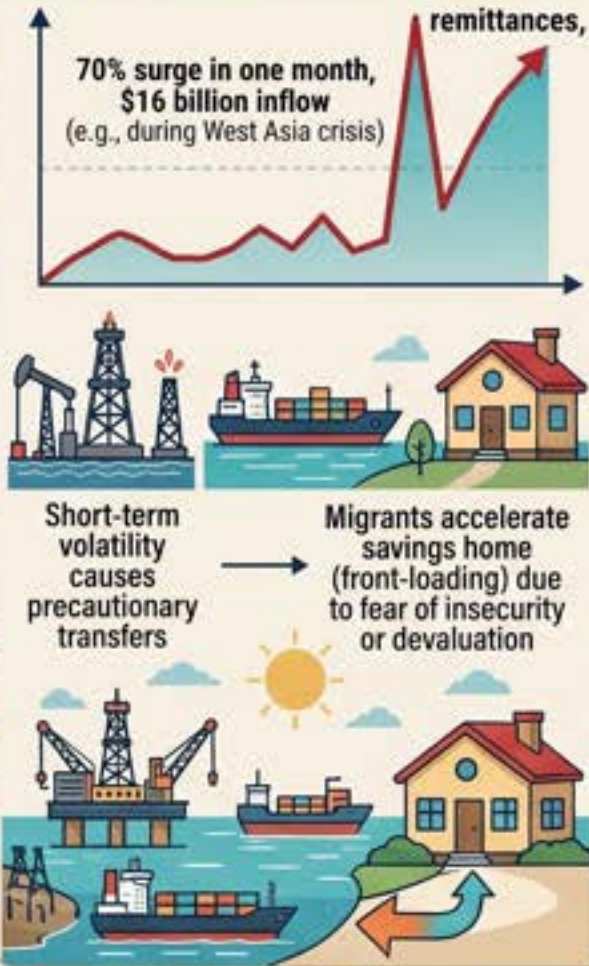


- **Key Terms and Explanations**
 - **Inward Remittances:** This refers to the portion of an expatriate's earnings sent back to their home country. Unlike foreign investment, these are unrequited transfers, meaning they do not create any future repayment obligations or liabilities. For instance, a construction supervisor in Abu Dhabi transferring money to a bank account in Kerala to support family expenses represents an inward remittance.
 - **Acyclical and Counter-Cyclical Flows:** Economic variables that do not move in tandem with the broader business cycle are termed acyclical. Inward remittances often go a step further to become counter-cyclical. When the home country faces an economic shock (such as a natural disaster or pandemic) or when the host country experiences geopolitical anxiety, remittance volumes frequently rise rather than fall. This stands in stark contrast to corporate investments, which flee volatile environments.
 - **Precautionary Front-Loading:** This behavior occurs when migrant workers accelerate and increase the volume of their financial transfers back home during the onset of a crisis. Driven by fear of job insecurity, potential conflict, or impending currency devaluation in the host nation, workers secure their savings by shifting assets immediately to their home country.
 - **External Financing Components:** A nation balances its external accounts using various capital inputs. These include Foreign Direct Investment (FDI), which involves long-term physical asset creation; Foreign Portfolio Investment (FPI), representing volatile, short-term speculative capital in equity or debt markets; and Remittances, which are steady, non-investment-driven transfer receipts flowing directly into household consumption.
 - **Host vs. Home Economy Labor Dynamics:** The host economy is the geographic location where the migrant is employed (e.g., Saudi Arabia, UAE), while the home economy is the worker's native country (India). The stability of remittances depends heavily on the structural labor market conditions, wage frameworks, and contractual legalities within the host economy, rather than global financial market movements.
- **Main Arguments and Substantive Parts**
 - The structural behavior of remittance corridors during geopolitical disruptions reveals several key economic insights:
 - **The Paradox of Shock Resilience**
 - Geopolitical tensions in West Asia frequently trigger concerns about capital flight and economic distress for labor-exporting nations. However, data indicates that short-term net inward remittances can experience substantial growth during crises.
 - **Insulated Nature of Transfer Receipts**
 - Remittances remain insulated from financial market volatility because they are driven by real economy factors—such as employment contracts and fixed wage levels—rather than speculative investor sentiment. While a geopolitical flare-up can cause equity markets to plunge and prompt foreign portfolio investors to pull out capital, migrant workers continue to earn wages under existing contracts. This decoupling makes remittances a highly dependable component of a country's external financing structure.
 - **The Mechanism of Precautionary Capital Shifting**
 - The immediate spike in fund transfers during a crisis is driven by the strategy of front-loading. Migrant workers facing structural uncertainty choose to send their accumulated savings home immediately rather than keeping them in host-country banks. This serves as an emergency financial cushion for their families and protects their capital from regional banking disruptions or asset freezes.
 - **Medium to Long-Term Structural Risks**
 - While short-term capital inflows often rise during a crisis, this resilience has limits. If war-like conditions persist, they can cause structural damage to the host country's labor market. Prolonged conflict can lead to project cancellations, business closures, corporate layoffs, and changes to immigration policies. Therefore, long-term stability requires close monitoring of employment health and working conditions across overseas labor markets.

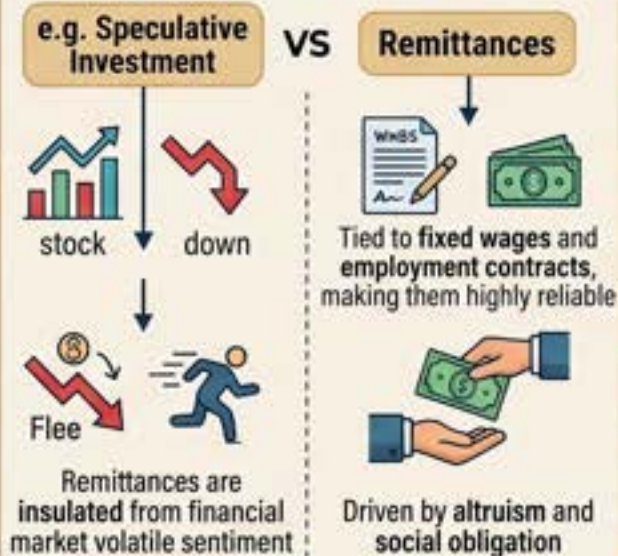
- **Historical Evolution of the Issue**
- **The 1970s Oil Boom and the Genesis of Migration**
 - The modern history of Indian migration to West Asia began with the 1973 oil crisis. As global oil prices surged, the oil-exporting economies of the Gulf experienced unprecedented windfall gains, kicking off massive domestic infrastructure development programs. Lacking sufficient local labor, countries like Saudi Arabia, the UAE, Qatar, and Oman opened migration pathways. This drew large numbers of semi-skilled and unskilled blue-collar workers from India, particularly from Kerala and other coastal states, establishing the first major remittance pipelines.
- **The 1991 Balance of Payments Crisis and Regulatory Shifts**
 - For the first two decades, a significant portion of Gulf remittances entered India through informal channels like *Hawala*, due to rigid domestic banking regulations and unfavorable official exchange rates. The turning point came during the 1991 Balance of Payments (BoP) crisis. Realizing the value of stable foreign exchange inflows, the Indian government liberalized exchange rate mechanisms and replaced the restrictive Foreign Exchange Regulation Act (FERA) with the market-friendly Foreign Exchange Management Act (FEMA). These policy changes modernized banking infrastructure and directed remittances into formal banking channels.
- **The 2000s Shift Toward High-Skilled Migration**
 - As Gulf economies matured, their labor demands shifted from basic infrastructure construction to service sectors, healthcare, retail, hospitality, and technology. This period saw a change in the composition of the Indian diaspora. Alongside traditional blue-collar laborers, a new wave of white-collar professionals—including engineers, doctors, bankers, and managers—migrated to West Asian urban centers. This demographic shift significantly increased the average value of individual transfers, boosting India's total annual remittance inflows.
- **Pandemic Resilience and the Contemporary Era**
 - The resilience of this financial lifeline was tested during global crises like the 2008 financial crash and the 2020 COVID-19 pandemic. Observers predicted a collapse in remittances due to lockdowns and oil price drops. Instead, the inflows demonstrated remarkable stability. Migrants utilized digital banking channels to send emergency funds home, confirming that remittances behave as an altruistic economic shock absorber. Today, India stands as the world's top remittance recipient, with the West Asian corridor serving as a vital pillar of its external economic stability.
- **Way Forward**
- **Structural Skill Upgradation**
 - India should transition from exporting primarily low-skilled, manual labor to deploying certified, high-skilled professionals. Aligning domestic initiatives like *Skill India International* with the evolving market demands of host economies—such as automated manufacturing, specialized healthcare, digital services, and renewable energy—can raise average wage levels, increase remittance values per capita, and reduce vulnerability to sudden economic shifts.
- **Digital Payment Integration and Reducing Transaction Costs**
 - In line with Sustainable Development Goal (SDG) 10.c, which aims to reduce migrant remittance transaction costs to below 3%, India should expand its real-time digital payment linkages. Broadening platforms like the UPI-IPP integration with the UAE to other GCC states can bypass expensive traditional banking intermediaries. This ensures faster, cheaper transfers and keeps funds flowing through formal regulated channels.
- **Institutionalizing Comprehensive Bilateral Labor Frameworks**
 - The government should use diplomatic channels to renegotiate bilateral labor agreements with host countries to dismantle exploitative elements of the *Kafala* system. Future contracts should guarantee minimum wages, mandatory health insurance, standardized working hours, and clear legal remedies for wage disputes. Expanding the tracking capabilities of platforms like the *eMigrate* system can help monitor workers' safety and legal standing in real time.

GULF REMITTANCES: ANALYSIS OF MACROECONOMIC RESILIENCE AND DYNAMICS

Short-Term Shock & Paradoxical Resilience



Alternative Logic: Driven by Real Economy, Not Markets



Ireland's an efficient remittance receipt & of FDI migration



Structural Anchors & Medium-Term Risks



Historical Evolution &

World's top remittance recipient, a vital pillar → Crucial for narrowing Current Account Deficit (CAD) and bolstering foreign exchange reserves

Way Forward: Policy Strategies & Reform



1. Skill Upgradation
graduation cap & gears; target high-skilled, as new sectors



2. Reducing Transaction Costs
phone send a cost-below-3%



3. Comprehensive Labor Frameworks
(contract papers)



Minimum wage symbols



4. Mobilizing Diaspora Capital – and targeted funds

Amit Shah launches new FCRA portal and e-OCI card

The Hindu Bureau
NEW DELHI

Union Home Minister Amit Shah on Tuesday launched a new portal that, apart from reducing paperwork, will speed up clearance of applications for registration under the Foreign Contribution (Regulation) Act, 2010 (FCRA) and also enable real-time monitoring of foreign fund inflows.

Mr. Shah launched the FCRA 2.0 Portal and an e-Overseas Citizen of India (e-OCI) card initiative in the presence of Union Home Secretary Govind Mohan, Foreign Secretary Vikram Misri, Director of Intelligence Bureau (IB)

Mahesh Dixit, and several other senior officials.

At present, around 14,500 organisations with FCRA registrations are working across the country. FCRA registration is mandatory for an NGO or association to receive foreign donations. The Ministry of Home Affairs (MHA) said that, under the Act, approximately 15,000 to 20,000 applications are made each year and about 17,000 annual returns are filed. The portal, hosted on the National Government Cloud (MeghRaj), includes features such as process re-engineering, an integrated dashboard, Aadhaar-based authentication, e-Sign fa-



Amit Shah launches FCRA 2.0 Portal in New Delhi. IB chief Mahesh Dixit (right) and Home Secretary Govind Mohan are seen. ANI

cility, and OCR-based document analysis.

Unlike the old website, the new FCRA portal has removed the section on year-wise fresh registrations under the Act. In

2022, the MHA had dropped sections listing NGOs whose registrations were cancelled and the page detailing the annual returns filed by each NGO.

The Union Home Minis-

ter said the Centre's policy is to ensure transparency and embrace technology so that governance becomes easy for honest people and a strict surveillance system is put in place for wrongdoers, making the country increasingly secure. He said that, prior to 2014, the FCRA system was entangled in files and procedures and was beyond proper oversight, which is critical for both national security and development. In the past few years, there had been a significant increase in the number of applications and the flow of foreign donations, he added.

The new portal would

lead to effective monitoring of foreign contributions made with wrong intentions and end physical submission of documents, Mr. Shah said.

He said the e-OCI card would bring great convenience to more than 50 lakh OCI cardholders. After 20 years, when a new passport is issued, there will be no need to re-issue the OCI booklet, and the cardholder's registration number will also become unique, he said. The e-OCI card will eliminate the problem of loss or damage of the document, and cardholders will be able to carry out real-time verification themselves.

- **Key Terms and Explanations**
- **Foreign Contribution (Regulation) Act (FCRA), 2010:** This is the primary legislative framework enacted to regulate the acceptance and utilization of foreign contributions or hospitality by individuals, associations, or companies. Its core objective is to prohibit any foreign funding that could adversely affect national security, public interest, or democratic sovereignty.
- **Overseas Citizen of India (OCI):** A vital immigration status introduced to cater to the demands of the Indian diaspora. It provides foreign citizens of Indian origin (except those who were ever citizens of Pakistan or Bangladesh) with a lifelong visa to live, work, and study in India, granting them status akin to Non-Resident Indians (NRIs) in most economic matters.
- **National Government Cloud (MeghRaj):** This is a critical infrastructure initiative by the Government of India aimed at accelerating the delivery of e-services in the country while optimizing ICT spending. It ensures that critical sovereign applications run on scalable, secure, and highly available government-controlled cloud environments.
- **Optical Character Recognition (OCR) Technology:** A digital tool that converts different types of documents—such as scanned paper documents, PDF files, or images captured by a digital camera—into editable and searchable data. In regulatory portals, it automates the scrutiny of financial audit reports, eliminating human error and physical paperwork.
- **Main Arguments and Substantive Parts**
- The intersection of technology and state sovereignty reveals a deliberate shift in how India intends to manage external influences and global diaspora relations.
- **The Core Thesis:** Modern democratic governance must transition from archaic, paper-based bureaucratic policing to real-time, algorithmic oversight. This strategy simultaneously aims to drastically minimize structural hurdles for legitimate, law-abiding entities while establishing an absolute, data-driven surveillance ring around malicious or non-compliant actors.
- **Streamlining and Security via the FCRA 2.0 Portal:** As indicated in [image_a9e2a5.jpg](#), the governance architecture handles between 15,000 to 20,000 applications and around 17,000 annual returns each year. By deploying features like Aadhaar-based authentication, e-Sign facilities, and OCR-based document analysis, the state seeks to eliminate physical document submissions. The dual goal is to reduce bureaucratic red tape for honest civil society groups while enabling real-time monitoring of foreign fund inflows to protect internal security.
- **Alleviating Diaspora Friction via e-OCI:** The introduction of the e-OCI card directly addresses a long-standing logistical pain point for over 50 lakh OCI cardholders. Previously, renewing a foreign passport after turning 20 years of age mandated the physical re-issuance of the OCI booklet. The digital migration establishes a unique, permanent digital registration number, allowing real-time online verification and eliminating the vulnerabilities associated with physical loss or damage of physical booklets.
- **The Counter-Perspective and Structural Changes:** While efficiency increases, certain modifications raise questions regarding public accountability. For instance, the portal removes the public-facing, year-wise fresh registration data and specific granular pages detailing annual returns (changes dating back to steps taken in 2022). Critics argue that while this protects sensitive institutional data from external targeting, it simultaneously reduces public transparency regarding the overall ecosystem of foreign philanthropy.

- **Historical Evolution of the Issue**
- **The Post-Colonial Anxieties (1947–1970s):** Following independence, India was highly sensitive to foreign covert interventions in its internal democratic political processes. The geopolitical environment of the Cold War fueled deep systemic anxieties regarding foreign intelligence agencies routing finances to domestic political actors, media houses, and trade unions to influence national policy.
- **The Emergency Era Pivot (1976):** Amidst the declaration of the National Emergency, the original Foreign Contribution (Regulation) Act of 1976 was enacted. Its singular focus was to cleanly sever any financial umbilical cords connecting foreign entities to Indian political parties, journalists, and public servants, treating foreign funding with an inherent institutional suspicion.
- **The Paradigm Shift of 2010:** As India integrated deeply into the globalized economic order, the 1976 Act was replaced by the modern FCRA 2010. This expanded the law's regulatory net to include non-governmental organizations (NGOs) and civil society groups of a "political nature," introducing a strict five-year validity and renewal cycle for registrations.
- **The 2020 Amendments and the Modern Digital Panopticon:** The law was further tightened in 2020, completely banning the sub-granting of foreign funds to other domestic NGOs, capping administrative expenses at 20 percent, and mandating that all foreign funds enter via a single designated State Bank of India branch in New Delhi. The present introduction of the FCRA 2.0 portal and the e-OCI framework represents the absolute digitization of this evolutionary trajectory—replacing physical checks with absolute cloud-based, real-time surveillance.
- **Way Forward**
- **Implementing Proportionality in Regulatory Enforcement:** The state should introduce a tiered regulatory model. Minor administrative or clerical errors made during digital filings on the portal should not result in the immediate suspension or cancellation of an NGO's license. Instead, the system should issue automated warning alerts and provide a reasonable cure period to correct procedural oversights.
- **Targeted Digital Capacity Building for Grassroots NGOs:** The Ministry of Home Affairs, in partnership with civil society networks, should establish regional helpdesks and launch simplified bilingual digital tutorials. This will handhold small, localized organizations through the new portal's features, ensuring that rural development projects are not stalled by technological barriers.
- **Aggregated Public Transparency Dashboards:** To address concerns regarding reduced visibility into civil society trends, the portal could introduce an anonymized, macro-level public data dashboard. This would publish sector-wise and district-wise maps of foreign fund inflows without exposing sensitive institutional names, effectively balancing national security with the public's right to information.
- **Leveraging e-OCI to Channel Diaspora Philanthropy:** The success of the streamlined e-OCI card should be leveraged to create a secure, state-backed digital pipeline that encourages the global diaspora to invest directly into social development initiatives. Integrating the e-OCI system with projects like *Startup India* or dedicated social impact bonds can channel diaspora capital into regulated, high-impact domestic development projects.

UPSC CSE ANALYTICAL BREAKDOWN: Modern Regulatory & Technological Frameworks

Foreign Contributions & Diaspora Integration in India

KEY TERMS & EXPLANATIONS

FCRA, 2010:

Foreign Contribution (Regulation) Act. Primary legislative framework to regulate and utilizing foreign funds. Core objective: national security and democratic sovereignty.

Example: NGO cannot use foreign funds without active registration.

Overseas Citizen of India (OCI):

Immigration status for diaspora.

Lifelong visa, status akin to NRIs in economic matters.

Example: third-gen engineer can travel seamlessly.

National Government Cloud (MeghRaj):

Accelerates e-service delivery, sovereign apps on secure gov-controlled cloud environments.

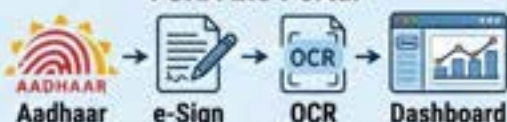
Optical Character Recognition (OCR):

Digitizes scanned papers, automates financial scrutiny in portals, eliminates physical paperwork.

MAIN ARGUMENTS

Core Thesis: Transition from archaic paper Bureaucratic Policing to **REAL-TIME ALGORITHMIC OVERSIGHT.**

Streamlining & Security via FCRA 2.0 Portal



Workflow handling 15k-20k applications, 17k annual returns.
DUAL GOAL: Minimize bureaucratic hurdles, enable real-time tracking of funds.

Alleviating Diaspora Friction via e-OCI



Addresses logistical pain points for 50 lakh OCI cardholders. Real-time online verification, eliminates re-issuance logjam.

MULTIDIMENSIONAL ANALYSIS



Social

Grassroots NGOs lack tech, compliance burden can chill localized programs.



Political

Insulates elections from foreign lobbying. Potential for selective targeting of critics.



Legal

Balances Article 19(1)(c) freedoms and 19(4) restrictions. Principles of natural justice.



Ethical

State security vs human solidarity. Humanitarian funding delays create dilemmas.



International

Boosts soft power with 50-lakh strong diaspora, but crackdowns invite global criticism.



Economic

FATF compliance, protects formal finance, separates FDI (growth) from philanthropy (hidden agendas).

HISTORICAL EVOLUTION



LOGICAL & PHILOSOPHICAL BASE



Primacy of Westphalian Sovereignty: Democracy must be funded by its own citizens. Foreign influence as an artificial distortion.
Shift from Ex-Post to Ex-Ante Governance: Using Freedom of Association (Article 19) balanced against public order.
Facilitative State for Diaspora: OCI about absolute facilitation, locking in diaspora loyalty as soft power and economic assets.

SYLLABUS & NCERT LINKAGES

GS Paper II: Governance, NGOs role, SHGs, donors, and regulatory bodies.

GS Paper III: Internal Security, communication networks, cyber security, money-laundering.

GS Paper IV: Ethics in Public administration, ethical dilemmas.

Class XI/XII Pol Sci & Sociology: Article 19 freedoms, 1970s instability (Crisis of Democratic Order), Weberian bureaucracy.

WAY FORWARD & QUESTIONS

- Way Forward:** Implement Proportionality, targeted digital capacity building for NGOs, Aggregated Public Transparency Dashboards, and leverage e-OCI for diaspora philanthropy.
- Previous Questions:** UPSC/APSC samples on OCI rights, FCRA enforcement Ministry, NGOs, NGOs, alternative service model, diaspora influence, and emerging technologies security... Civil Society models? OCI voting models?

Centre exploring reintroduction of tigers in suitable landscapes in Bengal: Minister

Press Trust of India
KOLKATA

Union Minister of Environment, Forest and Climate Change Bhupender Yadav on Tuesday said the Centre is exploring the reintroduction of tigers in suitable landscapes across West Bengal through scientific planning, while asserting that conservation has become an integral part of India's development agenda.

Citing the success of tiger reintroduction in Sariska in Rajasthan, where the population has increased from zero in 2008 to 56 at present, Mr. Yadav said the government is exploring the possibility of reintroducing tigers in suitable habitats in West Bengal, the home of the Royal Bengal Tiger.



Lord of the forest: A tiger in Bengal's Sundarbans. FILE PHOTO

He also highlighted the country's conservation gains, saying the number of tiger reserves has risen from 47 to 58 since 2014, while the population of Asiatic lions has increased from 523 in 2015 to 891 in 2026. Referring to India's biodiversity, Mr. Yadav said that despite accounting for only 2.4% of the world's land area, the country is

home to 7% to 8% of all recorded species.

Highlighting the government's conservation initiatives, the Minister said India has shifted from a reactive approach to a proactive one to environmental governance since 2014.

"Conservation is no longer viewed as an isolated environmental concern. It is now an integral pillar of

our vision for sustainable development," he said.

Mr. Yadav said India is contributing to global environmental action through initiatives such as Mission LiFE, the International Solar Alliance, the International Big Cat Alliance and the Global Biofuel Alliance.

Ramsar sites

The number of Ramsar sites has expanded from 24 to 100 during the period, while the area notified as eco-sensitive zones has grown significantly.

Stressing the importance of scientific documentation in conservation, he said institutions such as the Zoological Survey of India and the Botanical Survey of India play a crucial role in protecting biodiversity.

- **Key Terms and Explanations**
- **Species Reintroduction:** This refers to the deliberate release of a species into the wild, from captivity or other areas where it survives, into a region where it has become locally extinct or severely depleted. The ultimate goal is to establish a healthy, self-sustaining population. For instance, as detailed in [image_a9dae4.jpg](#), the reintroduction of tigers in Sariska, Rajasthan, successfully revived a population that had completely vanished due to poaching.
- **Eco-Sensitive Zones (ESZs):** These are buffer zones or transition areas surrounding Protected Areas, such as National Parks and Wildlife Sanctuaries. Notified by the Ministry of Environment, Forest and Climate Change (MoEFCC) under the Environment (Protection) Act, 1986, their purpose is to regulate human activities around wildlife pockets, acting as "shock absorbers" to prevent sudden ecological transitions.
- **Ramsar Sites:** These are wetlands of international importance designated under the Ramsar Convention, an intergovernmental environmental treaty established in 1971. These sites are recognized for their ecological significance and are managed under the principle of "wise use" to sustain both biodiversity and human livelihoods.
- **International Big Cat Alliance (IBCA):** A global initiative launched by India aimed at protecting and conserving the world's seven major big cat species (Tiger, Lion, Leopard, Snow Leopard, Puma, Jaguar, and Cheetah). It fosters international collaboration, knowledge sharing, and financial pooling among range countries.
- **Mission LiFE (Lifestyle for Environment):** An India-led global mass movement that shifts the focus from passive environmental regulation to active, community-driven behavioral change. It encourages individuals to adopt sustainable, mindful consumption patterns instead of a destructive "use-and-dispose" lifestyle.
- **Proactive Environmental Governance:** A shift from a "reactive" framework—where environmental interventions are made only after a disaster or ecological collapse occurs—to a "proactive" framework. This involves active ecological restoration, scientific documentation, and long-term landscape-level planning to prevent degradation before it takes root.

- **Main Arguments and Substantive Parts**

- The contemporary conservation paradigm centers on the idea that environmental preservation is no longer an isolated ecological goal but an intrinsic pillar of sustainable national development.

- **The Core Thesis**

- The central argument posits that India has successfully transitioned from a reactive, firefighting approach to environmental governance to a proactive, scientific, and landscape-based restoration model. This is exemplified by the active pursuit of species reintroduction in historically native habitats where populations have collapsed, such as parts of West Bengal.

- **Key Supporting Points & Evidentiary Data**

- **Success of Active Management:** The proof of concept for species reintroduction lies in the Sariska Tiger Reserve model. As documented in **image_a9dae4.jpg**, Sariska's tiger population was completely wiped out in 2008, but through scientific translocation and habitat management, the population has rebounded significantly to 56 individuals by 2026.

- **Scaling Up Conservation Infrastructure:** There has been a systematic expansion of protected networks. The number of designated tiger reserves has grown from 47 to 58, ensuring targeted financial and legislative backing across a wider geographical area.

- **Biodiversity Disproportionality:** India holds a monumental ecological responsibility. While occupying a mere 2.4% of the world's total land area, the country nurtures nearly 7% to 8% of all recorded global species. This disproportionate richness demands highly sophisticated conservation strategies.

- **Massive Wetland Protection:** Wetland conservation has seen unprecedented acceleration, with the number of internationally recognized Ramsar sites expanding dramatically from 24 to 100, safeguarding vital aquatic ecosystems that act as carbon sinks and hydrological regulators.

- **Counter-Arguments and Conceptual Challenges**

- While the successes are clear, species translocation faces legitimate scientific and administrative skepticism. Critics point out that reintroducing apex predators like the Royal Bengal Tiger into highly fragmented landscapes can exacerbate human-wildlife conflict if the prey base is inadequate or if corridor connectivity is compromised. Furthermore, relying purely on quantitative indicators (such as a rising number of animals or reserves) can mask deep-seated qualitative challenges, such as genetic bottlenecks in isolated populations or the degradation of forest interiors due to invasive species.

- **Historical Evolution of the Issue**
- **Pre-Independence to Post-Independence Era (Up to 1970s):** For decades, wildlife management was dominated by a colonial mindset that viewed forests primarily as sources of timber revenue and big game as trophies. Unchecked hunting by royalty and colonial officers, combined with post-independence agricultural expansion, led to a catastrophic decline in megafauna, pushing species like the Asiatic cheetah to extinction and the tiger to the brink of collapse.
- **The Legislative and Preservationist Turning Point (1970s - 1990s):** Recognizing the existential crisis facing India's wildlife, the government enacted the Wildlife (Protection) Act in 1972, creating a stringent legal framework for species protection. In 1973, Project Tiger was launched, introducing a "fortress conservation" model that focused on creating exclusive, inviolate core areas for tigers. This era succeeded in halting the immediate freefall of wildlife populations.
- **The Poaching Crisis and the Sariska Wake-Up Call (Early 2000s):** The limits of passive protection became glaringly obvious in the mid-2000s when systematic poaching led to the local extinction of tigers in Sariska (2004-2005) and Panna. This institutional shock forced a radical overhaul of conservation strategies, leading to the creation of the National Tiger Conservation Authority (NTCA) in 2006 and introducing the concept of active tiger translocation and scientific reintroduction in 2008.
- **The Modern Paradigm of Integrated Governance (2014 - 2026):** Today, conservation has evolved beyond isolated sanctuaries into landscape-level management. This period is defined by a massive scale-up of conservation networks (58 tiger reserves, 100 Ramsar sites) and the internationalization of India's environmental policy through global platforms like the International Big Cat Alliance (IBCA) and Mission LiFE, positioning conservation as an active partner to sustainable economic growth rather than an obstacle to it.
- **Way Forward**
- **Rigorous Carrying Capacity and Prey-Base Assessments:** Before any tiger reintroduction occurs in West Bengal or elsewhere, exhaustive ecological audits must be conducted. This includes restoring degraded forest interiors, eradicating invasive weed species, and actively augmenting the wild prey base (like spotted deer and sambar) to ensure the habitat can naturally sustain apex predators.
- **Smart and Tech-Driven Conflict Mitigation:** Governments must deploy advanced technology, including AI-powered thermal cameras along forest fringes, real-time drone surveillance, and satellite-tagged tracking of translocated animals. Early warning systems can alert local villages before a predator wanders close, drastically lowering human-wildlife encounters.
- **Institutionalizing Community-Led Conservation:** Conservation should be democratized by transforming local communities from passive bystanders into primary stakeholders. This can be achieved by channeling a fixed percentage of reserve revenues directly into village development committees, training youth as wildlife guides, and compensating any livestock loss within 48 hours via digital direct benefit transfers.
- **Securing Structural Wildlife Corridors:** Isolated reserves inevitably lead to genetic inbreeding and population crashes. Linear infrastructure development (such as highways and railway tracks crossing through Bengal's forest patches) must mandatory incorporate eco-ducts, underpasses, and canopy bridges designed by institutions like the Wildlife Institute of India to ensure safe, continuous gene flow across landscapes.

AXIA IAS ACADEMY PRESENTS: COMPREHENSIVE WILDLIFE CONSERVATION ANALYSIS - EXPLORING TIGER REINTRODUCTION AND PROACTIVE ENVIRONMENTAL GOVERNANCE



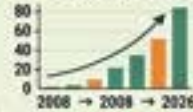
AXIA
IAS ACADEMY
RISE ABOVE THE REST

HISTORICAL EVOLUTION OF CONSERVATION



CORE THESIS: PROACTIVE GOVERNANCE

SUCCESS OF SARISKA REINTRODUCTION
(Population 0 in 2008 -> -> 56 in 2026)



EXPANSION OF NETWORKS
(Tiger Reserves: 47 -> 58)

INDIA'S BIODIVERSITY RESPONSIBILITY
(2.4% Land Area vs. 7-8% Recorded Species)

WETLAND PROTECTION
(Ramsar Sites: 24 -> 100)



Vasudhaiva Kutumbakam - Co-existence

SCIENTIFIC & PHILOSOPHICAL BASE

SCIENTIFIC LOGIC
(Trophic Cascades)



PHILOSOPHICAL LOGIC
(Ecocentrism)



Vasudhaiva Kutumbakam - Co-existence

ECONOMIC
Valuation of Ecosystem Services, Green Economy & Eco-tourism

INTERNATIONAL
International Big Cat Alliance (IBCA) and Global Treaty Commitments

SOCIAL
Community Rights vs. Wilderness, Human-Wildlife Conflict

MULTIDIMENSIONAL ANALYSIS

ETHICAL
Rights of Nature, Translocation Ethics

POLITICAL
Cooperative Federalism between Centre and State Departments

LEGAL
Wildlife (Protection) Act, 1972 and NTCA Statutory Provisions

UPSC CSE & NCERT LINKAGES



NCERT BOOKS
(Classes 10, 11, 12 Geography/Biology)



GS PAPERS 1-4
• Geography of India
• Environment & Disaster Management



ESSAY & ETHICS
• Environment & Disaster Management
• Environmental Ethics

WAY FORWARD



Rigorous Carrying Capacity Audits



SMART Tech (AI, Drones, Satellite Tracking)



Community-Led Conservation Stakeholders



Secure Structural Wildlife Corridors



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India adds 709 new species to its fauna database

Shiv Sahay Singh
KOLKATA

India added 709 species to its fauna in 2025, which includes 483 species new to science and 226 species recorded for the first time in India. The country also added 353 taxa to its flora, of which 14 are infraspecific taxa.

The details of new discoveries and new records by the Zoological Survey of India and Botanical Survey of India were released by Union Minister for Environment, Forest and Climate Change Bhupender Yadav in Kolkata on Tuesday.

Kerala highest in fauna
"India's total faunal biodiversity now stands at 1,05,953 species, reaffirming its status as one of the world's premier mega diverse nations," a press statement from Zoological Survey of India said.

A State-wise analysis of



Enriching data: Among the fauna discovered in 2025 is *Myotis himalaicus*, a new species of Himalayan bat. SPECIAL ARRANGEMENT

the new animal discoveries point out that Kerala recorded the highest 98 new species of animals, followed by West Bengal with 76 species, Karnataka 67 species and Arunachal Pradesh 65 species of fauna.

Among the animal groups added to the country's fauna database, Hymenoptera contributed the highest number of additions (106).

This was followed by Lepidoptera (65), Diptera

(64), Arachnida (64), Coleoptera (55) and Pisces (50), reflecting the remarkable diversity and continuing discovery of India's invertebrate fauna.

Among the crucial fauna discovered in 2025, *Myotis himalaicus*, a new species of Himalayan bat. *Ptyctolaemus mamdaphaensis* and *Ptyctolaemus siangensis* are two newly discovered species of green fantailed lizard and *Lycodon irwini*, a species

commonly known as Irwin's wolf snake.

Of the 353 plant taxa added to the country's floral database, 221 taxa have been described as new to science, while 132 taxa represent new distributional records for India, thereby expanding the known geographical range of several plant groups and enriching the country's floristic inventory.

A State-wise analysis of the plant discoveries indicates that Arunachal Pradesh emerged as the leading contributor with 49 discoveries, followed by Uttarakhand (39) and Kerala (37).

Vascular plants

The Plant Discoveries, 2025 documents 154 angiosperms, three pteridophytes, 13 bryophytes, 62 lichens, 93 fungi, 22 algae, and six microbes. Among the most notable discoveries are several wild relatives of economically and

ecologically significant plant groups, including Begonia, Impatiens (balsams), legumes, and orchids.

"Approximately 43% of the newly described taxa belong to vascular plants, while the remaining discoveries comprise a wide array of non-vascular organisms, highlighting the growing scientific attention being accorded to these ecologically significant groups," a press statement by the Botanical Survey of India said.

Among the plants discovered *Polystichum siangense*, a recently discovered species of fern belonging to the family *Dryopteridaceae* found in Siang district of Arunachal Pradesh, *Miliusa beddoeii*, and new wild member of the custard apple family discovered from Western Ghats and *Hericium indicum* is a recently discovered species of wild edible tooth-fungus.

- **Key Terms and Explanations**

- **Mega-Diverse Nation:** A designation given to countries that harbor a significant percentage of the Earth's total species and display high levels of endemism. India is one of the world's 17 mega-diverse nations, a status reinforced by its total faunal inventory crossing the milestone of 1,05,953 species.
- **Taxa / Taxonomy:** Taxonomy is the branch of science concerned with classification, description, identification, and naming of organisms. A "taxa" (plural: taxon) is a taxonomic group of any rank, such as a species, family, or class. For instance, the identification of *Polystichum siangense* represents a new taxon within the fern family *Dryopteridaceae*.
- **New to Science vs. New Distributional Record:** A species "new to science" means it was completely undiscovered globally until its formal description (e.g., the newly identified green fan-throated lizards, *Ptyctolaemus mamdaphaensis* and *Ptyctolaemus siangensis*). Conversely, a "new distributional record" implies the species was known to exist elsewhere in the world but has been recorded within India's geographical boundaries for the very first time (such as *Lycodon irwini*, or Irwin's wolf snake).
- **Infraspecific Taxa:** This refers to any taxonomic level below the rank of species, such as subspecies, varieties, or forms. It denotes localized genetic adaptations within a single species, crucial for tracking evolutionary divergence.
- **Vascular vs. Non-Vascular Plants:** Vascular plants possess specialized conducting tissues (xylem and phloem) for transporting water and nutrients, accounting for nearly 43% of new floral additions (like angiosperms and pteridophytes). Non-vascular organisms lack these structures (such as bryophytes, lichens, and algae) but play critical pioneer roles in ecosystem formation.
- **Hymenoptera:** An economically and ecologically vital order of insects comprising sawflies, wasps, bees, and ants. This group acts as primary pollinators and biological pest controllers, making up the highest number of new faunal additions (106 species) in recent discovery cycles.

- **Main Arguments and Substantive Parts**

- The core narrative shifts away from viewing biodiversity as a static metric, highlighting instead that taxonomic exploration is a dynamic, foundational engine for ecological sovereignty, conservation planning, and economic security.

- **The Core Thesis**

- Taxonomic exploration is not merely an academic exercise but a sovereign ecological imperative. Documenting baseline biodiversity is essential for building resilient conservation strategies, establishing intellectual property rights over bio-resources, and mitigating the impacts of climate change.

- **Key Assertions and Supporting Data**

- **Undiscovered Ecological Hotspots:** The data presented in the scientific updates from 2025 demonstrates that India's biological frontier is far from fully mapped. The addition of 709 faunal species and 353 floral taxa within a single year proves that robust field research continually reshapes our understanding of ecological richness.
- **Geographic Clustering of Diversity:** Discoveries are highly concentrated in specific ecological refugia. In terms of fauna, the Western Ghats (with Kerala leading at 98 species) and the Eastern Himalayas/Northeast (with Arunachal Pradesh leading floral discoveries at 49 taxa) act as global evolutionary evolutionary cradles.
- **Taxonomic Domination of Invertebrates and Cryptogams:** The vast majority of faunal additions occur within invertebrate orders like Hymenoptera (106), Lepidoptera (65), and Diptera (64). Similarly, the floral realm is heavily enriched by non-vascular cryptogams and fungi (93 species), highlighting the immense, unseen biomass driving soil health and nutrient cycling.

- **Counterarguments and Structural Challenges**

- **The Taxonomic Impediment:** While discoveries are rising, the rate of description is severely bottlenecked by a shortage of classical taxonomists, limited funding for field biology, and a institutional tilt toward molecular biology at the cost of field morphology.
- **The Race Against Silent Extinction:** A counter-narrative to this celebratory data is the reality of habitat fragmentation. Many species are likely going extinct before they are even discovered, meaning our current databases capture only a fraction of what once existed.

- **Historical Evolution of the Issue**

- **The Colonial Imperative (1890–1947):** Taxonomic infrastructure began under British rule with the establishment of the Botanical Survey of India (BSI) in 1890 and the Zoological Survey of India (ZSI) in 1916. The primary objective was colonial resource mapping—cataloging timber, medicinal plants, and wildlife to fuel imperial industries.
- **Post-Independence Institutional Reorientation (1947–1970s):** Following independence, ZSI and BSI were reorganized to serve national interests. The focus shifted from economic extraction to ecological documentation. The enactment of the Wildlife (Protection) Act in 1972 institutionalized species protection, though it prioritized charismatic macrofauna over cryptic invertebrates and flora.
- **The Paradigm Shift via Global Conventions (1990s–2000s):** India's ratification of the Convention on Biological Diversity (CBD) in 1992 firmly established national sovereignty over biological resources. This led to the landmark passage of the Biological Diversity Act in 2002, creating a three-tiered regulatory structure: the National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs), and local Biodiversity Management Committees (BMCs).
- **The Modern Era of Digital and Molecular Taxonomy (2010s–2026):** Over the last decade, traditional morphology has integrated with advanced technologies like DNA barcoding, GIS mapping, and citizen science portals. The recent discoveries publicized by the Ministry of Environment, Forest, and Climate Change mirror this technological evolution, turning static checklists into live, dynamic spatial databases.

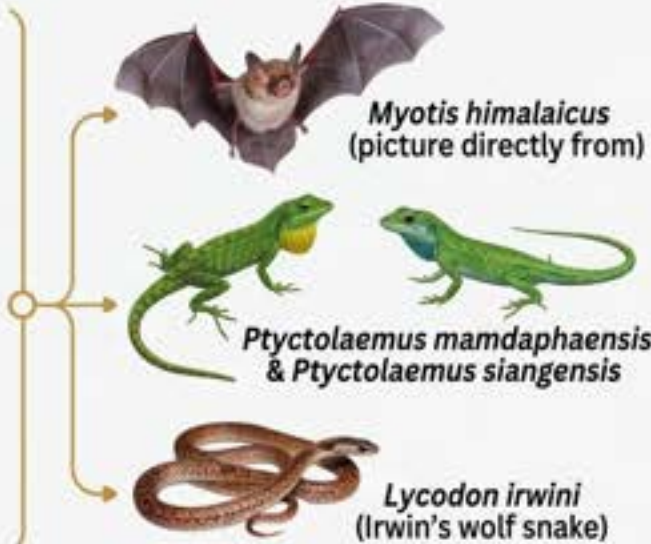
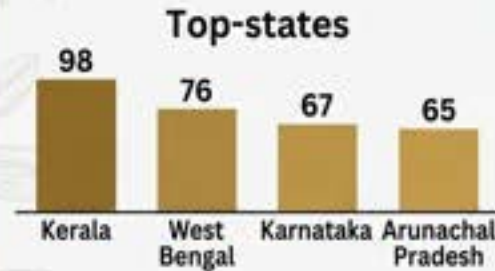
- **Way Forward**

- **Overcoming the Taxonomic Impediment:** We need to revitalize classical taxonomy by launching dedicated national fellowships, creating secure career paths for young taxonomists, and increasing funding for field-based research institutions.
- **Integrating Modern Technology:** India should fast-track the creation of a comprehensive digital repository for its biological resources. Combining traditional morphological identification with AI-driven image recognition and high-throughput DNA barcoding will accelerate the documentation of unknown species.
- **Adopting Landscape-Level Conservation:** We must move beyond simply protecting individual species to safeguarding entire landscapes. High-discovery zones, such as the Siang district in Arunachal Pradesh, should be designated as eco-sensitive zones or community reserves to protect their unique habitats.
- **Empowering Local Communities:** We should strengthen local Biodiversity Management Committees (BMCs) by providing them with better resources and training. Empowering these committees to maintain accurate People's Biodiversity Registers (PBRs) ensures that the benefits of bioprospecting flow directly back to the traditional guardians of these ecosystems.

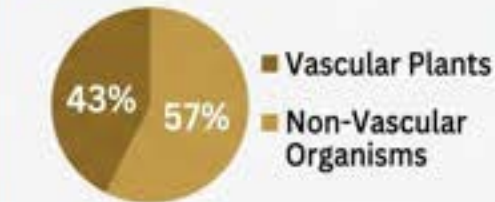
INDIA'S NEW SPECIES DISCOVERIES (2025): COMPREHENSIVE UPSC ANALYSIS.

709 FAUNA & 353 FLORA TAXA ADDED IN 2025.

FAUNA: Total 709 ADDITIONS



FLORA: Total 353 TAXA ADDED (14 infraspecific)



List of notable families:
Begonia, Balsams (Impatiens),
Legumes, and Orchids

KEY CONCEPTS

Taxon/Taxa: Scientific naming/classification.

New to Science vs. New Record: Species globally new vs. first time recorded in India.

Vascular vs. Non-Vascular: Plants with specific transport tissues vs. those without (ferns, mosses).

UPSC GS RELEVANCE

- 1) GS Paper III: Environment & Biodiversity.
- 2) Concept of Mega-diverse Nations (India is one of 17).
- 3) Taxonomic Organizations (ZSI/BSI role).
- 4) State Biodiversity Management. (Kerala, AP, etc.).
- 5) International/Economic aspects (bioprospecting, conservation, ABS)

HISTORICAL EVOLUTION

- Colonial Era (BSI 1890, ZSI 1916).
- Shift from extraction to systematic documentation.
- Post-Independence (Biodiversity Act 2002, Nagoya Protocol compliance).
- Modern Digital Databases and State Biodiversity Boards

LEADING INSTITUTIONS

Zoological Survey of India (ZSI) and description of Botanical survey of india (zsi Survey with modern infographic style.

Botanical Survey of India (BSI), with modern infographic style it Botanical survey with modern infographic style.



Criminal justice system's digital push aims for a full roll-out by next year

However, data maintained by the NCRB shows only 46% of FIRs were digitally transmitted to courts; out of 36 States, U.Ts, Haryana, Goa, Assam, Punjab, and Chandigarh have implemented all parameters, while 23 States are above national average

Vijaita Singh
NEW DELHI

From January 1, 2027, procedures related to all investigations and trials under the new criminal laws will be recorded digitally, a senior Home Ministry official said on Tuesday.

The official said the nationwide rollout of the Interoperable Criminal Justice System (ICJS) - which integrates police, courts, prisons, forensics, and prosecution on a single platform - is expected to be completed soon, with emphasis on end-to-end digital workflow.

The data will be stored in the government-owned cloud platform MeghRaj.

However, data maintained by the National Crime Records Bureau (NCRB) showed that the first information report (FIR) consumption by courts, the process through which cases are electronically transmitted to and received by court systems, was at 46%, less than half of the cases registered.

The three new criminal laws, Bharatiya Nyaya Sanhita (BNS), Bharatiya Sakshya Sanhita (BSS), and Bharatiya Nagarik Su-

Digital drive

The digitisation aims to make way for faster, more transparent, and integrated justice delivery nationwide



• 25 new forensic laboratories have been added in two years to support mandatory forensic investigations

• All investigations and trials under BNS, BSS, and BNSS will be digitally recorded and stored on the MeghRaj government cloud platform

• The Interoperable Criminal Justice System (ICJS) connects police, courts, prisons, prosecution, and forensic laboratories on a single platform

• Over 63,500 zero-FIRs have been registered, allowing complaints to be filed regardless of jurisdiction and transferred electronically

• Implementation has risen from 46.47% to 70.06% since January 2025, with improved chargesheet compliance and millions of digital evidence IDs and e-summons generated

raksha Sanhita (BNSS), replaced the Indian Penal Code (1860), Indian Evidence Act (1872), and the Code of Criminal Procedure (1973), respectively.

These came into effect on July 1, 2024, and in the past two years, 74.66 lakh FIRs have been filed under BNS. Since these laws require upgraded infrastructure and forensic capabilities, States and Union Territories have been given five years to implement all the pillars of criminal justice system.

As many as 63,572 zero-FIRs, those which can be

filed irrespective of jurisdiction, have been registered under the BNSS. Though the provision existed earlier, the BNSS gave it a statutory backing. The official said that around 13,000 zero-FIRs were filed in different districts of the same State and fell under the category of "intra-State transfers".

The Crime and Criminal Tracking and Network Systems, the platform which is used to file FIRs across 16,000 police stations in the country, has an option to register cases in 23 languages and the Bhashini

App can translate the zero-FIR to the language used in the jurisdiction concerned, the official said.

"A police person cannot turn away a complainant from filing a zero-FIR. Once registered, the case is transferred to the police station concerned and they can decide further upon inquiry, if they want to close the case or pursue the investigation," said the official. Out of 36 States and Union Territories, Haryana, Goa, Assam, Punjab, and Chandigarh have implemented all the parameters of the justice system, while 23 States and U.Ts, including Delhi, are above the national average.

The official said due to connectivity issues, some of the northeastern States were lagging behind.

More forensic labs

As the new laws make forensic examination of crime scenes mandatory in cases punishable by seven years or more, as many as 25 new forensic laboratories (FSL) were added in the past two years, taking the total number of laboratories from 129 in 2023 to 154 in 2025.

While in 2023, the forensic labs received 8,44,589 cases for exami-

nation, out of which 4,64,879 were pending, in 2025, the cases received were 11,11,798 with 3,90,786 pending. More than 700 mobile forensic units have been deployed so far.

After the new laws came into effect, the national implementation score increased from 46.47% (January 2025) to 70.06% (June 2025). The 60-day chargesheet compliance rose from about 51% to 67%, and the 90-day compliance rose from about 40% to 61%. Additionally, 46.5 lakh digital evidence (Sakshya) IDs were generated, and 56.74 lakh e-summons were served.

As on May 31, 2026, there are 37.68 crore police records, which include 9.9 crore FIRs and 7.64 crore chargesheets in the database, which can be accessed by police and investigating agencies.

The Ministry official said that improving Internet connectivity, especially in remote and northeastern parts of the country, standardising processes across States and U.Ts, ensuring full interoperability among all criminal justice platforms and training of personnel were some of the challenges ahead.

- **Key Terms and Explanations**

- **Interoperable Criminal Justice System (ICJS)**

- The ICJS is a conceptual and technological framework designed to integrate the five core pillars of the criminal justice system: Police (via CCTNS), e-Courts, e-Prisons, Forensics, and Prosecution into a seamless, single-platform data-sharing network.

- **Zero-FIR**

- A Zero-FIR allows a victim to register a First Information Report (FIR) at any police station across the country, irrespective of where the crime actually took place. The receiving station records the complaint, assigns it a serial number of "0" (Zero), and immediately transfers the case electronically to the appropriate police station holding geographic jurisdiction for active investigation.

- **MeghRaj (Government Cloud Platform)**

- MeghRaj is the Government of India's cloud computing initiative aimed at speeding up the delivery of e-services while optimizing ICT spending. In the context of judicial digitization, it acts as the centralized, secure, state-owned digital repository where all sensitive criminal records, trial videos, and investigation logs are securely hosted.

- **Bhashini AI Translation App**

- An artificial intelligence-driven language translation platform integrated into state systems to overcome India's vast linguistic fragmentation. It enables law enforcement officers to instantly translate legal complaints and Zero-FIRs recorded in local regional languages into the operational language of the jurisdiction where the case is ultimately transferred and tried.

- **Sakshya ID**

- A unique digital identifier generated for every piece of electronic or scientific evidence collected during a criminal investigation. It establishes a digital chain of custody, ensuring that video recordings of crime scenes, digital documents, or forensic outputs cannot be tampered with, deleted, or substituted during the trial lifecycle.

- **Main Arguments and Substantive Parts**
- **The Core Thesis**
 - The overarching paradigm shift within India's criminal justice system centers on a complete migration from a siloed, paper-dependent administrative framework to an end-to-end digital architecture. Backed by statutory compliance under modern legal codes (BNS, BNSS, and BSS), this digital transformation aims to introduce unprecedented velocity, objective transparency, and scientific consistency across nationwide investigations and judicial trials.
- **Pillars of Progress and Structural Milestones**
 - **Surging National Implementation:** The operational footprint of digital tracking tools has scaled rapidly, with the national implementation score leaping from 46.47% in early 2025 to 70.06% by mid-2026.
 - **Statutory Timelines and Efficiency:** The integration has positively forced bureaucratic efficiency; compliance rates for filing chargesheets within the strict statutory 60-day window rose to 67%, while 90-day compliance targets climbed to 61%.
 - **Scientific Backstopping:** To meet the modern legal mandate requiring forensic examination for all offenses carrying punishments of seven years or more, India scaled its Forensic Science Laboratories (FSL) network from 129 in 2023 to 154 by 2025, alongside deploying over 700 mobile forensic units to secure crime scenes instantly.
- **Institutional Bottlenecks and Counter-Tensions**
 - **The Court Consumption Deficit:** Despite massive digital generation on the police side, the actual consumption and electronic processing of FIRs by court systems hover at a modest 46%. This creates a digital-to-analog bottleneck where information hits a wall at the judicial threshold.
 - **The Federal Digital Divide:** Implementation speeds remain starkly uneven. While a few frontrunners (such as Haryana, Goa, Assam, Punjab, and Chandigarh) have achieved total alignment across all parameters, twenty-three states perform above the national average, leaving a tail of lagging jurisdictions.
 - **Geographic and Infrastructure Hurdles:** Remote areas, particularly within Northeastern states, face consistent connectivity deficits, showing that a sophisticated digital legal framework can only be as effective as the underlying telecom infrastructure supporting it.
- **Way Forward**
- **Resolving the Court Consumption Bottleneck**
 - To push court processing rates well past the current 46% mark, the judicial branch must deploy matching hardware and custom APIs that automatically pull police entries into court dockets without requiring manual review or local data entry. Dedicating specific administrative data officers to lagging trial courts can ease this transition.
- **Targeted Infrastructure Funding for the Digital Divide**
 - The Central Government should introduce dedicated financial grants tailored for remote topographies, particularly across the Northeastern states, ensuring that police posts in deep terrains receive satellite-backed internet access. No citizen's access to justice should be limited by their proximity to a telecom tower.
- **Comprehensive Upskilling and Institutional Training**
 - Technology is only as good as its human operators. State police academies must design continuous, mandatory certification modules centered on digital evidence handling, generating Sakshya IDs, and navigating the ICJS cloud interface. This training must extend across the board, from senior investigators to desk constables.
- **Implementing an Airtight Data Governance and Privacy Framework**
 - As millions of personal profiles and case records accumulate on the MeghRaj cloud platform, the Ministry of Home Affairs must enforce a strict, zero-trust data governance policy. Implementing clear access logs, end-to-end data encryption, and severe penalties for leaks will protect citizen privacy and secure institutional data integrity.

AXIA IAS ACADEMY: Comprehensive Analysis of India's Digital Criminal Justice System



PM asks Secretaries to focus on ease of doing business, self-reliance

The Hindu Bureau
NEW DELHI

Prime Minister Narendra Modi on Tuesday exhorted the Secretaries of all Ministries and Departments to focus on ensuring tangible impact of government schemes on the lives of people and boost "Aatma-nirbharta" (self reliance).

Nearly 80 Secretaries were present in the meeting, which comes amid talks of a Cabinet reshuffle. The meet focused on the key themes of 'Ease of Doing Business' and 'Ease of Living' through deregulation and other reforms; and promoting self-reliance.

Mr. Modi stressed the importance of adopting a whole-of-government approach, asking the departments to work together rather than in isolation.

Emphasising the significance of integrated planning and coordination, he encouraged wider utilisation of the PM GatiShakti as an effective platform for inter-departmental coordination and informed



Narendra Modi

decision-making.

According to government sources, during the interaction, the Secretaries outlined the major steps being taken by their respective Ministries and Departments in line with the themes of self-reliance, besides "Ease of Doing Business" and "Ease of Living".

During their presentations on reform measures and progress made across sectors, they highlighted the ongoing efforts to translate the Prime Minister's vision into actionable outcomes. While also discussing sector-specific challenges, the Secretaries outlined a range of future strategies to enhance governance and service delivery.

- **Key Terms and Explanations**

- **Aatmanirbharta (Self-Reliance):** This concept represents a strategic shift away from external dependencies in critical sectors, aiming to transform India into a global manufacturing hub. Rather than promoting isolationism, it emphasizes building robust domestic capabilities, enhancing local supply chains, and fostering innovation.
- **Ease of Doing Business (EoDB):** A regulatory framework aimed at reducing administrative hurdles, simplifying compliance, and creating a predictable environment for businesses and entrepreneurs. It seeks to convert the state's role from a stringent regulator into an active facilitator.
- **Ease of Living (EoL):** A citizen-centric governance philosophy that focuses on minimizing the daily administrative burdens faced by regular citizens. It leverages technology to make public services more accessible, transparent, and direct.
- **Whole-of-Government Approach:** An administrative model that breaks down rigid institutional silos. It requires various ministries and departments to work horizontally and collaboratively toward a common public policy objective, rather than operating in isolation.
- **PM GatiShakti National Master Plan:** A technology-driven, GIS-based digital platform designed for integrated planning and coordinated implementation of infrastructure connectivity projects. It brings multiple ministries (including Railways, Roadways, and Shipping) onto a single digital interface to ensure synchronized execution.

- **Main Arguments and Substantive Parts**

- The contemporary discourse on Indian administration centers on a fundamental thesis: **Modern governance cannot deliver macroeconomic growth or social welfare effectively if its administrative machinery remains trapped in fragmented, colonial-era silos.**

- **The Core Arguments**

- **Synergy Over Separation:** The primary argument is that infrastructure development and policy execution must move away from isolated, departmental decision-making. When ministries work in isolation, it leads to institutional friction, delayed clearances, and inefficient resource allocation.
- **Deregulation as a Catalyst for Sovereignty:** Simplifying regulations and removing redundant compliance requirements directly supports national self-reliance. When domestic industries spend less time on bureaucratic compliance, they can allocate more resources to innovation, scaling up, and global competitiveness.
- **Technology as an Administrative Unifier:** Digital platforms like PM GatiShakti are not merely IT upgrades; they serve as structural governance reforms. By providing a single source of data across ministries, technology forces institutional alignment and introduces data-backed accountability into project planning.

- **Counterarguments and Structural Challenges**

- **The Risk of Over-Centralization:** Critics and administrative observers note that a highly integrated, top-down approach can sometimes centralize decision-making power, potentially reducing the operational flexibility of individual departments or state governments.
- **The Execution-Compliance Gap:** While policies look well-integrated at the Union level, transferring this "whole-of-government" mindset to the state and local administration levels remains a significant bottleneck due to varying institutional capacities.

- **Historical Evolution of the Issue**
- **Pre-Independence Era:** The colonial Civil Service (the "Steel Frame") was designed primarily for revenue collection and maintaining law and order. It operated on rigid hierarchies, strict compartmentalization, and maintained a clear distance between the administration and the public.
- **Post-Independence Era (1947–1991):** India transitioned toward a planned welfare economy. While this period expanded the state's reach, it also led to the "License-Permit-Quota Raj." Departments grew into protective silos, and excessive regulations unintentionally stifled private enterprise and slowed infrastructure deployment.
- **Economic Liberalization (1991):** The dismantling of the License Raj marked the first major wave of deregulation. The state began shifting its identity from a controller to a supervisor of markets. However, while the economy opened up, internal bureaucratic procedures remained siloed.
- **The E-Governance Wave (2000s–2010s):** The introduction of the National e-Governance Plan (NeGP) began digitizing individual department processes. While this improved internal efficiency, it initially created "digital silos," as the systems of different ministries rarely communicated with one another.
- **The Modern Era of Coordinated Governance:** The current phase centers on cross-departmental integration. Administrative strategies have evolved to combine Ease of Doing Business with Ease of Living, using unified geospatial and digital platforms to drive national self-reliance.
- **Way Forward**
- **Institutionalizing Capacity Building:** Expand initiatives like Mission Karmayogi to train civil servants at all levels of government. The training should emphasize moving away from a rigid, rules-based compliance mindset toward a collaborative, roles-based performance model.
- **Deepening Sub-National Reforms:** Shift the primary focus of Ease of Doing Business and Ease of Living rankings to the state, district, and municipal levels. It is at these local tiers where businesses interact with inspectors and citizens access daily public utilities.
- **Ensuring Data Interoperability and Privacy:** As platforms like PM GatiShakti integrate data across multiple domains, establishing strong data-governance protocols is crucial. Clear guidelines are needed to ensure smooth data sharing between ministries while maintaining robust cybersecurity standards.
- **Setting Up Citizen Feedback Loops:** Integrate automated, real-time feedback mechanisms into public service delivery portals. This allows the administration to assess the actual on-the-ground impact of deregulation based on direct user experiences rather than relying solely on internal department metrics.

PARADIGM SHIFT IN INDIAN GOVERNANCE: A COMPREHENSIVE ANALYSIS (FOR CIVIL SERVICES EXAM)

1 KEY TERMS AND EXPLANATIONS

1 Aatmanirbharta (Self-Reliance)



Indigenization of Defense, PLI Schemes, Supply Chain Robustness, Innovation.

2 Ease of Doing Business (EoDB)



National Single Window System (NSWS), Simplified Compliance.

3 Ease of Living (EoL)



Digital Public Infrastructure (DPI) Services, minimized daily administrative burdens.

4 Whole-of-Government Approach



Ministries break rigid silos. Joint initiatives to reduce water-borne diseases.

5 PM GatiShakti National Master Plan



Technology-driven, GIS-based integrated planning and coordinated implementation.



Data-sensitized Digital Platform, Synchronized Execution

2 MAIN ARGUMENTS AND SUBSTANTIVE PARTS

POSITIVE

Synergy Over Separation



Reduce Institutional Friction, Efficient Resource Allocation

Deregulation as Catalyst



Increase Domestic Innovation, Global Competitiveness

Technology as Administrative Unifier



Force Institutional Data-backed Accountability

COUNTERARGUMENTS

Risk of Over-Centralization



Reduce Operational Flexibility, resistance

Execution-Compliance Gap



Address operational Flexibility capacities at state/local levels

3 HISTORICAL EVOLUTION OF THE ISSUE

[Pre-Independence] Colonial "Steel Frame"	[1947-1991] "License-Permit Raj" & Siloed Planning	[1991 Era] Economic Liberalization	[2000s-2010s] Digital Transition	[Present Day] Integrated Governance
				
Law & Order / Revenue Focus	License-Permit Raj	Deregulation & Market-Friendly Shifts	E-Governance & Right to Information	"Whole-of-Government" & PM GatiShakti

4 LOGICAL AND PHILOSOPHICAL BASE

Weberian to New Public Governance



Weberian Bureaucracy (Hierarchy) → New Public Governance (Network Collaboration).
View citizens as active partners.

Minimum Government, Maximum Governance



Reduce state intervention, build seamless regulatory ecosystem. Focused Public Service Delivery.

Mathematical Logic of Synergy



Integrated planning maximizes value of public investments. Reduce project gestation periods.

5 MULTIDIMENSIONAL ANALYSIS

SOCIAL
Inclusive social safety nets, reduced loss of daily wages.

INTERNATIONAL
Advancing strategic autonomy, global economic leadership

ECONOMIC
Lower logistics costs, manufacturing competitiveness

POLITICAL
Navigating dynamics of cooperationalism, political will.

LEGAL
Decriminalizing minor errors, outdated statutes.

ETHICAL
Removing human interfaces, decreasing corruption incentives.

Integrated Governance Impact

6 LINKAGES WITH NCERT AND UPSC CSE SYLLABUS

NCERT Textbooks	UPSC CSE Syllabus
Class XI Pol. I (Indian Const. at Work)	GS Paper II
Class XI/Econ XII	GS Paper III
Class XII (Indian Econ. Dev.)	GS Paper IV
Class X Dem. Pol.-II (Outcomes of Democracy)	- Core-deviations
	- Sub-Topies
	- Publics regulatory
	- Optionals
	Essay
	Optionals
	Public Administration
	PSIR

8 WAY FORWARD & RELEVANT PYQS

Way Forward



Relevant PYQs

Discuss structural reforms needed for culture of synergy.

Analyze statement "Minimum Government, Maximum Governance"

Discuss statement exocimum question.

Evaluate role of PM GatiShakti in lowering logistics costs.

What is Centre's new EPFO upgrade?

EXPLAINER

A. M. Jigeeesh

The Employees Provident Fund Organisation (EPFO) recently sent a text message to its subscribers that it is undertaking a "planned database consolidation and upgradation of software applications".

As part of this transition, it said, member services such as claim submission and download of passbooks are temporarily unavailable from June 26 to July 1. As part of the Centralised IT-Enabled System (CITES) project, the EPFO's effort is to modernise its service delivery mechanism through automation and rule-based processing.

Designed by the Centre for Development of Advanced Computing, the project aims to improve operational efficiency. The EPFO is hopeful that the revised mechanism will make the services more transparent, and subscribers will receive seamless services.

Current services

The EPFO is facing several technical and procedural



CITES project aims to improve EPFO's operational efficiency with one national database.

delays in member services, such as the submission of claims for deceased members and the presentation of life certificates for pensioners. At present, the EPFO has a decentralised system with separate databases in each field and regional office. The members are tied to one regional office.

In many cases, even retired beneficiaries had to go to the regional offices in jurisdictions where they had worked to submit claims or clear technical problems. Nominees of deceased members also had to approach the respective regional offices for pension or other claims. The operations are primarily done by more than 120 decentralised databases at present, with no central visibility. There have been com-

plaints that the account operations are "employer-centric" as for the majority of the claims, authorisation of the employer was necessary.

CITES provides a single centralised system architecture with one national database. Now, any PF office can process a member's service request. Members or beneficiaries will now be able to approach any PF office across the country for the redress of their queries and for seeking clarifications. Most of the services, including KYC updates, can be done online using the new platform. The current Universal Account Number (UAN) and password created by the member can be used to access the new system. Functional from 2023, CITES has so far implemented several reforms in the EPFO system, including a centralised pension payment system.

Senior officials say the centralisation process included the migration of several lakh crore data records to the centralised system.

The process

The process started on June 26 and was to be com-

pleted by June 30. The EPFO expects a downtime, due to which the services will be affected. On logging in to the EPFO Member portal using the UAN and password, the members will have access to a unified digital interface. Members can view their membership details, provident fund balances, claim status, pensionable service records, and benefits availed in this interface. EPFO offices can process the claims and can raise queries electronically through the system. Members can respond to these queries online, leading to faster resolution, minimising physical visits to EPFO offices, and thus reducing claim rejections.

Benefits for members

For EPFO members, the centralised system allows them to see all their previous member IDs under the UAN linked with a single KYC (Aadhaar). The status of the PF accumulations, service records and requests will be displayed to the member. The new interface simplifies transfers, helps maintain an accurate service history, and enables faster settlements, according to the EPFO.

- **Key Terms and Explanations**
- **Employees' Provident Fund Organisation (EPFO)**
 - A premier statutory body under the aegis of the Ministry of Labour and Employment, Government of India. It is tasked with administering a mandatory, contributory social security framework for the organized workforce. This framework fundamentally covers retirement savings, pension provisions, and group life insurance.
- **Centralised IT-Enabled System (CITES)**
 - A next-generation structural overhaul aimed at transforming the technological backbone of social security administration. Developed in collaboration with the Centre for Development of Advanced Computing (C-DAC), it replaces fragmented regional computing frameworks with an integrated, single-database architecture designed for automated, rule-based processing.
- **Universal Account Number (UAN)**
 - A permanent, unique 12-digit identification number allotted to every covered employee. It acts as an umbrella account that links multiple Member Identification Numbers issued by different employers over an individual's career span.
- **Rule-Based Processing**
 - An automated workflow paradigm where transactions, claims, and validations are evaluated entirely by pre-programmed software logic according to legal statutes, without requiring manual human intervention or arbitrary administrative discretion at every step.
- **Database Consolidation**
 - The systemic migration and merging of isolated, independent data silos maintained across distinct regional jurisdictions into a singular, comprehensive national data repository.

- **Main Arguments and Substantive Parts**

- **The Core Thesis**

- The transition of social security administration from a fragmented, geography-locked regional system to a single, centralised digital architecture is an evolutionary step toward citizen-centric governance. This transformation systematically eliminates administrative bottlenecks, strips away excessive employer control, and empowers the workforce with seamless, transparent access to their retirement assets.

- **Deconstructing the Systemic Bottlenecks**

- **The Geography Trap:** Under the legacy model, workers and beneficiaries are tied to a specific regional or field office. If technical anomalies arise or if a pensioner needs to present a life certificate, they are frequently forced to travel to the specific geographic jurisdiction where they were last employed, causing severe delays and distress.

- **The Employer-Centric Asymmetry:** For decades, the system operated on an employer-centric model where the majority of account operations and claim submissions required explicit authorization from the employer. This dynamic leaves employees vulnerable to delays or exploitation if an enterprise closes down or if labor-management relations sour.

- **Database Fragmentation:** Operating via more than 120 decentralized databases without central visibility creates structural blind spots. Processing claims for deceased members or executing inter-regional account transfers becomes an administrative ordeal due to verification delays between different offices.

- **The Centralisation and Modernisation Blueprint**

- **The Power of One National Database:** By unifying separate regional platforms into a single database architecture, the CITES project decouples the subscriber from geographic constraints. Any PF office across India can now access, process, and resolve a service request from any citizen, effectively nationalizing administrative capability.

- **Streamlined Digital Interfaces:** Incorporating a single unified digital interface backed by a robust, Aadhaar-linked KYC verification process allows subscribers to view their complete service history, check pensionable records, and monitor active transfers in real time.

- **Electronic Query Resolution:** Instead of rejecting claims outright over minor discrepancies—a major grievance for retirees—the centralized system enables offices to raise clarifications electronically. Members can respond directly through their portals, which minimizes physical office visits and dramatically lowers claim rejection rates.

- **Historical Evolution of the Issue**
- **Pre-Independence to Early Post-Independence Era (1920s–1950s)**
 - The seeds of structured labor welfare were planted with basic colonial laws like the Workmen’s Compensation Act of 1923.
 - Post-independence, India embraced a socialist welfare state model, leading to the landmark passage of the Employees’ Provident Funds and Miscellaneous Provisions Act in 1952. This created a statutory savings safety net for industrial workers, though it relied entirely on manual, physical ledger books stored in regional centers.
- **The Expansion and Fragmentation Phase (1970s–1990s)**
 - As India’s industrial corridors expanded, the administrative network scaled horizontally. Over 120 regional and field offices were established across states to cater to local clusters.
 - However, this expansion inadvertently created strict bureaucratic silos. Each office maintained its own localized paper records and eventually its own standalone computer servers, isolating a worker's financial identity within regional borders.
- **The Portability Paradigm and the Launch of UAN (2014)**
 - The liberalization of the economy led to high labor mobility, exposing a critical flaw: workers changing jobs frequently abandoned or lost track of their older provident fund accounts because transferring them was an administrative nightmare.
 - To remedy this, the Universal Account Number (UAN) was launched in 2014. This gave every employee a portable digital identity. While the frontend became portable, the backend processing still relied on decentralized databases, creating a mismatch between modern user demands and outdated infrastructure.
- **The CITES Era and Absolute Centralisation (2023–2026)**
 - Recognizing that true structural agility requires a unified backend, the implementation of the Centralised IT-Enabled System (CITES) project began in 2023.
 - Milestones like a centralized pension payment system and the complete migration of several lakh crore data records into a single national repository represent the culmination of this evolution. This transition completes the shift from localized paper records to a fully automated, cloud-scale national security network.
- **Way Forward**
- **Expanding Digital Interoperability to the Unorganized Sector**
 - While centralizing formal sector data is a major milestone, true inclusion requires building secure bridges between the centralized system and informal workforce registries like the e-Shram portal. Creating shared pathways could allow gig workers, contract laborers, and construction workers to easily transition into formal retirement savings plans as they move between different types of employment.
- **Strengthening Data Security and Privacy Standards**
 - Consolidating hundreds of regional databases into a single national repository concentrates a vast amount of sensitive personal and financial information. It is essential to implement advanced data security measures, including end-to-end encryption, strict zero-trust access controls, and regular independent security audits, ensuring full compliance with the Digital Personal Data Protection (DPDP) Act.



UPSC CSE CURRENT AFFAIRS: EPFO's MODERNISATION UPGRADE (CITES & MEMBER BENEFITS)

Comprehensive Analysis for IAS/CSE Aspirants

BEFORE: DECENTRALISED REGIONAL SYSTEM (SILOS)



Issues: 120+ Independent Databases, Geographic Dependency, Delays, Employer-Centric

CITES: THE INTEGRATED SOLUTION (ONE NATIONAL DATABASE)

Developing by C-DAC

TRANSITION TO CITES



Implementation Process:

Migration
(June 26 - July 1)

Rule-Based Automated Processing.

AFTER: CENTRALISED SYSTEM & KEY CONCEPTS

KEY CONCEPTS

• UAN (Portable ID)



Universal Account Number
(Single ID, Lifetime Portability)

• KYC (Aadhaar)



Unified Digital Interface,
Fast Verification, Security

• Rule-Based Processing



Rule-Based Processing
Electronic Query Resolution,
Direct Interaction

MEMBER BENEFITS

✓ Anytime PF Access



Apply from **ANY** PF Office
Decoupled from geography

✓ Faster Settlements



Faster transfers, quicker
pensions, lower rejections

✓ Transparency



Real-time
updates,
clear view of
all accounts

✓ Employee Autonomy

Less dependence on
employer approvals

'Killing of Palestinian children part of larger plan for genocide'

Palestinian children as young as 10 are labelled 'terrorists' and shot dead by Israeli security forces, says Chair of independent probe panel, pointing to the death of over 20,000 children since October 2023; he notes that the plan is to ensure the biological and social discontinuity of the Palestinian people by leaving mothers malnourished, depriving newborns of incubators, and destroying schools

INTERVIEW

Justice S. Muralidhar

Krishnadas Rajagopal
NEW DELHI

Justice S. Muralidhar, Chair of the Independent International Commission of Inquiry on the Occupied Palestinian Territory, including East Jerusalem, and Israel, discusses the United Nations panel's report on crimes committed on Palestinian children by the Israeli security forces. The report details the death of at least 20,179 children and injuries to 44,143 children since the October 7, 2023 armed incursions by Hamas.

The former Chief Justice of Orissa High Court and senior advocate in the Supreme Court explains the findings of systematic targeting of the most vulnerable Palestinian populations – women, children, and the elderly. Edited excerpts:

What are the root causes driving this specific targeting of women, children, and the elderly?

The modern conflict traces back to the 1947 UN two-state framework, which Palestinians oppose because they were not consulted. Following historical events like the Nakba and the Yom Kippur war, Israel has continuously expanded its territorial limits. Because Israel's vision contradicts the UN resolution, it operates on the premise that once it occupies these territories, it cannot be asked to leave. The Commission's mandate spans both the Occupied Palestinian Territory and Israel to address these deeply sensitive, underlying root causes. Some of these causes can be traced back to Biblical times.

Has the child ceased to be a protected entity and been reduced to a deliberate weapon of war?

Children as young as 10 are labelled "terrorists". This

strips them of all rights. They are reduced to "free game" or "target practice". Israeli soldiers shoot on sight, justifying their actions by claiming they are shooting a terrorist rather than a child.

At what point does the legal definition shift from crimes against humanity to outright, calculated genocide?

Genocide requires "deliberate intent" to destroy a group. The Commission's September 2025 report described a constant attack intended to deprive Palestinians of land, resources, and cultural roots. Targeting children ensures the biological and social discontinuity of the Palestinian people. This strategy includes targeting pregnant women, leaving mothers malnourished, and depriving newborns of incubators. Combined with the destruction of 97% of schools and specific targeting by quadcopters, snipers, and drones, there are reasonable grounds to believe this targeted killing of children is part of a larger



R.V. MOORTHY

plan for genocide.

In the face of absolute non-cooperation from Israel, what verification standards did the Commission employ to ensure testimonies are legally ironclad?

We only utilise evidence corroborated by independent sources. If a child testifies about what he underwent in an Israeli prison, we look for forensic ways to establish the presence of that child. We secure testimonies from healthcare workers, journalists, and victims. We analyse photographs, medical reports,

and footage that Israeli soldiers upload on social media. Notably, Israel did not dispute any of this evidence in their 18-page rebuttal.

The report explicitly names Israeli military units. Is this the baseline framework for future international war crimes prosecution?

It should be. Accountability mechanisms are rarely properly activated, so we pinpointed specific evidence of responsibility. Thousands of nationals from 16 to 17 countries, in-

cluding the U.S., France, and the U.K., serve in the IDF (Israel Defense Forces). Treaty nations have an obligation to investigate their citizens using "universal jurisdiction" if they are implicated in war crimes, regardless of where the crimes occurred.

How does international law address the psychological decoupling of tech-driven warfare from the reality of slaughter?

International law allows for interpretation. When a soldier notes that a quadcopter "does not hesitate, does not stop and almost never makes mistakes", equating its operation to a video game, they know fully well what the consequences are. The wielding of a weapon to inflict maximum damage is something international law accommodates without needing structural amendments. The core requirement remains demonstrating the extent of the damage and the fact that children are

paying with their lives.

Is this a failure of individual discipline among soldiers, or a top-down doctrine trickling directly from the Knesset?

Two days after October 7, 2023, the Deputy Speaker of the Knesset posted "erase Gaza" on social media. This public stance demonstrates the absolute level of impunity they enjoy. It serves as a testing time for international legal mechanisms.

Has the Israeli judiciary completely compromised its independence to shield the military?

It is unfortunate the Israeli judiciary is unable to see the injustice of the whole thing. *Habeas corpus* is a fundamental remedy for an abducted child. If that is unavailable, we might as well not have a judicial system. This is why we need an efficient, working international legal order. The basis for the International Criminal Court is that a

country is either unwilling or unable to bring people to justice. Here, it is a combination of both.

Israel has dismissed the Commission's findings as institutional bias. What is your response?

Although we would have liked to talk to Israeli soldiers and citizens, Israel does not permit that to happen. We are an investigating body and remain prepared to consider any material Israel may have. We have no other agenda than uncovering the truth.

Realistically, do your recommendations possess actual teeth, or will they simply be ignored by Western member states?

I am hoping they are not ignored. We made presentations of our report before the Security Council, the European Union, individual ambassadors... A report like this helps mobilise a critical mass of public opinion, which ultimately compels governments to change their attitude.

- **Key Terms and Explanations**

- **Genocide (Dolus Specialis):** Under the 1948 Genocide Convention, genocide is defined not merely by the scale of killing, but by the specific, deliberate intent to destroy, in whole or in part, a national, ethnical, racial, or religious group. Unlike war crimes, it requires proving this "special intent." For example, targeting civilian survival systems—such as prenatal care, water infrastructure, and schools—is scrutinized under international law as an attempt to cause the physical or social destruction of a group.
- **Universal Jurisdiction:** This legal doctrine asserts that certain crimes are so heinous that they harm the international order as a whole. Consequently, any sovereign state is permitted—and under specific treaties, obligated—to try the accused, regardless of where the crime occurred or the nationality of the perpetrators or victims. For instance, if dual citizens of European or American nations participate in documented war crimes in a foreign conflict zone, their home countries possess the legal authority to prosecute them under this principle.
- **Biological and Social Discontinuity:** A sociological and legal concept where a military strategy targets the demographic future of a community rather than just its active combatants. By placing conditions that cause chronic malnutrition among pregnant women, destroying neonatal infrastructure like incubators, and dismantling educational systems, an occupying force systematically breaks the generational chain of cultural and physical transmission.
- **Psychological Decoupling in Warfare:** This refers to the cognitive and emotional detachment experienced by military personnel when using advanced, remote technology—such as armed quadcopters, AI-driven targeting software, and unmanned drones. When lethal actions are executed through digital screens, the act of killing risks being reduced to a simulated, video-game-like interface, significantly lowering moral restraint and increasing civilian casualties.
- **The Nakba:** An Arabic term meaning "catastrophe," referring to the foundational 1948 displacement and dispossession of hundreds of thousands of Palestinians during the creation of the State of Israel. It serves as the historical baseline for contemporary territorial displacement and structural statelessness in the region.
- **Habeas Corpus:** A foundational legal remedy across civilized jurisdictions that protects individuals against arbitrary state detention. It requires a detained person to be brought before a judge to examine the legality of their capture. The systemic suspension of this right for an occupied civilian population represents a total breakdown of domestic judicial remedies.

- **Main Arguments and Substantive Parts**

- The core thesis of modern international inquiries into prolonged territorial occupations centers on a profound shift in the nature of conflict: the transition from conventional military engagement to a calculated strategy of structural civilian eradication.

- **The Strategy of Demographic Disruption**

- The primary argument posits that the targeting of the vulnerable—specifically women, newborns, and children—is not accidental collateral damage but a systematic method to ensure long-term societal collapse.

- **Destruction of Social Infrastructure:** The systematic annihilation of up to 97% of educational facilities, alongside regular disruptions to healthcare, is viewed as an intentional strategy to deny a population its future leadership, intellectual identity, and basic social cohesion.

- **Targeting the Pre-natal and Neonatal Cycle:** By restricting access to essential medical supplies, cutting electricity to incubators, and inducing malnutrition in mothers, the conditions of life are altered to naturally suppress the survival rates of the next generation.

- **Top-Down Doctrine Versus Individual Deviance**

- An essential substantive component of contemporary legal assessments is proving that atrocities are directed by state policy rather than being the actions of rogue soldiers.

- **Institutionalized Statements of Intent:** High-ranking political and legislative officials publicizing rhetoric such as commands to completely erase specific densely populated territories provides international tribunals with the necessary evidence of state-sponsored intent.

- **The Culture of Impunity:** When a state's military command systematically overlooks or defends actions where children as young as ten are classified as combatants and targeted, individual actions merge into an official, top-down operational doctrine.

- **The Breakdown of Domestic Judicial Remedies**

- International law dictates that global courts should only step in when domestic judiciaries are "unwilling or unable" to prosecute war crimes. Evidence shows a dual failure in occupied territories.

- **Judicial Shielding:** The domestic legal systems of occupying powers frequently function to protect military forces from external accountability rather than investigating human rights abuses.

- **The Absence of Habeas Corpus:** When the fundamental legal right to challenge arbitrary detentions is completely denied to an occupied population, the local judiciary loses its independence and becomes an instrument of state policy.

NAVIGATING COMPLEX GLOBAL CRISES:

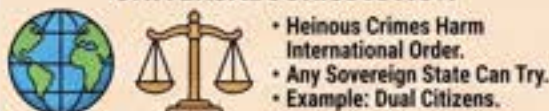
A COMPREHENSIVE ANALYSIS FOR UPSC (GS II, GS IV, ESSAY FOCUS)

KEY NOMENCLATURE & LEGAL CONCEPTS

GENOCIDE (*DOLUS SPECIALIS*)



UNIVERSAL JURISDICTION



BIOLOGICAL & SOCIAL DISCONTINUITY



PSYCHOLOGICAL DECOUPLING



THE NAKBA (ARABIC: 'CATASTROPHE')



HABEAS CORPUS



HISTORICAL EVOLUTION TIMELINE



MAIN ARGUMENTS & STRATEGIC DOCTRINES

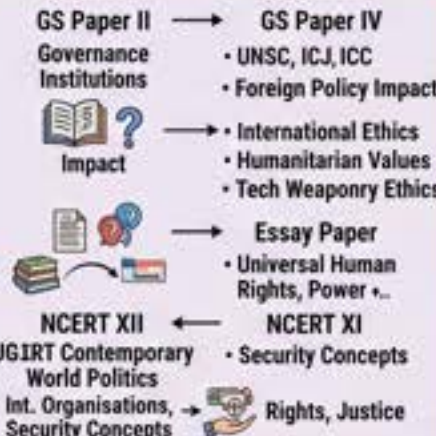
Strategic Demographic Disruption



Top-Down Doctrine (State Policy)



UPSC & NCERT MAPPING



PHILOSOPHICAL & ETHICAL BASE (GS IV)

Collapse of Double Effect



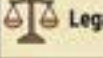
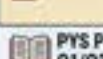
Realism vs. Cosmopolitanism



De-humanization Paradigm



MULTIDIMENSIONAL ANALYSIS TABLE

Dimension	Core Analytical Impact	Key Geopolitical/Humanitarian Consequence
 Social	Generational trauma, institution collapse	Destruction family structure, loss of childhood, erosion cultural identity
 Political	Rise of extremism, impunity	Disenchantment with democracy, extreme state actions
 Legal	Strain on IHL	Conflict sovereignty vs. global courts
 Ethical	Detachment through automated warfare	Moral hazard, reduced life to data points
 International	Geopolitical polarization, paralysis	Exposure double standards, loss trust Global South
 Economic	Complete de-development, dependency	Weaponization necessities, turning to aid dependency

PYS Prelims Q1/Q2/Q3 ☐ Mains Q (2023/2022 Mod) ☐ Mains Q (2023/2022 Mod) ☐

THE WAY FORWARD

- 1. ACTIVATE UNIVERSAL JURISDICTION**
 - Domestic prosecutions
 - Inter-State Cooperation
- 2. OVERCOME UN DEADLOCKS**
 - 'Uniting for Peace' (Res 377A)
 - Independent Humanitarian Corridors
- 3. ETHICAL & LEGAL REGULATION**
 - Ban Autonomous Loitering Munitions
 - Digital Chain of Custody for Evidence
- 4. INTERNATIONALLY GUARANTEED POLITICAL SETTLEMENT**
 - Revitalize Sovereign Two-State Framework (pre-1967 borders)
 - Address historical injustices

Even the 'wicked' have the right to a lawyer, SC had said in a judgment

NEWS ANALYSIS

Krishnadas Rajagopal
NEW DELHI

The Faizabad Bar's resolution to deny legal representation to the accused in the Ram Temple embezzlement case transgresses a Supreme Court judgment that even a "wicked" person has a fundamental right to a competent advocate.

The Supreme Court judgment that clearly enunciates this highest of the traditions of the Bar is based on a case originating in Tamil Nadu regarding a confrontation between a lawyer and local policeman in Coimbatore. The local Bar Association had passed a resolution that no lawyer would represent the accused policemen.

A Division Bench of Justices Markandey Katju and

A 2010 judgment had declared that such resolutions by Bar bodies were 'wholly illegal, against all traditions and professional ethics'

Gyan Sudha Misra (both retired now), in a 2010 judgment in *A.S. Mohammed Rafi versus State of Tamil Nadu*, declared that such resolutions by Bar bodies were "wholly illegal, against all traditions and professional ethics".

'Duty of a lawyer'

"Every person, however wicked, depraved, vile, degenerate, perverted, loathsome, execrable, vicious or repulsive he may be regarded by society has a right to be defended in a court of law, and correspondingly, it is the duty of the lawyer to defend him,"

Justice Katju famously observed in a short judgment.

The judgment referred to Article 22(1) of the Constitution, which mandates that an arrested person should not be "denied the right to consult, and to be defended by, a legal practitioner of his choice".

Again, the 'Standards of Professional Conduct and Etiquette' chapter of the Bar Council of India Rules require that an advocate is bound to accept any brief unless special circumstances justify refusal.

"Professional ethics requires that a lawyer cannot refuse a brief, provided a client is willing to pay his fee, and the lawyer is not otherwise engaged," the court said.

A boycott of an accused, even if he is a suspected terrorist, rapist, or mass murderer, was against all norms of the Constitution.

The judgment is remembered for giving historical examples of lawyers, real and fictional, standing up for professional values.

Reference to Erskine

Justice Katju referred to Thomas Erskine's defence of Thomas Paine, facing treason charges for his pamphlet "The Rights of Man" on the French Revolution, even at the cost of losing his position as the Attorney-General for the Prince of Wales.

The Bench had quoted the "ringing words" of the fictional Atticus Finch in Harper Lee's book *To Kill a Mockingbird* about courage in profession: "Courage is not a man with a gun in his hand. It is knowing you are licked before you begin, but you begin anyway and you see it through no matter what. You rarely win, but sometimes you do."

- **Key Terms and Explanations**

- **Bar Association Resolutions (Collective Boycotts):** These refer to formal declarations passed by localized bodies of advocates collectively agreeing to deny legal services to specific accused individuals. This often happens in response to intense public outrage or emotional proximity to a crime. For instance, if a local bar association passes a resolution declaring that no member will represent an individual accused of a highly publicised financial scam or a localized violent crime, it functions as an institutional boycott.
 - **Article 22(1) of the Indian Constitution:** This is a fundamental right nested within Part III of the Constitution. It explicitly guarantees that no person who is arrested shall be detained in custody without being informed of the grounds for such arrest, nor shall they be denied the right to consult and be defended by a legal practitioner of their choice. It serves as a vital constitutional shield against arbitrary state action.
 - **The 'Cab-Rank' Rule of the Legal Profession:** Derived from English common law, this principle implies that a lawyer is like a taxi driver on a stand—bound to accept any brief that comes to them if they are next in line, provided it is within their field of practice and a fair fee is tendered. This rule ensures that unpopular or despised defendants can still secure legal representation.
 - **Standards of Professional Conduct and Etiquette (Bar Council of India Rules):** Codified under Chapter II of the BCI Rules, these statutory provisions govern an advocate's duty to the court, the client, and the public. The rules explicitly mandate that an advocate is bound to accept any brief in the courts or tribunals in which they propose to practice, unless exceptional or special circumstances justify a refusal.
 - **Adversarial Criminal Justice System:** The legal system prevalent in India where two advocates represent their parties' positions before an impartial judge. In this architecture, truth and justice are designed to emerge from the robust friction of opposing arguments. If one side is denied competent representation, the entire structure collapses, rendering the trial fundamentally unfair.
-

- **Main Arguments and Substantive Parts**

- The core thesis of this legal discourse centers on an absolute, non-negotiable premise: **the right to a competent legal defense is a cornerstone of the rule of law, and any institutional attempt to block this right is inherently illegal, unethical, and unconstitutional.** The legal machinery must remain insulated from societal passions to prevent the rule of law from degenerating into mob rule.

- **The illegality of Institutional Boycotts**

- The definitive judicial standard on this matter stems from the landmark judgment in *A.S. Mohammed Rafi v. State of Tamil Nadu (2010)*. The Supreme Court laid down that resolutions passed by Bar Associations directing lawyers not to represent specific accused individuals are "wholly illegal, against all traditions of the Bar, and professional ethics." The judiciary recognizes that when professional bodies pass such resolutions, they usurp the role of the court by prejudging an individual's guilt.

- **The Professional Imperative: Representation is Not Endorsement**

- A critical substantive argument is the clear line drawn between a lawyer's professional duty and their personal moral approval.

- **The Universal Right to Counsel:** The law insists that every person—no matter how "wicked, depraved, vile, or degenerate" they are perceived to be by society—retains the right to stand before a court with a competent advocate by their side.

- **The Constitutional Mandate:** Refusing a brief based on public pressure or the heinous nature of the crime directly violates Article 22(1).

- **The Professional Obligation:** A lawyer's duty is to ensure that the state meets its high burden of proof and that the accused receives a trial compliant with due process. Defending a suspect is an act of upholding the Constitution, not an endorsement of the alleged crime.

- **Historical and Fictional Archetypes of Professional Courage**

- The legal tradition relies heavily on historical and literary touchstones to reinforce this duty. Justice Markandey Katju famously invoked the historic 1792 trial where Thomas Erskine defended Thomas Paine against treason charges for writing *The Rights of Man*. Despite knowing he would lose his prestigious office as Attorney-General to the Prince of Wales, Erskine took the brief, asserting that the moment an advocate decides that a citizen shall not be defended, they assume the character of a judge.

- Similarly, the fictional archetype of Atticus Finch in *To Kill a Mockingbird* highlights that true professional courage involves seeing a case through against overwhelming majoritarian prejudice, embodying the belief that the integrity of the judicial process outlives transient societal anger.

COMPREHENSIVE ANALYSIS: THE RIGHT TO LEGAL COUNSEL & PROFESSIONAL ETHICS

THE CORE PRINCIPLE: CONSTITUTIONAL & ETHICAL FOUNDATIONS



Supreme Court Judgment
(A.S. Mohammed Rafi, 2010):
Local Bar boycotts are wholly
illegal, against all traditions &
professional ethics.



Article 22(1) of Indian Constitution:
Fundamental right to be defended
by a legal practitioner of choice.

MULTIDIMENSIONAL ANALYSIS OF LEGAL DEFENSE

SOCIAL
prevents mob rule



POLITICAL



insultates justice
from state pressure

LEGAL



upholds rule of law
over extra-legal actions

ETHICAL
officer of the court vs



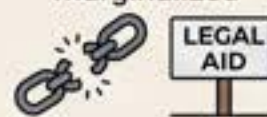
INTERNATIONAL



UDHR Art 11 &
ICCPR Art 14

ECONOMIC

equal access for
marginalized



HISTORICAL EVOLUTION & PHILOSOPHICAL BASE



PHILOSOPHICAL FOUNDATIONS

Presumption
of Innocence



Innocent

Adversarial
Dialectic Model

Thesis-
Prosecution-Defense

Synthesis → Judicial
Verdict

WAY FORWARD: KEY REFORMS FOR JUSTICE



1. Strict
Disciplinary
Measures



2. NALSA
Legal Aid



3. Judicial
Grievance
Mechanism
(fast-track)

4. Mandatory CLE



India seeks clarity as 'tipping points' rock Bonn climate talks

At the Bonn climate talks, when India urged caution on how the term 'tipping point' is defined and used, the European Union said that amounted to 'misinformation'

Shobha Fazlilar

At the Bonn climate talks in Germany on June 6-10, alongside the usual laundry list of contentious themes such as climate finance, tipping points became an unexpected source of debate and controversy.

According to the Earth Negotiations Initiative, India urged care and clarity in using terms like "tipping points", which it said would present challenges around defining the idea and cautioned against miscommunicating or oversimplifying the science.

However, the European Union scoffed the waters by raising concerns about "exaggerated misinformation" and "obstruction".

Complexities, uncertainties

A climate tipping point is a threshold in the earth's climate system beyond which a part of it jumps into a new state.

Once such a tipping point has been crossed, changes can happen faster or harder to reverse on human timescales, even if the original cause of the change is removed.

For example, say warming in the Arctic melts enough sea ice to expose large areas of dark ocean. These waters could absorb more heat, causing more warming and even more melting. With enough heat, this cycle may be able to continue on its own, rendering recovery very difficult.

However, it is difficult to project tipping points in the climate because of complexities in the climate system and uncertainties in the input data.

Climate communicators also struggle with this concept: some see it as a catalyst for urgent action while others have argued that its inherent uncertainties undermine its value for policymaking.

In fact, climate-related drivers of directly experienced disasters, such as extreme rainfall or heat waves, are sometimes seen as more effective for raising public awareness of climate change and the need for climate action than the relatively abstract concept of climate tipping points.

However, the risks that tipping points carry are significantly larger than routine climate-induced disasters, and thus raise larger questions about how people can adapt to the effects of a breached tipping point.

Multiple thresholds

Tipping points have non-linear behaviour. This means they don't increase at the same pace or intensity at which greenhouse gases accumulate in the environment. Instead, even small increases in temperature can trigger large, self-amplifying feedback loops.

Aside from warming in Arctic, potential climate tipping points include a dieback of the Amazon rainforest (a risk the risk of the forest reverting to being a savannah), the collapse of an ocean current called the Atlantic meridional overturning circulation (AMOC), the mass bleaching of coral reefs, changes in the ice-covered sea ices and West Antarctic, and the disintegration of the Greenland ice sheet.



Scientists study the Atlantic meridional overturning circulation, a movement of warm and cold waters that drives key heat around the planet to regulate the climate and also the ocean's climate. The risks that tipping points carry are significantly larger than routine climate-induced disasters. AP

While human societies will be better off not threatening any of the climate tipping points, there are also positive social tipping points in the climate space – such as the adoption of renewable energy. Once these technologies win a critical adoption level, some experts have argued, they will be intractable large-scale adoption.

Contesting tipping points

That said, many experts have also said tipping points raise more questions than provide answers.

Scientists also still struggle to project when the AMOC will collapse or when the Amazon rainforest will transition into a savannah ecosystem.

One reason is that scientists have to work with projected emissions and temperature ranges in future and, based on that, they have associated with indications that certain climate systems will change slowly rather than suddenly to new states.

For example, one *Science Advances* paper in April noted that AMOC could slow down by 10% rather than altogether collapse, by 2050 in a medium-emissions scenario.

This conclusion also depends on the model content because it is not a direct forecast the paper only aimed to identify which model projections were more credible than others. In other words, uncertainties are implicit in the data and cannot be removed using more data alone.

In fact, research suggests that scientists may be able to identify true tipping points clearly only in post facto analysis from a historical lens. Missing, in hindsight.

And in the case of complex ecosystems like the Amazon rainforest, whose fate is already tied to millions of tribal and urban community members and numerous critical enterprises, a projection of

Many scientists and science communicators agree that clearly communicating scientific uncertainty is a good thing because it builds trust

tipping points based only on changes in the climate would miss influences due to, say, cattle ranching and human deforestation – and underestimate the implications of a change to a savannah.

That said, some scientists have also questioned whether tipping points will be abrupt. For example, by 2050, despite over thousands of years – which is far from abrupt for human observers.

A false threshold

There is a popular notion that the earth's surface warming beyond 1.5 degrees Celsius is a tipping point. The confusion points even among participants in climate negotiations, research published in 2019 found.

However, negotiators adopted this number as well as 2 degrees Celsius at the COP26 climate talks in 2021 as a policy target based on scientific evidence that warming beyond 1 degree Celsius, 1.5 degrees Celsius or 2 degrees Celsius will increasingly disrupt the climate. The temperature goals are not tipping points in and of themselves.

At the Bonn climate talks, when India urged caution on how the term 'tipping point' is defined and used, the European Union said that amounted to "misinformation".

Specifically, India argued that the term 'tipping point' entails "definitional challenges". This much has been acknowledged in independent scientific research and in state-led efforts. For instance, the U.S. National Oceanic and Atmospheric Administration is working on a project titled 'An IPCC-IPCC-IPCC: Building

consensus on terminology for high impact climate events and tipping point risk'.

According to a project document, "Unclear and inconsistent terminology for high impact climate phenomena, including concepts such as tipping points, irreversibility, collapse and shutdown, presents a substantial barrier to clear understanding of Earth system risks."

Ways from here
Many scientists and science communicators agree that clearly communicating scientific uncertainty is a good thing because it builds trust.

Both false alarms and a false sense of hope can affect credibility when, say, a prediction on a forecast doesn't come to pass. The risk – rather than the certainty – implicit in tipping points is also significant enough to warrant climate action.

In one 2020 article in *Nature Climate Change*, researchers from Canada, Switzerland, the U.K., and the U.S. outlined the "tipping point" framework for "streamlining the diverse dynamics of complex natural and human systems and for conveying urgency without lowering a meaningful basis for climate action."

They also called for more clarity, especially on the degree of abruptness, the reversibility of changes, and feedback-driven self-amplification.

"Climate change is already causing detectable and obvious harm around the world," the researchers wrote. In tipping point discourse, on the other hand, "there is no specific increment of temperature increase that science can identify as the boundary between our current, already-dangerous climate and a future catastrophic climate, and so justification for doomism and paralysis while the world continues to warm."

Shobha Fazlilar is a freelance journalist. shobha.fazlilar@gmail.com

THE GIST

At the Bonn climate talks in Germany on June 6-10, tipping points became an unexpected source of debate and controversy.

India urged care and clarity in using terms like "tipping points", which it said would present challenges around defining the idea and cautioned against miscommunicating or oversimplifying the science.

However, the European Union scoffed the waters by raising concerns about "exaggerated misinformation" and "obstruction".

- **Key Terms and Explanations**

- **Climate Tipping Point:** This refers to a critical threshold in the Earth's climate system beyond which a relatively small additional increment of warming or disruption pushes a component of the system into a completely new, often irreversible state. For instance, as Arctic warming melts white sea ice, it exposes dark ocean waters. These darker waters absorb more solar radiation instead of reflecting it, creating a self-amplifying feedback loop that accelerates further melting.
- **Atlantic Meridional Overturning Circulation (AMOC):** A vast, interconnected system of ocean currents that acts as a global conveyor belt. It circulates warm, salty surface water from the tropics northward to the North Atlantic, where it cools, sinks, and flows back southwards in the deep ocean. A disruption or collapse of this system would radically alter global weather patterns, cooling Europe and shifting tropical rainfall belts.
- **Amazon Rainforest Dieback:** The potential structural shift where the world's largest tropical rainforest transitions into a dry, savannah-like ecosystem. This threshold is driven by the combined stresses of rising global temperatures, changing regional rainfall patterns, and direct human activities like cattle ranching and deforestation.
- **Non-linear Behavior:** A characteristic of a system where the output or response is not directly proportional to the input. In climate science, this means that environmental degradation does not always happen gradually; instead, small, incremental temperature increases can trigger sudden, massive, and disproportionate ecological transformations.
- **Post Facto Analysis:** An evaluation or determination carried out after an event has already occurred. In complex natural systems, scientists often argue that certain fixed tipping thresholds can only be identified with absolute certainty in hindsight, rather than being predicted as exact, real-time deadlines.

- **Main Arguments and Substantive Parts**

- The intersection of climate science and global policy creates a complex arena where interpretation, communication, and strategic interests clash. The debate revolves around several core arguments:

- **The Core Thesis**

- The conceptual framework of "tipping points" introduces highly non-linear, volatile dynamics into climate projections. While intended to underscore the urgency of global action, the lack of precise definitions and the presence of inherent scientific uncertainties have turned these concepts into a diplomatic battleground between developing and developed nations.

- **The Diplomatic Confrontation**

- During international climate deliberations, such as the Bonn climate talks, a sharp divide emerged regarding narrative control. Developing nations like India advocate for extreme caution and absolute clarity when utilizing high-impact terms like "tipping points," warning that ambiguous definitions risk oversimplifying complex science and miscommunicating risks to policymakers. Conversely, developed blocs like the European Union often interpret these calls for definitional precision as a form of coordinated misinformation or strategic obstruction designed to slow down aggressive climate commitments.

- **Scientific Complexities and Counter-Evidence**

- Projecting the exact moment a climate system will collapse remains remarkably difficult due to data limitations and structural variations. For instance, recent scientific modeling published in *Science Advances* suggests that under medium-emission scenarios, the AMOC might experience a 51% slowdown by the year 2100 rather than a sudden, catastrophic collapse. Furthermore, many high-impact transformations—such as the disintegration of the Greenland ice sheet—are projected to unfold over millennia rather than human-scale timelines, challenging the popular narrative of immediate, abrupt shocks.

- **The Communication Paradox**

- Climate communicators are deeply divided over the utility of threshold-based narratives. Some see them as vital tools to catalyze immediate political will and public awareness. Others argue that utilizing unverified, catastrophic forecasts damages scientific credibility when those specific predictions fail to materialize. This can inadvertently foster a sense of "doomism" and policy paralysis, overshadowing the tangible, immediately observable impacts of climate change, such as extreme localized rainfall and heatwaves.

- **Historical Evolution of the Issue**

- **Pre-1990s (The Linear Paradigm):** Early climate modeling and international frameworks, such as the initial assessments of the Intergovernmental Panel on Climate Change (IPCC), viewed the Earth's response to greenhouse gas emissions as largely linear and gradual. Policy discussions focused primarily on predictable, incremental temperature increases.

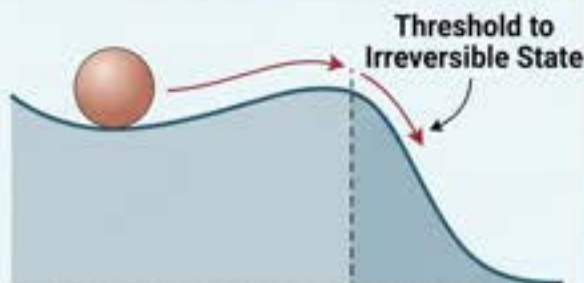
- **Early 2000s (Identification of Tipping Elements):** Pioneering Earth system research formally introduced the concept of "tipping elements." Scientists identified specific geographical features—such as the West Antarctic ice sheet, the Amazon, and the monsoon systems—that possessed vulnerabilities to abrupt, systemic shifts, altering the scientific discourse from gradual change to potential crisis points.

- **2015 (The Creation of Political Thresholds):** The adoption of the Paris Agreement established clear political boundaries, aiming to limit warming to well below 2°C, and ideally 1.5°C. Over time, popular discourse and media narratives began to conflate these negotiated political targets with hard, scientifically proven physical tipping points, treating them as definitive edges of a climate cliff.

- **Present Day (Geopolitical Fragmentation at Bonn):** The discourse has shifted from scientific journals into active diplomatic friction. Developing countries demand rigorous, evidence-based criteria to safeguard their economic planning, while developed nations push for generalized, high-urgency frameworks, leading to sharp disagreements over narrative legitimacy.

UPSC CSE COMPREHENSIVE ANALYSIS - CLIMATE TIPPING POINTS & DIPLOMACY

CORE CONCEPTS & DEFINITIONS



AMOC



→ Warm → Cold

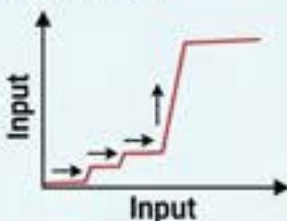
Amazon Rainforest Dieback



Forest (Current) Savannah (Potential)

Non-linear Behavior

Small increments sea of input



THE BONN DIPLOMATIC CLEAVAGE



Developing Nations
(e.g., India)



Developed Nations
(e.g., EU)



Request

Request:
Caution,
scientific precision,
clear definitions.

Validating metrics
vs. development
space.



DIPLOMATIC
CONFLICT



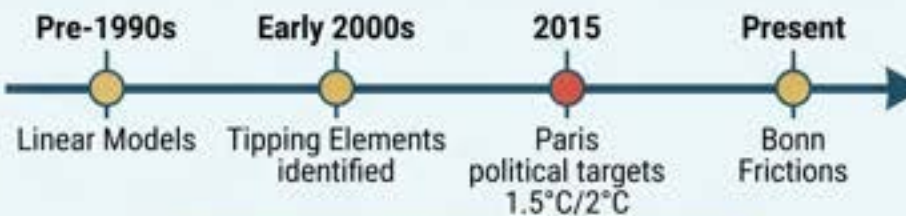
Demand

Demand:
Aggressive uniform
commitments,
high-alarm
narratives.

Dismissal of
precision calls as
misinformation.

The Communication Paradox:
Alarm vs. Trust

HISTORICAL EVOLUTION & PHILOSOPHICAL BASE



Philosophical tensions, e.g.
Precautionary Principle vs. Scientific Rigor

MULTIDIMENSIONAL ANALYSIS (6 DIMENSIONS)



Social
Inequality,
food security



Political
North-South
divide



Legal
Liability,
Loss & Damage



Ethical
Climate Justice,
Doomism



International
Narrative Control,
Soft Power



Economic
Market Panic,
Risk
Underpricing

WAY FORWARD (POLICY & REFORMS)

1. **Harmonize Lexicon**
Standardize terms

2. **Risk-based Communication**
Probabilistic models

3. **Integrated Socio-Ecological Models**

4. **Prioritize Adaptation**
Resilience, immediate
impacts

UPSC & APSC SYLLABUS LINKAGES

GS Paper 1

Geography:
Geophysical
phenomena

GS Paper 2

IR: Multilateral
agreements

GS Paper 3

Environment:
Poll., Degr., DM

GS Paper 4

Ethics:
Responsibility

Essay

**Relevant PYQs
for CSE/APSC**

The fiscal tightrope for State govts.

Most state government expenditure is on social sectors, such as health and education, and economic sectors, such as agriculture and irrigation. In Kerala, such spending has driven social progress since the 1980s. The gap between expenditure and receipts is usually financed through market borrowings.

ECONOMIC NEWS

James Lee Thomas

Kerala and Tamil Nadu are among the most socially and economically advanced states in India. Yet, the finances of both governments, like those of most other states, are under strain. The White Papers recently released by the two governments described their outstanding debt as alarming. State government debt is often cited as the result of fiscal mismanagement. But it may, in fact, reflect a mismatch between development aspirations and the limited fiscal capacity of state governments.

The fiscal dilemma often build up over the years with deficits, which arise when the government's expenditure exceeds its tax and other receipts. In India, while the power to raise taxes rests largely with the Union government, a larger share of social government spending is borne by the state governments. A majority of the state government expenditure is on social sectors, such as health and education, and economic sectors, such as agriculture and irrigation, all of which have a direct impact on people's lives and livelihoods in Kerala, the high levels of state government spending on social services since the 1980s have been a central component of the public action driving social progress. Compared with the corresponding average for all Indian states, per capita state government social expenditure was higher in Kerala and Tamil Nadu by 30% and 30%, respectively. In contrast, it was markedly lower in Bihar and Uttar Pradesh by 10% and 40% over the period 2000-25, according to an analysis based on State Thomas, A Study of Budgets, Income Tax of India.

States cover their expenditures partly through their own revenues – which mainly include state goods and services tax (GST) and sales tax – and through fiscal transfers, grants, and loans from the Union government. Kerala has a sufficiently good record of mobilising own-tax revenues, which, as a per capita basis, are 1.5 times the average for all Indian states and twice Tennessee. However, in spite of the Union government's tax devolution to states was 1.0%, lower than the 1.0% share of India's population in 2022-23.

The source of expenditure surpluses has been not through market borrowings by the states, in which the Union pays interest @ 8.5% and 9%.

Of the limited financial resources at its disposal, Kerala has been able to divert only 10% towards capital expenditure to enhance future productive capabilities. The rest was spent on current, or day-to-day expenditure. Approximately a fifth of the state's budget expenditure was on the salaries of government employees, mainly teachers, nurses, doctors, and police personnel. Pensioners accounted for 10.7%, while interest on market borrowings accounted for 10.7% of the total budget expenditure @ 8.5%.

The investment challenge faced by Kerala

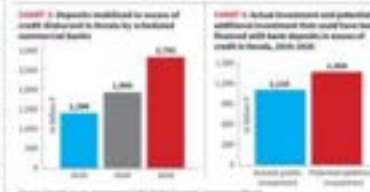
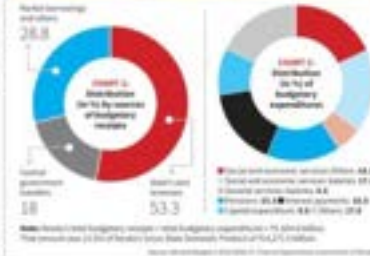
Kerala is thus caught in a fiscal dilemma. It is hard to create more fiscal space by reducing revenue expenditures – cutting pensions, prioritising employees – it risks eroding its strengths as the social sector. At the same time, Kerala urgently requires large-scale, state-directed investments in infrastructure, higher education and research, and public transport. If it is to continue its potential to modern, knowledge-intensive economic sectors, educated young people are leaving Kerala in large numbers because the state is unable to create educational and employment opportunities that meet their aspirations.

In Kerala, the government's weak fiscal capacity contrasts with considerable signs of private affluence: facilities built houses, expensive cars, and a high density of gold shops, despite existing in stark urban inequalities.

The ratio of credit to deposits of scheduled commercial banks in Kerala is only around 90%, compared with the national average of 70% and ratios exceeding 100% in Maharashtra and Tamil Nadu (100%). The ratio of credit to deposits over bank credit is one indicator of the volume of unutilised savings in Kerala. Between 2016 and 2020, the state government's capital expenditure could have been at least doubled if Kerala had been able to channel at least part of its surplus savings into investment @ 8.5% and 9%.

The borrowing opportunity for China's local governments

In China, the bigger chunk of the massive investments that have boosted economic growth has been undertaken by provincial and lower-level local governments. Local governments have been keen to finance these investments, drawing on the large pool of domestic savings held by Chinese banks. While their efforts are coordinated through central government planning, China's local governments raise resources through the sale of local government bonds (LGBs), land sales, and off-budget



borrowing via local government financing vehicles (LGFVs), supplementing fiscal resources by the central government. In India, not only have these been loans on borrowing by state governments, but the cost of their debt has also been remarkably high. State governments pay interest of 8.5% to 10% on the securities they issue. Interest on State Development Loans (SDLs), for instance, has been 10.5% to 11.5% on 0.75 percentage points higher than the rate at which the Union government borrows, and significantly more expensive than the cost of borrowing by Chinese local governments from their banking systems around 2%.

The high interest burden further tightens the debt noose around state governments. The state and Union government bonds issued in India are largely purchased by domestic financial institutions, including commercial banks

and insurance companies, which deploy the savings they mobilise from the public to support government financing. In effect, the debt the government owes is a debt to its own people. A government that borrows to fund projects that expand welfare and opportunities is serving a far greater cause than a right-fisted government.

A family would prefer that its savings, rather than being seized not to send their child to study in a distant land, be used to establish a public university in their district.

We need fiscal structures that enable state governments to access domestic savings more easily and at a lower cost to fund individually planned development projects.

James Lee Thomas is a Professor of Economics at the Indian Institute of Technology-Delhi and a visiting researcher at the South Asia Institute of the Heidelberg University.

THE GIST

State governments still build up over the years when expenditure exceeds tax and other receipts. While the Union government raises most taxes, states bear a large share of public spending.

States cover their expenditures partly through their own revenues, including state goods and services tax (GST) and sales tax, and through fiscal transfers, grants, and loans from the Union government.

The source of expenditure surpluses has been not through market borrowings by the states, in which the Union pays interest.





- **Main Arguments and Substantive Parts**

- The structural challenges of sub-national public finance center on a profound dilemma: the tension between progressive social spending and rigid fiscal discipline.

- **The Core Thesis**

- The rising debt profiles of economically advanced and socially progressive states should not be viewed simply as signs of fiscal mismanagement. Instead, they reflect a deep structural mismatch between ambitious sub-national developmental goals and the restricted revenue-raising capacities granted under the current federal framework.

- **The Expenditure-Revenue Mismatch**

- State governments bear the primary responsibility for the human development index (HDI), bearing the brunt of public expenditures in vital social sectors (healthcare, education) and primary economic sectors (agriculture, irrigation). However, states find themselves on a fiscal tightrope. While their developmental aspirations demand consistent capital injection, their independent revenue sources are constrained, leaving them heavily reliant on central fiscal transfers and market borrowings.

- **The Capital Expenditure Squeeze**

- A substantial portion of sub-national budgetary receipts is locked into non-discretionary revenue expenditures. Fixed commitments—such as government salaries, pensions, and debt servicing (interest payments)—consume a massive share of total budgetary allocations. This structural reality leaves a meager fraction (often less than 10%) for direct capital expenditure, thereby choking long-term asset creation and infrastructure modernization.

- **The Paradox of Unutilized Savings**

- An intriguing financial anomaly occurs in high-income, high-saving states. While citizens accumulate massive bank deposits, the local credit-to-deposit ratios remain far below national averages. This indicates a failure to channel regional private savings into regional public investments. If institutional mechanisms allowed state governments to tap into these local surplus savings directly, their capacity for public capital investments could potentially double, reducing their dependence on high-cost market avenues.

COMPREHENSIVE ANALYSIS: THE FISCAL TIGHTROPE FOR STATE GOVERNMENTS

BALANCING HUMAN DEVELOPMENT & FISCAL STABILITY

THE DILEMMA: HIGH WELFARE SPENDING vs. LIMITED REVENUE



EXPENDITURE DRIVERS & SOCIAL PROGRESS

BUDGETARY EXPENDITURE DISTRIBUTION

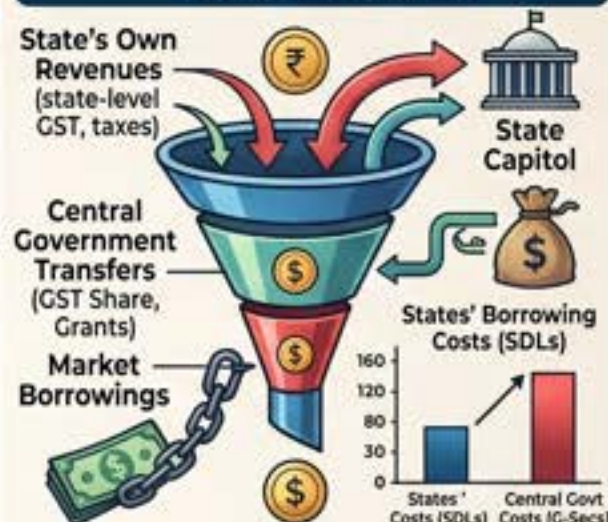


State Social Spending vs. HDI Trend (e.g., High Spending leading to High HDI)



High fixed commitments (Pensions, Salaries) leave limited fiscal space for future-enhancing Capital Expenditure.

REVENUE RIGIDITY & DEPENDENCE



States have limited independent revenue-raising powers; heavy reliance on central transfers and higher-cost market loans.

KEY DYNAMICS & WAY FORWARD

- A DEBT ACCUMULATION:** Excess of expenditure over receipts, financed via higher-cost market borrowings.
- B ECONOMIC PARADOX:** High household savings but low local Credit-to-Deposit ratio (e.g., Brain Drain and talent outflow due to lack of local opportunities).
- C CHINA EXAMPLE (Concept):** Using LGFVs & Local Bonds to tap domestic savings directly (visual of abstract bonds and investment vehicles).

THE PATH TO FISCAL PRUDENCE





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