



7 PM COMPILATION

1st and 2nd week November, 2025

Features of 7 PM compilation

- ❖ Comprehensive coverage of a given current topic
- ❖ Provide you all the information you need to frame a good answer
- ❖ Critical analysis, comparative analysis, legal/constitutional provisions, current issues and challenges and best practices around the world
- ❖ Written in lucid language and point format
- ❖ Wide use of charts, diagrams and info graphics
- ❖ Best-in class coverage, critically acclaimed by aspirants
- ❖ Out of the box thinking for value edition
- ❖ Best cost-benefit ratio according to successful aspirants

INDEX

UN Reforms – Need & Challenges – Explained Pointwise.....	2
Stampede Disaster Management in India – Explained Pointwise	5
Cloud Seeding & Its Effectiveness – Explained Pointwise.....	13
Trump's 20-Point Framework to End Israel-Hamas Conflict – Explained pointwise	16
UPSC@100 – Functions & Challenges – Explained Pointwise	19
Cyber Frauds and Safeguarding India's Digital Economy – Explained Pointwise.....	23
Alternative Dispute Resolution in India – Significance and Challenges – Explained Pointwise	26
Soil Nutrition Management – Need & Challenges – Explained Pointwise.....	30
India-Bhutan Relationship – Significance & Challenges – Explained Pointwise	35
Tribunals in India- Explained Pointwise.....	39
Cooperative and Competitive Federalism – Explained Pointwise.....	44
Air Pollution In Delhi- Reasons and Solutions- Explained Pointwise	48
Digital Personal Data Protection Rules 2025- Explained Pointwise	54

UN Reforms – Need & Challenges – Explained Pointwise

The United Nations celebrated its 80th anniversary this week. Reforming the United Nations (UN) is one of the most critical and complex challenges in global governance today. While the UN remains indispensable, its structure, particularly its most powerful bodies, often fails to reflect the realities of the 21st century.



Introduction:

- UN reforms refer to proposed and ongoing changes meant to make the United Nations more effective, representative, transparent, and responsive to current global realities.
- The calls for reform span core UN organs, especially the Security Council, as well as the organization's operational and financial structures.

Key Issues Driving the Need for UN Reforms:

1. Outdated Power Structure: The UN Security Council (UNSC) is dominated by five permanent members (P5: US, UK, France, Russia, China) with veto powers—a structure set in 1945 that now fails to reflect shifts in global power, the rise of developing nations, and the interests of the Global South.
2. Veto Deadlock: The ability of one P5 member to block action causes paralysis in response to major conflicts (Syria, Ukraine), humanitarian crises, and genocide, undermining the Council's credibility and effectiveness.
3. Under-representation: Countries like India, Brazil, Germany, and Japan, and regions such as Africa and Latin America, have long called for permanent representation to reflect modern realities and give a greater voice to developing nations.
4. Bureaucratic Inefficiency: The sprawling UN bureaucracy often slows emergency response and suffers from corruption, misuse of funds, or poor accountability.
5. Financial Dependence: Reliance on a few donors, especially the US, leads to budgetary crises, delays in humanitarian aid, and concerns about undue influence in UN affairs.

6. Erosion of Legitimacy and Emergence of Competitors: Failures to act on major crises push member states toward regional or ad hoc coalitions (G20, BRICS, African Union), bypassing the UN and weakening its global leadership.
7. Defining the Role in Emerging Challenges: The UN needs a clearer mandate and framework to govern 21st-century threats like climate change & global warming, global health security, artificial intelligence etc.

Major Reform Proposals & Ongoing Initiatives:

1. UNSC Expansion and Veto Reform:
 - New Permanent Members (P6-P11): The current permanent five (P5: China, France, Russia, UK, US) do not include major modern economic, demographic, or political powers. Leading candidates for new permanent seats include:
 - India: The world's most populous country and a major global economy.
 - Brazil: The leading voice in Latin America.
 - Germany and Japan: Major financial contributors to the UN and global powers.
 - An African Seat: A consensus candidate or rotation among key African nations (e.g., Nigeria, South Africa) to represent the entire continent.
 - Limit or Reform Veto: Restrict veto use (especially in cases of genocide, war crimes, crimes against humanity) with proposals for supermajority or General Assembly referral for overrides.
 - Increase Non-Permanent Seats: More seats for underrepresented regions to distribute influence and reflect global demographics.
2. Streamlining Bureaucracy & Decision Making:
 - Cut Costs and Jobs: Secretary-General's UN80 initiative includes a 15% budget cut for 2026, reducing staff by over 2,600 posts and streamlining mandates, meetings, and reporting requirements.
 - Increase Transparency and Accountability: Stricter auditing, performance reviews, and publication of program assessments; better mechanisms to address fraud, misconduct, and resource misuse.
3. Financial Reform:
 - Equitable Assessment & Burden Sharing: Update member contribution formulas based on GDP, population, and development indicators; build in accountability for arrears and fiscal discipline.
 - Link Membership to Contributions: Greater privileges or representation for consistent contributors to peacekeeping, aid, or development.
4. Inclusive Voice and Representation:
 - Institutionalize Global South Forums: Permanent coalitions (e.g., G4, African Union blocks) within UN organs to negotiate as regional blocs and ensure developing country priorities are addressed.
 - Text-Based Negotiations: Adopt clear deadlines and rounds for reform discussions, preventing procedural delays.
5. Periodic Review Mechanisms: Institutionalize a process for periodic assessment and adjustment of governance structures and policies (such as a standing UN Reform Commission).

Challenges to UN Reforms:

1. Veto Power and Security Council Dynamics: The UN Security Council's five permanent members (P5) hold veto power, which allows any one of them to block substantive reforms, including changes to the Council itself—even reforms that enjoy broad international support.

2. Geopolitical Rivalries and National Interests: Competing national interests and regional rivalries between major powers and emerging economies complicate negotiations on reforms. Countries like India, Brazil, Germany, Japan, and African nations demand permanent Security Council seats, but this is contested by others with divergent interests.
3. Constitutional and Legal Barriers: UN Charter amendments require approval by two-thirds of the General Assembly members and all P5 countries. This high threshold makes reform legally and procedurally difficult. Existing procedures are cumbersome, and there is no standing mechanism to expedite or enforce reforms.
4. Institutional Inertia and Bureaucratic Resistance: UN's bureaucratic structure is large and complex, with entrenched interests and resistance to change. Budgetary, administrative, and mandate reforms are often resisted by internal UN agencies and member states benefitting from the status quo.
5. Fragmentation and Lack of Political Will: Divisions among member states, shifting alliances, and the rise of alternative multilateral platforms (G20, BRICS, regional organizations) lead to fragmented global governance, diverting momentum away from comprehensive UN reform. The absence of unified leadership and hesitation from powerful states creates a political vacuum, limiting sustained reform efforts.
6. Funding and Financial Dependence: UN's operational effectiveness depends on contributions from a few major donors, primarily Western countries like the U.S. Member states reluctant to increase funding or subject their contributions to reform conditions create financial constraints that undermine reform implementation.
7. Representation and Inclusivity Conflicts: Diverse views on how to democratize or broaden representation create further disagreements, especially between developed and developing countries. Differing visions on representation of the Global South, small states, and non-state actors complicate the design of an inclusive governance model.

Conclusion: UN reform faces formidable roadblocks from entrenched power structures, competing national interests, high legal thresholds, organizational inertia, and lack of unified political will. Overcoming these challenges requires sustained global diplomacy, balancing realism and idealism to adapt the UN for contemporary global governance.

UPSC GS-2: International relations

Read More: [The Indian Express](https://www.theindianexpress.com/article/international/un-reform-what-is-at-stake-and-how-can-it-be-achieved-600000/)

Stampede Disaster Management in India – Explained Pointwise

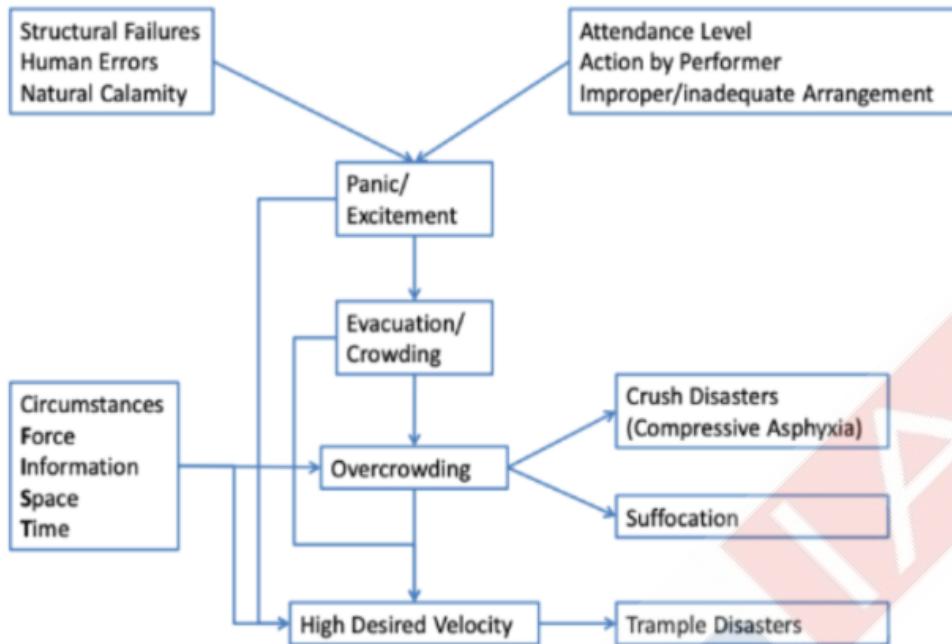


Stampede Disaster Management in India

Recently, a stampede occurred on November 1, 2025, at the privately managed Sri Venkateswara Swamy Temple in Kasibugga, Srikakulam district, Andhra Pradesh. The tragic incident claimed at least nine lives, mostly women and left more than 25 people injured—some critically. According to the NCRB's report titled 'Accidental Deaths and Suicides in India', between 2001 and 2022, a total of 3,074 lives have been lost due to stampedes in India. Of these, 2,169 (70%) were men and 900 (30%) were women.

What is a Stampede?

- As per NDMA's "Managing Crowd at Events and Venues of Mass Gathering" Stampede is a sudden, uncontrolled rush or surge of a crowd, often leading to crushing, suffocation, or trampling, resulting in injuries or fatalities.
- Stampedes are characterized by high crowd density or accelerated movements triggered by panic or excitement. They are man-made disasters typically occurring at places of mass gathering, such as religious sites, railway stations, or events, due to inadequate crowd management.
- Process of a Stampede:



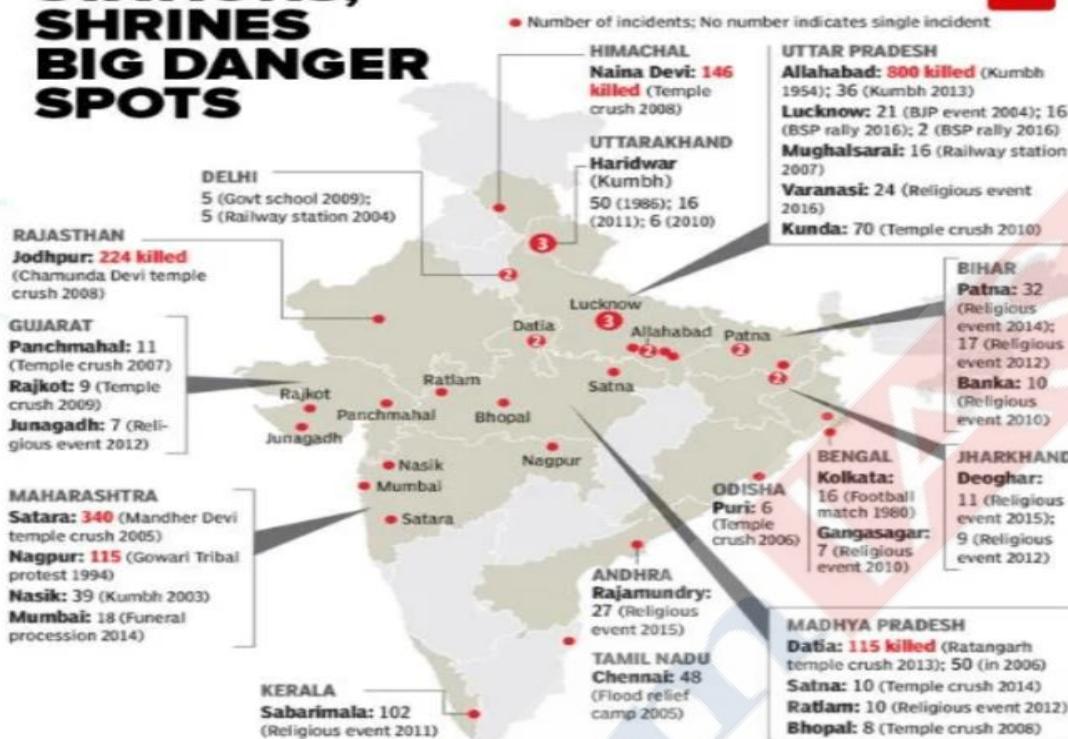
Source- NDMA Disaster Guidelines

What are Some Notable Deadly Stampede Disasters in India?

Allahabad Railway Stampede (2013)	Last-minute change in the platform for the pilgrims who had gathered for the Khumbh Mela, created panic and resulted in a stampede. It led to the loss of around 36 lives.
Mumbai pedestrian bridge Stampede (2017)	The stampede at the crowded Pedestrian Bridge connecting the two Mumbai railway stations resulted in the death of 22 people and injured 32.
Mata Vaishnav Devi shrine (2022)	The Stampede at the Mata Vaishno Devi Shrine resulted in the death of 22 people and injured 32.
Hathras Stampede (2024)	During a religious gathering in Uttar Pradesh's Hathras district on July 2, 2024, at least 121 people (almost all women) lost their lives.

STATIONS, SHRINES BIG DANGER SPOTS

TOI



What are the major causes of Stampedes in India?

1. Human Factors: These are behavioral and psychological triggers that contribute to crowd mismanagement and chaos:

Cause	Explanation
Panic or Fear	Sudden fear (e.g., of fire, explosion, or perceived threat) causes uncontrollable crowd movement. Example, Dabwali Fire Tragedy (1995).
Excitement or Euphoria	Intense enthusiasm (as during concerts, sports wins) may lead to irrational rushing. Example, Bengaluru RCB Parade (2025).
Impatience or Aggression	Frustration due to delays or lack of access leads to pushing and violence. Example, Sabarimala Stampede (1999).
Wild Rush Behavior	Inward/outward crowd clashes, often to grab freebies or exit quickly. Example, Elphinstone Footbridge Stampede (2017).
Panic from Rumors	Rumors like fire, earthquake, or landslide induce fear and uncontrolled stampedes. Example, Kumbh Mela Stampede (2003).

2. Infrastructure Factors: These involve the physical design, condition, and capacity of the venue:

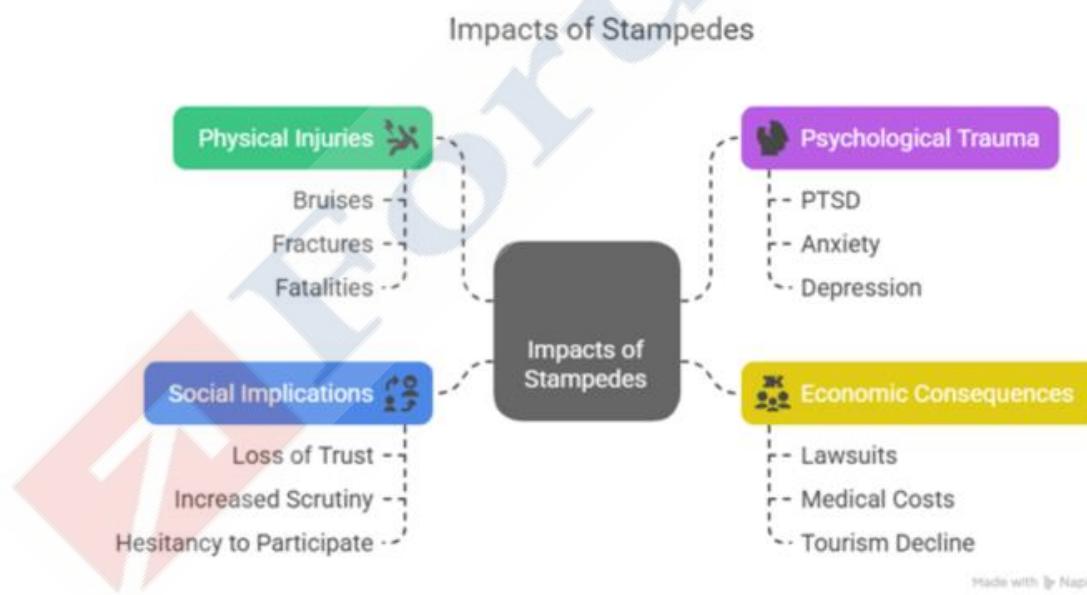
Cause	Explanation
Overcrowding	Inadequate space relative to crowd size increases risk of trampling. Example, Uphaar Cinema Tragedy (1997).
Insufficient Facilities	Narrow walkways, blocked exits, or lack of barricades cause bottlenecks. Example, Sabarimala Tragedy (1999).
Adverse Conditions	Slippery floors, poor lighting, uneven or muddy terrain increase fall risk. Example, Sabarimala Tragedy (1999).
Structural Failures	Collapse of barricades, temporary bridges, or railings escalate crowd panic. Example, Sabarimala Tragedy (1999).
Fire/Electrical Failures	Short circuits, fires in enclosed spaces, or failure of extinguishers. Example, Sabarimala Tragedy (1999).
Unauthorized Constructions	Encroachments or illegal stalls reduce escape space and visibility. Example, Sabarimala Tragedy (1999).

3. Organizational Factors: These relate to poor planning, management, and coordination between responsible agencies:

Cause	Explanation
Inadequate Crowd Management	Lack of trained staff to regulate, guide, or intervene in real-time. Example, Hillsborough Disaster (1989).
Insufficient Planning	Poor venue design, no clear exit strategy, or failure to anticipate crowd. Example, Bengaluru RCB Parade (2025).
Failure in Communication	No real-time alerts, unclear instructions, or failed PA systems. Example, Kumbh Mela (2003).

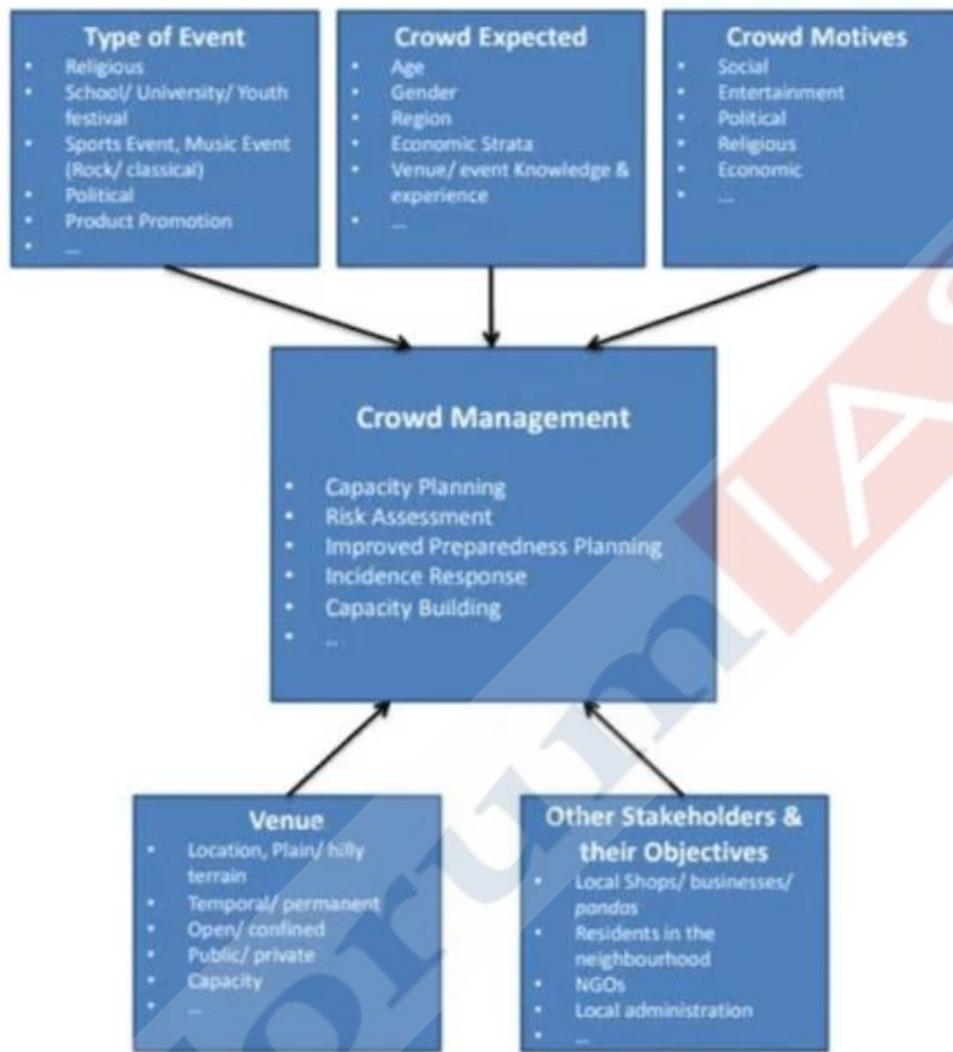
Overestimation or Ticket Overselling	More attendees than capacity, creating dangerous densities. Example, Love Parade Stampede, Germany (2010).
Locked/Closed Exits	Exits inaccessible in emergencies or used as storage. Example, Uphaar Cinema Tragedy (1997).
Lack of Surveillance or Tech	Absence of CCTV, drones, or walkie-talkies to monitor crowd dynamics. Example, Hillsborough Disaster (1989)
Poor Inter-Agency Coordination	Miscommunication or delay between police, administration, and event organizers. Example, Kumbh Mela Stampede (2003).
Fatigued or Understaffed Police	Prior deployment or inadequate briefing leaves venues unguarded. Example, Bengaluru Parade (2025).
Use of Force or Panic Response	Misuse of lathis or tear gas may provoke chaos instead of control. Example, Jallianwala Bagh (Historical).

What are the Impact of these Stampedes?



What are the NDMA Guidelines for the prevention of Stampedes in India?

NDMA has prepared 'Suggestive Framework for Preparation of Crowd Management Plan for Events/Venues of Mass Gathering'. It provides a proactive, holistic approach to prevent and manage stampedes, emphasizing planning, preparedness, and response.



Source- NDMA Document

Before Stampede (Prevention and Preparedness):

1. Planning and Capacity Building

- Understand Visitors and Stakeholders: Assess expected crowd (age, gender, motives) and stakeholder roles (e.g., police, NGOs) to tailor plans.
- Capacity Planning: Develop long-term infrastructure for religious sites, including staging points, multiple routes, and facilities (e.g., rest, water).
- Crowd Control Strategies: Manage demand-supply gaps by controlling inflow/outflow, using advance registration, and promoting off-peak visits.
- Stakeholder Coordination: Establish a Unified Control System for seamless agency collaboration.

2. Risk Analysis and Preparedness:

- Identify Threats: Use historical data and local knowledge to pinpoint risks (e.g., structural failures, overcrowding).

- Risk Assessment: Conduct Failure Mode and Effect Analysis (FMEA) to prioritize hazards based on severity, frequency, and detection difficulty.
- Rapid Venue Assessment (RVA): Perform quick audits using 20 yes/no questions to evaluate crowd management practices.
- Develop Action Plans: Define actions, responsibilities, timelines, and resources for each threat, considering vulnerable groups.

3. Information Management: Provide clear signage, public address systems, and media campaigns to inform visitors about routes, rules, and emergency procedures. Disseminate real-time crowd strength and wait times to manage expectations.
4. Safety and Security Measures: Ensure structural safety (e.g., stable barricades, emergency exits) and fire/electrical compliance. Deploy adequate, trained security personnel with CCTV, observation towers, and communication systems. Use barriers strategically to regulate crowd flow.
5. Facilities and Emergency Medical Services: Provide accessible medical facilities, ambulances, and trained staff. Plan for water, sanitation, and food to reduce crowd agitation.
6. Transportation and Traffic Management: Regulate vehicle access, parking, and shuttle services to prevent congestion. Develop emergency transportation plans for evacuation.
7. Capacity Building: Train stakeholders (organizers, police, volunteers) on crowd management, first aid, and Incident Response System (IRS). Conduct regular drills, tabletop exercises, and full-scale simulations (Section 8.2).
8. Legal Compliance: Adhere to laws like the Disaster Management Act (2005) and local regulations (e.g., UP Melas Act, 1938). Obtain necessary licenses and approvals for events.

After Stampede (Response and Recovery):

1. Incident Response System (IRS): Activate IRS with a control room and Incident Commander (IC) to coordinate response. Establish Emergency Operations Centres (EOCs) and Incident Command Posts (ICPs) for real-time management. Deploy police, medical teams, and volunteers for rescue and relief.
2. Emergency Medical Services: Provide immediate first aid and triage at the venue. Transport victims to hospitals using pre-planned ambulance routes.
3. Media Management: Disseminate factual, timely information to prevent rumors. Avoid sensationalism and respect victim privacy.
4. Relief and Rehabilitation: Distribute relief supplies (food, shelter) equitably, avoiding rushes. Support psychological recovery through counseling, as implied by addressing societal agony.
5. Post-Incident Review: Conduct inquiries to identify causes, as seen in past tragedies. Revise crowd management plans based on lessons learned, updating after major incidents or annually.
6. Legal Action: Hold negligent parties accountable, as in Uphaar and Dabwali cases, where courts imposed joint liability.

What are the Challenges in Managing Stampede?

NDMA's Managing Crowd at Events and Venues of Mass Gathering highlighted following:

1. Structural Limitations: Religious sites in difficult terrains with narrow, slippery paths and encroachments by vendors exacerbate crowd risks. Inadequate infrastructure like weak barricades multiplies dangers during mass gatherings. Example: Wai Satara stampede due to terrain bottlenecks.
2. Overcrowding and Demand-Supply Gap: Attendance exceeding venue capacity, especially during peak times, creates chaos. Cultural or religious sensitivities make restricting entries

challenging, worsening crowd management efforts. Example: Bengaluru Stampede 2025 exceeded stadium capacity.

3. Crowd Behavior: Unruly actions like pushing or rushing for freebies, combined with rumors, escalate chaos. Individuals often follow miscreants, amplifying disorder in crowded environments. Example: Kumbh Mela crowd panic triggered stampede.
4. Inadequate Security and Coordination: Insufficient deployment of poorly briefed security personnel and coordination gaps between police and local authorities hinder swift responses and crowd control. Example: Kumbh Mela lacked police-administration coordination.
5. Fire and Electrical Hazards: Non-compliance with fire safety norms in makeshift venues and illegal electrical setups spark panic. Dysfunctional extinguishers worsen rescue operations during emergencies. Example: Dabwali tragedy caused panic by fire.
6. Poor Planning and Implementation: Inadequate infrastructure development for high-traffic sites and underestimating crowd sizes lead to failed management and unregulated entry at peak times. Example: Wai, Satara mishap due to weak planning.
7. Communication Failures: Ineffective public address systems and delayed or inaccurate information dissemination amplify panic. Rumors spread faster than official responses, intensifying crises. Example: Panic spread rumors worsened Kumbh stampede.
8. Resource Constraints: Limited funding for infrastructure upgrades, inadequate medical facilities, and untrained emergency personnel reduce response efficiency and escalate fatalities during stampedes. Example: Lack of ambulances worsened Dabwali response.
9. Legal and Regulatory Gaps: Temporary permits issued without thorough checks and lax enforcement of safety regulations delay accountability and breed conditions for disasters. Example: Non-compliance cited in Uphaar cinema tragedy.
10. Lack of Public Awareness: Visitors unfamiliar with emergency protocols or safety measures are more vulnerable during crises, leading to increased casualties and chaos. Example: Public unaware of exits in Uphaar tragedy.

What Should be the Way Forward?

1. CrowdSense Analytics: Deploy AI-driven crowd behavior analytics that use heat maps, sensors, and drone surveillance to detect dangerous crowd densities, bottlenecks, or abnormal movement patterns in real time, allowing early interventions before panic escalates. Example: Kumbh Mela 2024 drone surveillance success.
2. GeoAlert Systems: Integrate geo-fencing with mobile alert systems to send instant updates, entry instructions, or emergency evacuation messages to people within a specific area, preventing chaos through timely digital communication. Example: Delhi protests 2020 geo-fencing effectiveness.
3. Timed Access Protocol: Implement digital passes with time-slot allocation to regulate entry into venues, especially religious or sports events. QR codes, face recognition, and real-time scanning reduce gate congestion. Example: Jagannath Yatra used timed entry passes.
4. Simulation Crowd Modelling: Use computer simulations to predict crowd dynamics in different layouts, scenarios, or terrain conditions. This helps event planners create safer infrastructure and escape routes. Example: London Olympics 2012 crowd simulations used.
5. Festive Zoning: Encourage decentralized celebrations across multiple zones instead of concentrating crowds in one location. Parallel sites reduce pressure and improve crowd dispersion management. Example: Mumbai Ganesh Visarjan created immersion zones.

6. **Civil Marshal Force:** Train citizen volunteers as crowd marshals for high-attendance events. These local guides assist with directing foot traffic, calming panic, and providing first-level response. Example: Tokyo Marathon uses 10,000+ volunteers.
7. **InfraSafe Audits:** Mandate safety audits of all venues before public gatherings, checking exits, signage, lighting, terrain, and encroachments. Structural compliance reduces physical risk factors. Example: IIT-Bombay audited Mumbai railway stations.
8. **Event Licensing Reform:** Link event approvals to safety protocols like police clearance, emergency response plans, and crowd control training. Penalise unlicensed or unsafe mass events. Example: Madurai Chithirai festival requires prior NOC.

Conclusion:

The Kasibugga Stampede exposed serious gaps in event planning, safety, and official coordination at religious gatherings—highlighting the urgent need for strict crowd management protocols and regular oversight, particularly for privately managed venues hosting large public events. As former NDMA Vice-Chairman M. Shashidhar Reddy once remarked, “Disasters don’t just happen; they are allowed to happen.” Until accountability is enforced and systemic corrections made, such “celebration catastrophes” will continue to repeat.

Read More: [The Hindu](#)
UPSC GS-3: Disaster Management

Cloud Seeding & Its Effectiveness – Explained Pointwise

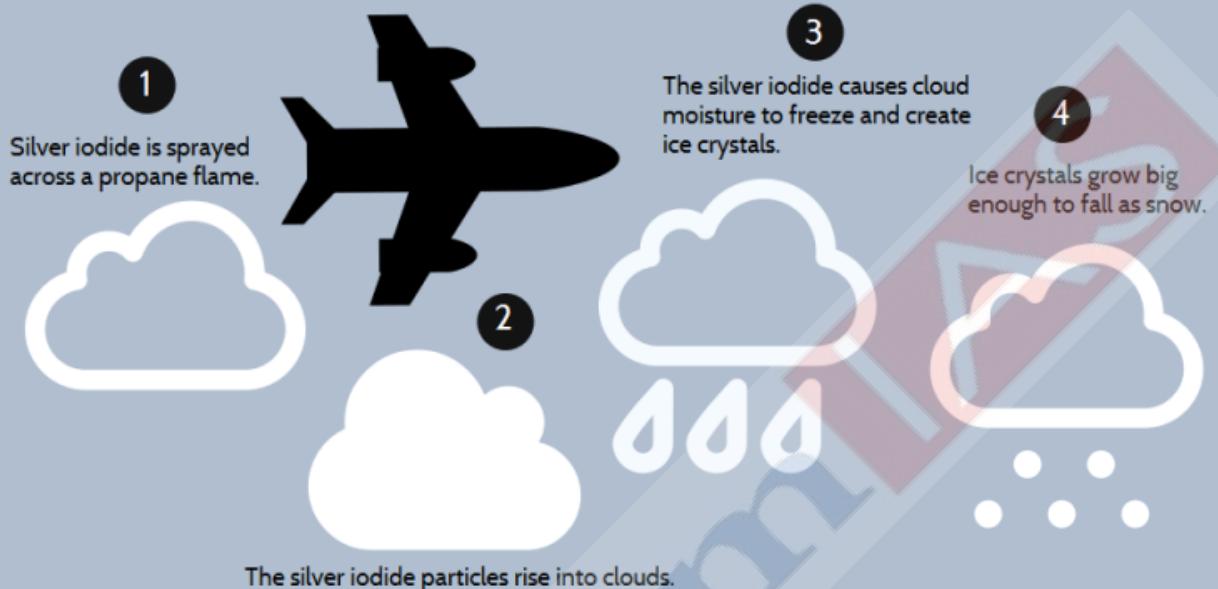
Recently, the Delhi government, in partnership with IIT Kanpur, has recently implemented artificial rain experiments (cloud seeding) as an emergency measure to combat its chronic air pollution crisis.

What is Cloud Seeding?

- Cloud seeding is a form of weather modification aimed at enhancing precipitation (rain or snow) from naturally forming clouds by dispersing specific chemical agents into the atmosphere.
- This process is employed to increase rainfall in drought-prone regions, suppress hail, clear fog, and—more recently—attempt to mitigate airborne pollution by “washing out” particulates.
- **Chemical Agents Used:** The most common chemicals are silver iodide, potassium iodide, dry ice (solid CO₂), and sometimes table salt. These agents act as cloud condensation nuclei or ice nuclei, enabling water vapor in clouds to coalesce and form larger droplets or ice crystals.
- **Mechanism:** The introduced particles mimic natural nuclei, prompting supercooled water droplets to freeze and aggregate, ultimately becoming heavy enough to fall as rain or snow.

How Does Cloud Seeding Work?

Cloud seeding is the process of spreading silver iodide into clouds to stimulate the precipitation process to form rain and snow. Silver iodide is a yellow insoluble powder that darkens when exposed to light.



Credit: Snowyhydro Renewable Energy and Weather Questions

Graphic: Brittany Dierken

Key Cloud Seeding Methods:

Cold Cloud Seeding	<ul style="list-style-type: none"> • Cold cloud seeding targets supercooled clouds—those containing liquid water droplets at temperatures below freezing (0°C). • Agent: Silver Iodide (AgI) • Mechanism: Silver iodide crystals have a structure very similar to that of ice. When dispersed into the supercooled part of a cloud, the liquid water freezes onto the AgI particle, forming an ice crystal. These crystals then rapidly grow by collecting surrounding water vapor. • Delivery: It's typically dispersed from aircraft (in flares or generators dropped into the cloud) or from ground-based generators that rely on rising air currents (updrafts) to carry the particles into the cloud.
Warm Cloud Seeding	<ul style="list-style-type: none"> • Warm cloud seeding targets clouds that are entirely above the freezing point, often found in tropical or coastal areas. • Agent: Hygroscopic Salts (e.g., Sodium Chloride or Calcium Chloride) • Mechanism: These salts are highly hygroscopic (water-attracting). When tiny salt powder particles are introduced, they immediately start attracting water molecules, forming large water droplets very quickly. These large droplets then collide with smaller ones, growing rapidly until they fall as rain.

- **Delivery:** Usually dispersed from aircraft flying directly into the base of the clouds.

Effectiveness of Cloud Seeding:

1. **Precipitation Augmentation:** When suitable clouds are present, seeding can typically increase rainfall or snowfall by 10% to 15% in the targeted area. In some specific, ideal scenarios, increases have been reported to be as high as 20% to 30%.
2. **Snowpack Enhancement:** It is highly effective in increasing mountain snowpack, which acts as a natural water reservoir. This is critical for hydropower generation and downstream irrigation in the spring. Regions like the Rocky Mountains in the US and mountainous regions in Australia have used this successfully for decades.
3. **Hail Suppression:** By introducing numerous condensation nuclei, the process can cause the water droplets to freeze into many small ice particles rather than a few large ones. These small particles melt before hitting the ground, thus reducing the size and damage potential of hail.
4. **Fog Dispersal:** In cold conditions, seeding can clear supercooled fog at airports, improving visibility and flight safety.

Challenges related to Cloud Seeding:

1. **Requires Clouds, Not Creation:** Cloud seeding cannot create clouds from clear skies. It is 100% dependent on the presence of existing clouds that contain enough liquid water and are at the right temperature (often supercooled water). If the atmosphere is too dry or stable, seeding has no effect.
2. **Atmospheric "Thirst":** Even if rain is generated, if the air mass below the cloud is very dry, the falling precipitation may evaporate before reaching the ground—a phenomenon known as virga.
3. **High Cost:** Running a sustained cloud seeding program is expensive. It requires specialized aircraft, ground stations, radar monitoring, and a team of meteorologists and pilots. This makes it an impractical or non-sustainable solution for long-term water management.
4. **The "Rain Stealing" Controversy:** This is the most significant political challenge. The downwind regions often accuse seeded areas of "stealing" their water, claiming that forcing clouds to precipitate early depletes the moisture that would have naturally fallen elsewhere. While evidence for this is inconclusive, the perception creates interstate or international political friction.
5. **Chemical Dispersion (Minimal Risk):** While Silver Iodide is the most common agent, some public concern remains about dispersing chemicals into the environment. However, the amounts are minute (parts per trillion), and scientific studies have generally concluded that silver iodide is not environmentally hazardous at the concentration levels used in cloud seeding.

Reasons for underperformance of cloud seeding in Delhi:

1. **Insufficient Cloud Moisture:** Successful cloud seeding requires clouds with high moisture content (usually above 50%) to allow chemical nuclei to facilitate droplet formation. During Delhi's trials, moisture levels were only about 15-20%, too low for effective rainfall induction.
2. **Unfavourable Weather Conditions:** Cloud seeding is highly dependent on specific meteorological conditions, which were not met during the trial periods.

- Expectations v/s Reality: Cloud seeding is not guaranteed to produce rain—its success rate is variable, and it is better seen as a supplementary, emergency intervention, not a primary solution.

Conclusion: Cloud seeding is a promising tool for weather modification, drought management, and air quality control, but its success depends on cloud properties, timing, and atmospheric conditions. While potential is high, scientific debate continues over its practical effectiveness and long-term impact.

UPSC GS-3: Environment

Read More: [The Indian Express](#)

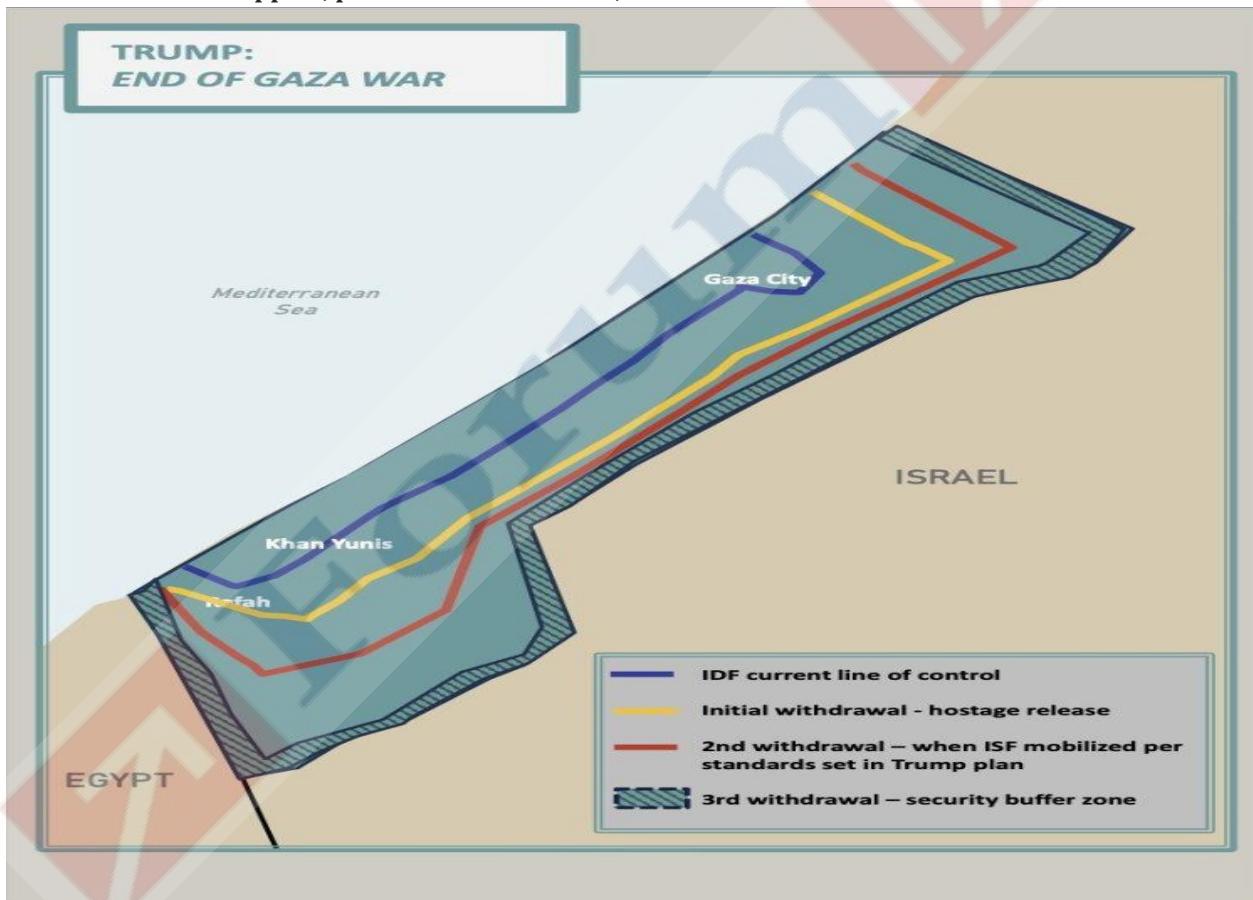
Trump's 20-Point Framework to End Israel-Hamas Conflict - Explained pointwise

Donald Trump's 20-Point Framework to end the Israel-Hamas Conflict that has resulted in over 66,000 Palestinian deaths since October 7, 2023 — unveiled in September 2025 and partly accepted in initial negotiations—was designed to secure an immediate ceasefire in Gaza, resolve hostage and prisoner issues, and establish a durable peace with international oversight.

Key Elements of Trump's 20-Point Plan:

1. **Immediate Ceasefire:** Both parties must agree to halt all hostilities, including bombing, rocket fire, and cross-border attacks.
2. **Return of Hostages:** Hamas would release all living and deceased Israeli hostages held in Gaza upon the ceasefire's implementation.
3. **Prisoner Exchange:** Israel would release Palestinian prisoners, including those from Gaza, in a comprehensive exchange with the hostages released by Hamas.
4. **Withdrawal from Gaza:** Israel to progressively withdraw its military to an agreed line after the ceasefire, monitored by international oversight.
5. **Demilitarization of Gaza:** Gradual disarmament of Hamas and other armed groups, turning Gaza into a “terror-free” zone, as a precondition for broader peace.
6. **International Stabilization Force (ISF):** Deployment of a UN-mandated, multinational security force (involving the US, Qatar, Egypt, Turkey, etc.) to stabilize Gaza, support local police, and monitor compliance.
7. **Transitional Governance:** Transfer governance of Gaza to an interim Palestinian technocratic committee, under the supervision of a “Board of Peace” led by Trump and supported by figures like Tony Blair.
8. **No Forced Displacement:** Palestinians would not be forcibly expelled or relocated from Gaza. Israel would pledge not to occupy or annex the enclave.
9. **Humanitarian Access:** Unrestricted and large-scale humanitarian aid for Gaza, including medical supplies, food, water, and international reconstruction funds.
10. **Reconstruction:** Commitment from multiple wealthy countries for the redevelopment of Gaza's infrastructure, homes, schools, and hospitals.
11. **Pathway to Statehood:** Gaza would be governed in a way that could eventually lead to Palestinian self-determination and recognition of statehood, subject to deradicalization and disarmament.
12. **Reform of Palestinian Authority (PA):** Simultaneous reforms in the PA to prepare for responsible, nonviolent governance, creating conditions for eventual unity with Gaza.

13. Monitoring and Compliance: International observers to monitor and verify compliance with ceasefire, withdrawal, and disarmament commitments.
14. Security Guarantees for Israel: The US and Arab partners to offer guarantees for Israel's security, deterring future attacks from Gaza.
15. Regional Diplomatic Normalization: The plan encourages further normalization of ties between Israel and Arab/Muslim countries to cement lasting regional peace.
16. Timeline and Deadlines: Specific deadlines for each phase, with Trump explicitly warning Hamas to accept or face harsh military consequences ("complete obliteration" if rejected).
17. Accountability for Violations: Clear consequences for non-compliance, including renewed sanctions, military action, and international condemnation.
18. No Political Control for Hamas: Hamas must forgo political control—only independent, apolitical technocrats can govern Gaza during the transition.
19. Inclusive Mediation: Ongoing mediation by the US, Egypt, Qatar, and Turkey, with input from international organizations like the UN and EU.
20. Long-Term "Everlasting Peace": The plan envisions a durable, region-wide peace sustained by economic support, political normalization, and a demilitarized Gaza.



Key Responses to Framework:

ISRAEL	Status: Accepted.
--------	-------------------

	<p>Prime Minister Benjamin Netanyahu publicly stated that he fully supported the framework, claiming it aligns with Israel's stated war aims, particularly the dismantling and demilitarization of Hamas.</p>
HAMAS	<p>Status: Partially Accepted / Core Demands Rejected.</p> <p>Hamas agreed to and carried out the requirements for the hostage and prisoner exchange that defined Phase 1. However, the group has been clear that it refuses the plan's central Phase 2 demands to disarm, decommission its weapons, and relinquish control of Gaza. This rejection of demilitarization is the biggest roadblock to achieving the plan's long-term goals.</p>
REGIONAL ARAB STATES	<p>Status: Widespread Initial Support.</p> <p>The plan garnered significant support from several critical Arab and Muslim-majority nations, including Saudi Arabia, Egypt, Qatar, the UAE, Jordan, and Turkey.</p> <p>Their support was driven by:</p> <ol style="list-style-type: none"> 1. The immediate end to the conflict and the humanitarian crisis. 2. The commitment to reconstruction and economic opportunity in Gaza. 3. The plan's explicit statement that Israel would not annex any territory in the West Bank. 4. Their willingness to potentially contribute to the proposed International Stabilization Force (ISF), provided it receives a mandate from the UN Security Council.
INTERNATIONAL COMMUNITY	<p>Status: Broad Support for Framework.</p> <p>Leaders from countries like France, India, and Italy welcomed the framework as a much-needed step toward securing the release of hostages and preventing further bloodshed, praising the ambitious vision for post-conflict governance and reconstruction.</p>
INDIA	<ul style="list-style-type: none"> • India officially endorsed the Gaza Peace Plan, emphasizing the importance of immediate ceasefire, humanitarian aid, and the release of hostages. • India welcomed the enhanced humanitarian assistance for the people of Gaza, highlighting the need for aid to reach civilians without interference.

Challenges to the Framework:

1. **Hamas' Reluctance to Fully Disarm and Relinquish Political Control:** Hamas remains hesitant to fully disarm or cede political power in Gaza to an interim technocratic government, fearing loss of influence and ideological defeat. Resistance to demilitarization threatens the framework's core premise of a "terror-free" Gaza.
2. **Trust Deficit Between Parties:** Deep mistrust between Israel and Hamas, built over decades of conflict and failed peace efforts, limits willingness for compromise and compliance. Allegations of violations or bad faith could derail ceasefire and prisoner exchange agreements.
3. **Implementation of International Stabilization Force (ISF):** Deploying a multinational force with adequate mandate, resources, and cooperation from all regional powers (Egypt, Qatar, Turkey, US) is politically and logistically complex. Ensuring neutrality, effectiveness, and long-term commitment from troop-contributing countries is a major hurdle.
4. **Regional and International Political Dynamics:** Divergent interests of Arab states, Iran's influence on proxy groups, US political transitions, and Russia-China stances complicate consensus and sustained pressure for Assad. Normalization efforts by some Arab states with Israel have not allayed tensions, and pockets of opposition persist.
5. **Humanitarian and Infrastructure Challenges:** Rebuilding Gaza's war-torn infrastructure requires massive funding, coordination, and time, with risks of corruption or diversion of resources. Delivering continuous humanitarian aid under volatile security conditions presents logistical and political challenges.
6. **Security Guarantees and Enforcement:** Ensuring lasting security guarantees for Israel while addressing Palestinian rights and aspirations is delicate; enforcement of disarmament to prevent rearmament remains uncertain.

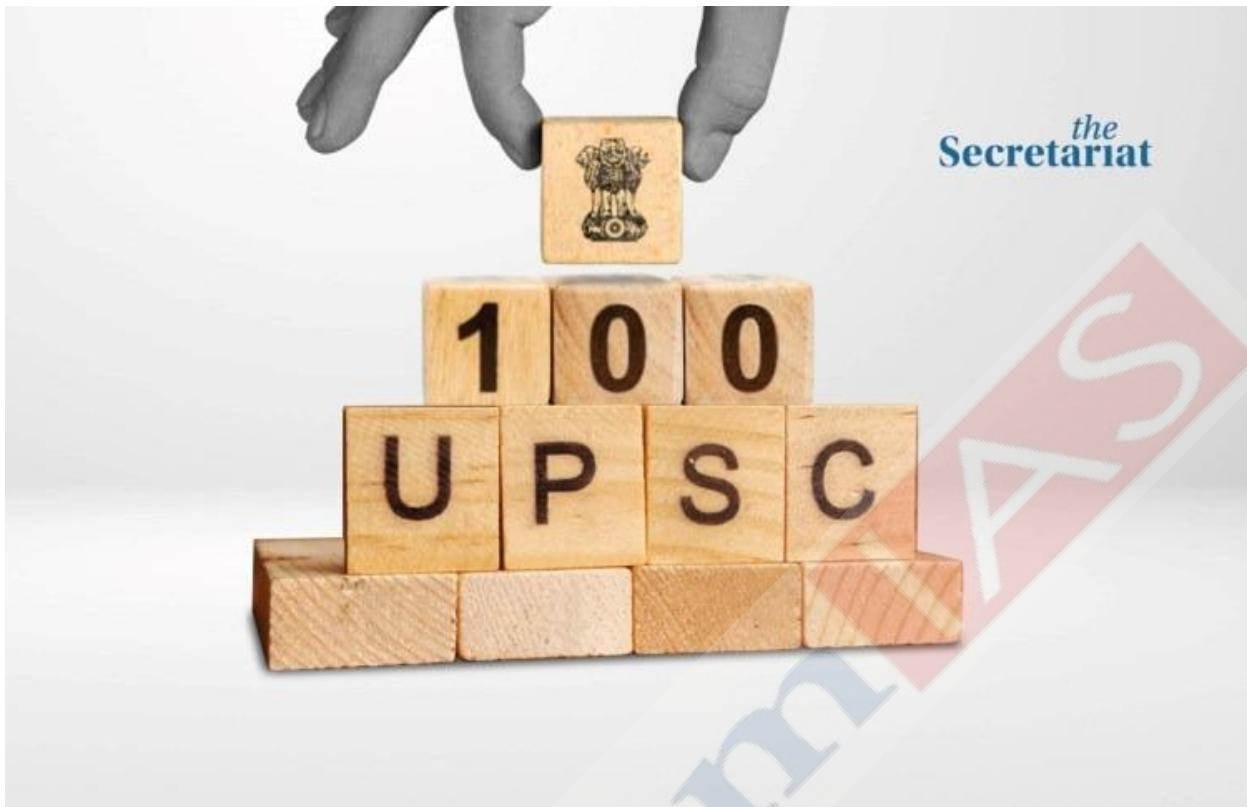
Conclusion: The 20-point framework faces serious challenges including Hamas's resistance to disarmament, entrenched mistrust, difficulties in deploying and maintaining an international stabilization force. Overcoming these requires sustained diplomatic effort, broad-based political will, and robust enforcement mechanisms.

UPSC GS-2: International Relations

Read More: [The Indian Express](#)

UPSC@100 – Functions & Challenges – Explained Pointwise

The Union Public Service Commission (UPSC) marks a century of its establishment on October 1. Envisioned by the nation's founders as a guardian of meritocracy, the UPSC has played a pivotal role in the recruitment, the promotion and the disciplining of officials of the Central Civil Services. Its journey over the past 100 years is not just an institutional history but also a testament to India's enduring faith in fairness, trust and integrity in governance.



Source: The Secretariat

Introduction:

- The Union Public Service Commission (UPSC) is the central recruiting agency responsible for appointments to the All India Services and Group 'A' and Group 'B' central services. It is regarded as the "watch-dog of the merit system" in India.
- It is a constitutional body established under Part XIV (Articles 315 to 323) of the Indian Constitution.

Functions of UPSC:

1. **Conducting Examinations:** The UPSC is responsible for holding examinations for appointments to the All India Services (IAS, IPS, IFS), the Central Services (Group 'A' and 'B' services), and various technical posts.
2. **Direct Recruitment and Selection:** Recommends candidates for direct recruitment through interviews or examinations to Group A and B posts in central government services and some Union Territories.
3. **Appointments on Promotion and Deputation:** Advises the government on appointments, promotions, transfers, and absorption into central services.
4. **Framing and Amending Recruitment Rules:** Consulted for framing or amending recruitment and service rules for various services to ensure fair and transparent procedures.
5. **Disciplinary Cases:** Advises on disciplinary matters affecting civil servants, including inquiries and penalties.

6. **Annual Reporting:** Submits an annual report on its work to the President of India, who presents it to the Parliament with explanations where the government did not accept the Commission's advice.
7. **Assistance to States:** Assists state public service commissions upon request in framing and operating recruitment schemes, especially for joint recruitments requiring special qualifications.

Independence of UPSC:

The Constitution has made the following provisions to safeguard and ensure the independent and impartial functioning of the UPSC:

1. The Chairman or a member of the UPSC can be removed from office by the President only in the manner and on the grounds mentioned in the Constitution. Thus, they enjoy security of tenure.
2. The conditions of service of the chairman or a member, though determined by the President, cannot be varied to his disadvantage after his appointment.
3. The entire expenses including the salaries, allowances, and pensions of the Chairman and members of the UPSC are charged on the Consolidated Fund of India and are not subject to the vote of Parliament.
4. The chairman of the UPSC on ceasing to hold office is not eligible for further employment in the Government of India or any state.
5. A member of the UPSC is eligible for appointment as the Chairman of UPSC or a State Public Service Commission but not for any other employment in the Government of India or any state
6. The chairman or a member of UPSC is not eligible for reappointment to that office for a second term.

Limitations of UPSC:

1. **Advisory Nature of Recommendations:** The UPSC's advice on recruitment rules, promotions, and disciplinary matters is not binding on the government. When the government chooses to override its advice, it can undermine the institution's credibility and the merit principle it upholds. The UPSC's only power here is to report the dissent to Parliament.
2. **Political and External Pressure:** While constitutionally independent, the Commission members can face pressure regarding specific appointments, promotions, or disciplinary recommendations, testing their impartiality, especially given that the appointment process for members is controlled by the Executive.
3. **Exclusion of Posts (Article 320(3)):** The President can issue regulations specifying the matters in which the Commission does not need to be consulted. Historically, this has been used to exclude posts related to:
 - o Lower-Level Posts: Group 'C' and Group 'D' services.
 - o Temporary Appointments: Appointments for less than one year.
4. **Discretion in Promotions:** While consulted for promotions, the final decision-making power rests with the appointing authority (the concerned ministry or department). The UPSC's role is typically confined to ensuring fairness in the selection procedure.
5. **Reservation Policy:** The UPSC is not consulted on matters relating to the provision of reservations (such as for SCs, STs, and OBCs) in appointments. This policy matter rests entirely with the government.
6. **Service Rules:** While consulted on recruitment rules, the UPSC is often excluded from being consulted on rules related to the classification of services, tenure, or pay and allowances.

7. **Staff and Budget:** The Commission relies on the Executive for its staffing (Secretariat) and financial resources. Its conditions of service, staff size, and budget are determined by rules framed by the President, limiting its administrative autonomy.
8. **No Training or Development Role:** The UPSC has no role in the post-selection training, posting, transfer, or career management of the appointed officers. These functions are handled by the Department of Personnel and Training (DoPT) and the respective administrative ministries.
9. **Limited Disciplinary Implementation:** In disciplinary cases, the UPSC only provides an independent inquiry and recommendation. It does not have the authority to impose penalties like suspension or dismissal; that power rests solely with the competent disciplinary authority within the government.

Reforms Needed:

1. **Binding Disciplinary Advice:** The government should make the UPSC's advice binding in all major penalty disciplinary cases. Allowing the Executive to frequently overturn advice concerning the conduct of senior officers erodes the principle of impartial accountability.
2. **Standardized Rules Vetting:** UPSC advice on the creation or amendment of Recruitment Rules (RRs) should be deemed accepted within a fixed period (e.g., 60 days) unless the reasons for rejection are approved by a high-level, constitutionally mandated committee.
3. **Separation of Wings:** Establish a clear separation between the Recruitment Wing (for CSE) and the Advisory Wing (for disciplinary/promotions), each with dedicated full-time staff and resources to prevent backlogs in one area from affecting the other.
4. **Delegating Lower Recruitment:** Completely delegate recruitment for lower posts (Group C and D) to specialized, state-level or departmental recruitment bodies, allowing UPSC to focus solely on Group A and B services.
5. **Greater Transparency in Evaluation:**
 - **Standardized Model Answers:** Publish an indicative model answer structure or key themes for essay and general studies papers shortly after the results are declared. This provides candidates with necessary feedback on the expected standard.
 - **Audit of Scaling:** Subject the scaling or moderation process used for optional subjects (to ensure parity across different subjects) to external, independent audit, and publish the statistical methodology used.
6. **Improved Selection of Commission Members:** The quality and integrity of the UPSC depend on its members and Chairman:
 - **Broadening the Selection Committee:** The selection committee for UPSC members and the Chairman should be expanded to include the Leader of the Opposition and the Chief Justice of India (or their nominee), making the appointment process more non-partisan and credible.
 - **Defining Eligibility Criteria:** Clearly define non-political, merit-based criteria (e.g., experience in education, administration, law, or public management) for appointment to prevent it from becoming a post-retirement sinecure for political appointees.

Conclusion: UPSC is at the heart of the recruitment journey of lakhs of aspiring candidates who are driven by dedication, perseverance & a dream to serve the nation. Thus, as it enters its centenary year, it should not only celebrate but also bring reforms to make the recruitment process more transparent & equal playing, as well as, it should continue to uphold its gold standard of integrity, fairness & excellence to serve the nation with the same trust & distinction in the years to come.

UPSC GS-2: Polity – Constitutional Bodies

Read More: [The Hindu](#)

Cyber Frauds and Safeguarding India's Digital Economy – Explained Pointwise

India's cyberspace has expanded rapidly with over 86% of households now connected to the internet, reflecting the transformative progress under the *Digital India* initiative. However, the rise in digital penetration has also led to an unprecedented increase in cyber frauds such as phishing, unauthorized access, data theft, and online scams targeting individuals and institutions. The number of cybersecurity incidents has surged from 10.29 lakh in 2022 to 22.68 lakh in 2024, highlighting both increased reporting and growing vulnerability in the digital ecosystem.



Emerging Trends in Cyber Frauds:

1. The pattern of frauds has become more sophisticated, with the rise of AI-driven deepfakes and social engineering scams.
2. Fraudsters exploit Unified Payments Interface (UPI) by cloning or misusing virtual numbers, leading to unauthorized fund transfers.

3. Phishing, pig-butcherering, phantom hacking, and instant loan app scams are among the fastest-growing digital crimes.
4. The financial losses from online betting apps alone are estimated to exceed ₹400 crore, illustrating the economic dimension of cyber threats.
5. Organised crime networks, often based in Southeast Asian “fraud factories,” are increasingly involved in transnational cyber-fraud operations.

Need for Safeguarding India's Digital Economy from Cyber Frauds:

1. **Protecting Financial Inclusion & UPI Adoption:** The digital economy's greatest strength is also its biggest vulnerability: its penetration into rural and lower-income segments:
 - **Erosion of Trust:** Millions of citizens have entered the formal financial system solely through mobile apps and UPI. If these users—who may have lower digital literacy—become victims of phishing or impersonation scams, their trust in digital payments collapses. This setback could reverse years of hard-won financial inclusion progress.
 - **Scale of Transactions:** India processes billions of UPI transactions monthly. Even a small fraction of successful frauds translates into astronomical financial losses, often impacting small merchants and everyday users most severely.
 - **Vulnerability of Endpoints:** The weakest link is often the user's endpoint (mobile phone). Frauds rely heavily on social engineering, phishing links, and remote access apps rather than just technical network breaches, making user education and strong fraud-detection algorithms essential.
2. **Mitigating Economic Losses & Investment Risks:** Unchecked cyber fraud directly impacts capital, discourages investment, and strains enforcement agencies:
 - **Direct Capital Loss:** Fraud results in the immediate loss of capital, both for individuals and the financial institutions that absorb or reimburse certain losses. This drains liquidity from the formal banking sector.
 - **Discouraging FDI:** Foreign Direct Investment (FDI) depends on confidence in the security and regulatory environment. High-profile cyber breaches or rampant fraud signal a weak defense perimeter, making international investors hesitant to commit capital to digital enterprises.
 - **Cost of Compliance and Security:** Businesses must divert increasing amounts of resources—time, money, and skilled personnel—from innovation into compliance and security patches, slowing down organic economic growth.
3. **Securing Critical Infrastructure & Data Sovereignty:** As banking, energy, telecom, and transportation are now interconnected through digital systems, the scope of a cyber attack extends far beyond financial loss:
 - **Attacks on Critical Infrastructure:** Malicious actors targeting the systems that underpin the digital economy (e.g., banking cores, power grids, or telecom networks) could lead to systemic paralysis, crippling national services and posing a direct threat to national security.
 - **Data Exploitation:** Fraudulent activities often serve as precursors for large-scale data theft and identity compromise. Protecting user data—which underpins the success of the Digital India stack—is crucial for maintaining individual sovereignty and preventing misuse by foreign or adversarial entities.

Challenges in Curbing Cyber Frauds:

1. **Rapid Technological Evolution:** The fast pace of artificial intelligence, deepfakes, and quantum technologies outpaces the capability of enforcement and regulation.
2. **Low Cyber Awareness:** A large segment of citizens lacks digital literacy and are unaware of basic cyber hygiene practices.
3. **Jurisdictional and Cross-Border Barriers:** Many frauds originate overseas, complicating investigation and extradition.
4. **Under-Reporting of Cases:** Victims often refrain from reporting due to fear of embarrassment or lack of faith in grievance systems.
5. **Limited Skilled Workforce:** Shortage of trained digital forensic professionals in small towns and districts delays timely response.
6. **Fragmented Institutional Coordination:** Overlaps between agencies like CERT-In, I4C, and NCIIPC can hinder real-time information exchange.
7. **Implementation Gaps:** Enforcement of the *Digital Personal Data Protection Act, 2023* and related frameworks remains nascent.
8. **Financial Inclusion Risks:** First-time digital users and senior citizens remain the most vulnerable to UPI and SMS-based scams.

Cyber Laws and Legal Safeguards:

1. The Information Technology Act, 2000 forms the legal backbone of India's cyber law framework, covering offences like identity theft, impersonation, and cyber fraud.
2. The Intermediary Guidelines and Digital Media Ethics Code, 2021 ensures accountability of digital intermediaries and curbs the dissemination of harmful content.
3. The Digital Personal Data Protection Act, 2023 mandates lawful, consent-based processing of personal data, protecting citizens from misuse and unauthorized access.
4. These frameworks collectively enabled the blocking of 94.28 lakh SIM cards and 26,348 IMEIs linked to fraudulent activities.
5. Over 1.08 lakh police officers have been trained in cyber investigation, and 82,704 certificates have been issued to strengthen cyber forensic capacity.

Key Measures and Institutional Framework:

1. The Union Budget 2025–26 has allocated ₹782 crore for cybersecurity projects, emphasizing the government's commitment to digital resilience.
2. The National Cyber Crime Reporting Portal (www.cybercrime.gov.in) enables citizens to lodge online complaints and facilitates fund freezing in financial frauds.
3. A dedicated helpline (1930) provides immediate support to victims of online financial crimes.
4. The Indian Computer Emergency Response Team (CERT-In) acts as the national nodal agency for cyber incident response. It has conducted 109 mock drills and engaged 1,438 organizations to assess cyber preparedness.
5. The National Critical Information Infrastructure Protection Centre (NCIIPC) safeguards critical sectors such as banking, telecom, and power through sector-specific security audits.
6. The Indian Cybercrime Coordination Centre (I4C) under the Ministry of Home Affairs coordinates law-enforcement efforts and has successfully blocked 3,962 Skype IDs and 83,668 WhatsApp accounts linked to cyber fraud.
7. To regulate emerging threats, the Promotion and Regulation of Online Gaming Bill, 2025 was enacted to govern online money gaming and its associated financial transactions.
8. The Citizen Financial Cyber Fraud Reporting and Management System (CFCFRMS) has strengthened the grievance-redressal mechanism for online financial crimes.

9. Through the Cybercrime Prevention against Women and Children (CCPWC) scheme with an outlay of ₹132.93 crore, cyber forensic labs have been set up across 33 States and Union Territories, and over 24,600 personnel have been trained in cyber investigation.
10. The Manthan Platform and over 205 workshops have enhanced inter-agency collaboration, awareness, and training on cyber governance.

Way Forward:

1. Strengthen Legal Architecture: Amend and modernize the *IT Act, 2000* to include AI-related, blockchain-based, and cross-border cyber offences.
2. Integrated Cyber Defence: Establish a unified *National Cyber Defence Architecture* to synergize CERT-In, I4C, and NCIPC operations.
3. Capacity Building: Incorporate cyber law, digital forensics, and ethical hacking modules in police and judicial academies.
4. Public Awareness Campaigns: Launch a nationwide *Cyber Suraksha Abhiyan* focusing on rural areas and vulnerable populations.
5. Technological Innovation: Employ AI-driven fraud detection, blockchain for transaction traceability, and predictive analytics for threat forecasting.
6. International Collaboration: Strengthen partnerships with INTERPOL, ASEAN, and the *Budapest Convention on Cybercrime* for intelligence sharing and extradition mechanisms.
7. Gender and Child-Sensitive Approach: Expand the CCPWC programme and create safe online environments through parental control tools and awareness education.
8. Regular Cyber Audits: Mandate annual cybersecurity audits for all government departments and financial institutions.

CONCLUSION: India's Prime Minister envisions "*a Digital India where cybersecurity becomes an integral part of national security.*" With comprehensive frameworks like CERT-In, I4C, and the Data Protection Act, India is building robust digital defence mechanisms. The convergence of strong laws, institutional coordination, public awareness, and technological innovation will help India emerge as a digitally secure and resilient nation, ensuring that the benefits of digitalization are not undermined by the perils of cyber fraud.

Read More: [The Hindu](#)
 UPSC GS-3: Cybersecurity

Alternative Dispute Resolution in India – Significance and Challenges – Explained Pointwise

The Minister of Law and Justice recently reaffirmed the government's commitment to legal reforms rooted in India's civilizational ethos. Citing the doctrine of Panch Parmeshwar, which embodies the principle of collective consensus in dispute resolution, the Minister emphasised the need for global cooperation to strengthen Alternative Dispute Resolution (ADR) mechanisms. The India Justice Report 2025 highlights significant challenges in India's justice system, particularly including access, delays, and accountability. According to the National Judicial Data Grid (NJDG), the total number of pending cases in India is 4,57,96,239. In the Supreme Court, the number of pending cases is 81,768, and in the High Courts, it is approximately 62.9 lakh. These delays often result in injustice, increasing the focus on ADR as a faster, cost-effective, and socially inclusive way to deliver justice.

ALTERNATIVE DISPUTE RESOLUTION (ADR) METHODS



Introduction:

- Alternative Dispute Resolution (ADR) refers to non-judicial mechanisms such as arbitration, mediation, conciliation, negotiation, and Lok Adalats, which are used to resolve disputes outside traditional courts.
- ADR is vital for promoting access to affordable, timely, and amicable justice and helps ease the burden on the formal judiciary.

Types of ADR Mechanisms:

Arbitration	<ul style="list-style-type: none">• Arbitration is the most formal type of ADR and results in a binding decision.• Process: Parties voluntarily refer their dispute to one or more independent third parties (Arbitrators).• Outcome: The arbitrator, acting like a private judge, delivers an Arbitral Award.• Enforcement: This award is legally binding and is enforceable in court, making it a powerful alternative to litigation, especially for commercial contracts.
--------------------	--

Mediation	<ul style="list-style-type: none"> Conciliation is a non-binding process where a neutral third party (the Conciliator) assists the parties in reaching a negotiated settlement. Role of Conciliator: The conciliator is highly proactive. They may suggest terms of settlement, assess legal merits, and even draft proposals to help the parties bridge their differences. Outcome: If successful, the parties sign a Settlement Agreement, which holds the same status as an Arbitral Award and is enforceable under law.
Conciliation	<ul style="list-style-type: none"> Mediation is a flexible, non-binding process where the third party (the Mediator) facilitates dialogue between the parties. Role of Mediator: The mediator acts as a neutral communication expert. They do not give legal advice or suggest solutions but help the parties understand each other's interests and explore creative, mutually acceptable solutions. Focus: It is party-centric and often used in family, labour, and community disputes where preserving the relationship is important.
Negotiation	<ul style="list-style-type: none"> Negotiation is the most common and least formal method where parties directly communicate to reach a voluntary settlement without the intervention of a third party. While not typically included in formal ADR definitions, it is the bedrock upon which most ADR successes are built.
Lok Adalat	<ul style="list-style-type: none"> The Lok Adalat system, established under the Legal Services Authorities Act, 1987, is a unique Indian contribution to ADR. Purpose: To provide a forum for speedy and inexpensive justice, particularly to the weaker sections of society. Functioning: They are presided over by a judicial officer, social workers, and lawyers. They mainly deal with pre-litigation cases or cases pending in regular courts. Outcome: The awards passed by Lok Adalats are deemed to be a decree of a civil court and are final and binding on the parties, with no provision for appeal. This finality makes them highly effective for mass dispute resolution, such as in motor accident claims or petty civil matters.

Legal & Statutory Foundations of ADR mechanisms in India:

1. Constitutional Provisions:

- Article 39A: Mandates the state to provide free legal aid and ensure justice is accessible, which supports the growth of ADR as an affordable justice mechanism.
- Articles 14 and 21: Guarantee equality before the law and protection of life and personal liberty, underpinning the right to access alternative dispute resolutions.

2. The Arbitration and Conciliation Act, 1996: This is the foundational law for Arbitration and Conciliation. It is based on the UNCITRAL Model Law and rules, making Indian awards easily enforceable internationally. The Act has been amended several times (notably in 2015 and 2019) to improve efficiency and reduce judicial interference.
3. The Code of Civil Procedure (CPC), 1908: Section 89 of the CPC explicitly mandates courts to refer disputes to ADR mechanisms (Arbitration, Conciliation, Judicial Settlement, Lok Adalat, or Mediation) where potential for settlement exists.
4. Legal Services Authorities Act, 1987:
 - Establishes Lok Adalats (People's Courts) to facilitate amicable resolution of disputes.
 - Ensures legal aid and organizes Lok Adalats at various levels.
 - Awards passed by Lok Adalats are binding and final without appeal.
5. Mediation Act, 2023:
 - A recent legal development focused on strengthening mediation as an ADR tool.
 - Provides the regulatory framework, accreditation of mediators, confidentiality protections, and enforcement mechanisms for mediated settlements.

Significance of ADR:

1. Relief to Overburdened Judiciary: India faces a massive backlog of cases in courts; ADR helps in reducing the pressure by resolving disputes quickly through arbitration, mediation, and Lok Adalats.
2. Affordable and Accessible Justice: ADR mechanisms are generally less expensive than litigation, making justice more accessible to economically weaker sections and promoting social equity.
3. Speedy Dispute Resolution: ADR resolves disputes faster than traditional court processes, which can drag on for years.
4. Confidentiality: Unlike public court trials, ADR processes are private, protecting the parties' business secrets and personal dignity.
5. Flexibility and Party Autonomy: Parties have more control over procedures and outcomes, increasing satisfaction and compliance.
6. Preservation of Relationships: Especially crucial in family, commercial, and community disputes, ADR encourages collaboration, understanding, and long-term coexistence.
7. Supports Legal Framework: ADR aligns with constitutional mandates for justice (Article 39A) and is backed by various statutes, strengthening the justice delivery system.
8. Promotes Specialised Resolution: Arbitration and mediation offer expert resolutions in commercial and technical disputes, enhancing efficiency.
9. Empowers Marginalised Groups: Through Lok Adalats and legal aid services, ADR empowers marginalized and rural populations in India.

Challenges of ADR Mechanisms:

1. Lack of Awareness and Education: Many litigants, especially in rural and less literate populations, are unaware of ADR options. Legal professionals and judges also sometimes lack adequate training or understanding of ADR processes.

2. Trust Deficit and Perception Issues: ADR is often perceived as less authoritative or impartial than courts. Some parties distrust mediators or arbitrators, fearing unfair bias or inadequate transparency.
3. Inconsistent Quality and Standards: There is a lack of uniform standards for mediators, arbitrators, and conciliators, leading to variability in the quality and fairness of ADR outcomes.
4. Limited Institutional Support: ADR infrastructure, such as mediation centers and arbitration institutions, remains underdeveloped or unevenly distributed across regions.
5. Enforceability and Compliance Issues: While arbitration awards are legally binding, other ADR outcomes (especially mediation and conciliation agreements) may face enforcement challenges if parties renege.
6. Power Imbalances and Coercion Risks: ADR processes often occur without sufficient safeguards to protect weaker parties from coercion or unequal bargaining power.
7. Judicial Interference and Delays: Courts sometimes interfere in ADR processes or delay enforcement, undermining ADR's efficiency benefits.
8. Cultural and Social Barriers: In certain disputes, societal norms and traditions may hinder open communication or acceptance of ADR outcomes.
9. Limited Scope for Complex Cases: ADR may not be suitable for all types of disputes, especially those involving serious criminal matters or complex multi-party litigation.

Conclusion: Alternative Dispute Resolution forms a vital part of India's justice system, and this is timely and cost-effective for disputes outside the courtroom. ADR can become the answer for India's judicial challenges, crowding the courtrooms and lack of access to courtrooms. ADR, therefore, is not only a relief mechanism for courts but a pathway to a harmonious, efficient, and accessible justice system in India.

UPSC GS-2: Polity

Read More: [The Hindu](#)

Soil Nutrition Management – Need & Challenges – Explained Pointwise



A detailed study conducted by ICAR has found that the unscientific use of fertilisers & climate change are contributing to degradation of organic carbon in arable areas of the country. The study has found that if the organic carbon is low, then the deficiency of micronutrients in the soil is high, and if the organic carbon is high, the deficiency is low. In this regard, we need to understand the significance & challenges of soil nutrition management.

Soil Nutrition Management

What is Soil Nutrition & Soil Nutrition Management?

- Soil nutrition refers to the availability and balance of essential nutrients within the soil that are necessary for healthy plant growth and development. It's a critical aspect of soil health and fertility, directly impacting the productivity of ecosystems and agriculture.
- Soil nutrients can broadly be categorized into:

Macro-Nutrients	<p>Primary Macronutrients (NPK):</p> <ol style="list-style-type: none"> 1. Nitrogen (N): Crucial for leafy growth, chlorophyll production (photosynthesis), & protein synthesis. 2. Phosphorus (P): Essential for energy transfer, root and flower development, and hastening maturity. 3. Potassium (K): Improves plant vigor, disease resistance, and helps in the formation and movement of sugars, starches, and oils, enhancing fruit quality. <p>Secondary Macronutrients:</p> <ol style="list-style-type: none"> 1. Calcium (Ca): Important for cell wall structure, root health, and nutrient absorption. 2. Magnesium (Mg): A key component of chlorophyll, vital for photosynthesis. 3. Sulfur (S): Involved in protein synthesis and enzyme activity, contributing to flavor and odor in many plants.
Micro-Nutrients	<p>Needed in smaller quantities, but equally vital for plant health and various metabolic processes.</p> <p>These include Iron (Fe), Manganese (Mn), Zinc (Zn), Copper (Cu), Boron (B), Molybdenum (Mo), Chlorine (Cl), and Nickel (Ni).</p>
Non-Mineral Nutrients	<p>Soil Organic Carbon (SOC), Hydrogen (H), and Oxygen (O) are obtained by plants from the atmosphere and water, not directly from the soil minerals.</p>

- Soil nutrition management is the strategic and sustainable approach to managing the availability and balance of nutrients in the soil to optimize plant growth, enhance crop productivity, and maintain soil health, all while minimizing environmental impacts and ensuring economic viability.
- It's a dynamic process that goes beyond simply adding fertilizers; it involves understanding the complex interactions within the soil ecosystem and making informed decisions to meet the specific nutrient needs of crops throughout their life cycle.
- It works on key principles like:
 1. Right Source i.e. selecting the appropriate type of nutrient.
 2. Right Rate i.e. applying the correct amount of nutrients.
 3. Right Time i.e. timing of nutrient applications to match crop growth stages.
 4. Right Place i.e. placing nutrients where crops can absorb them effectively.

Status of Indian Soils:

- Out of the 8.8 million soil samples tested under Soil Health Card Scheme in 2024, <5% have high or sufficient N, only 40% have sufficient P, 32% have sufficient K & only 20% are sufficient in SOC (Soil Organic Carbon).
- Soils in India also suffer from a deficiency of sulphur, as well as micronutrients like iron, zinc & boron.
- Imbalanced use of N, P & K:
 - In Punjab – Nitrogen is overused (in excess of recommendations by 61%), while potassium & phosphorus are under-used by 89% & 8% respectively.
 - In Telangana – Nitrogen is overused (in excess of recommendations by 54%), while potassium & phosphorus are under-used by 82% & 13% respectively.

- Nationwide, the fertiliser-to-grain ratio has declined significantly from 1:10 in 1970s to 1:2.7 in 2015. That means, more & more fertilisers are being used to produce same quantity of grains.
- Soils in several parts of India are severely deficient in nutrition & need to be immediately taken to ICU to restore them to normal health so that they can produce nutritious food on a sustainable basis.

Why do we need Soil Nutrition Management?

1. **To Optimize Crop Yield and Quality:** Plants need a balanced supply of 17 essential nutrients (macronutrients and micronutrients) to grow optimally. If even one nutrient is deficient, it can limit growth and yield, regardless of how abundant other nutrients are. Soil nutrition management ensures crops receive the right nutrients in the right amounts at the right time.
2. **To Maintain and Enhance Soil Health and Fertility:** Intensive farming practices, especially without proper replenishment, can “mine” nutrients from the soil, leading to widespread deficiencies over time. Management practices aim to replenish these nutrients and build up soil fertility.
3. **Reducing Nutrient Pollution:** Improper nutrient management (e.g., over-application, incorrect timing/placement) can lead to nutrient losses through leaching, runoff etc which can cause environmental problems like eutrophication, contamination of surface water as well as groundwater resources.
4. **Mitigating Climate Change:** Healthy soils, rich in organic matter, act as significant carbon sinks, sequestering carbon dioxide from the atmosphere. Sustainable soil nutrition management practices contribute to reducing greenhouse gas emissions.
5. **Optimizing Input Costs:** By applying the right amount of nutrients at the right time and place, farmers can avoid wasteful over-application of fertilizers, leading to significant cost savings.

What are the challenges to Soil Nutrition Management?

1. **Nutrient Deficiencies and Imbalances in Soil:** Soils in India suffer from deficiencies in multiple macro and micronutrients (e.g., nitrogen, phosphorus, potassium, zinc, boron, sulfur). Compounding this is the imbalanced use of fertilizers, often favoring nitrogen due to subsidies, leading to an skewed NPK ratio and further nutrient imbalances.
2. **Low Soil Organic Carbon (SOC):** Depleting SOC levels are a major concern. Low SOC reduces the soil's ability to retain nutrients and water, impairs soil structure, and diminishes microbial activity, making nutrient management more difficult.
3. **High Cost of Inputs:** Lack of proper soil nutrition management practices leads to more use of fertilisers. Fertilizers, especially those containing micronutrients or organic amendments, can be expensive for small and marginal farmers, who constitute a large portion of the agricultural sector.
4. **Subsidy Distortions:** Government subsidies, particularly on nitrogenous fertilizers (like urea), can create perverse incentives, encouraging overuse of certain nutrients while discouraging the balanced application of others. This leads to nutrient imbalances and inefficient resource allocation.
5. **Nutritional Deficiency in Crops:** Soil nutrient deficiency not only impair agriculture productivity but also degrade the nutritional quality of crops. Crops grown on nutrient deficient soils often mirror those deficiencies, leading to a silent but pervasive form of malnutrition in humans for e.g. Zinc deficiency in Indian soils translates into low Zn content in cereals like wheat & rice, which in turn is linked to childhood stunting.

What have been various government initiatives for SNM?

1. **Soil Health Card (SHC) Scheme:** Launched in 2015. The scheme aims to inform the farmers about the nutrient status of their soil and provides recommendations on the appropriate dosage of fertilizers and soil amendments needed to maintain soil health and fertility. The SHC includes information on 12 parameters: Macronutrients (Nitrogen, Phosphorus, Potassium), Secondary nutrient (Sulphur), Micronutrients (Zinc, Iron, Copper, Manganese, Boron), and Physical parameters (pH, Electrical Conductivity, Organic Carbon).
2. **Paramparagat Krishi Vikas Yojana (PKVY):** Also launched in 2015. The scheme aims to promote organic farming in India, aiming to improve soil health and organic matter content, and increase farmers' net income by realizing premium prices for organic produce.
3. **Neem Coated Urea (NCU):** Urea is coated with neem oil, which slows down the nitrification process (conversion of urea into forms that can be lost through leaching or volatilization). This ensures a slower, more sustained release of nitrogen, making it more available to the crop over a longer period.
4. **PM Programme for Restoration, Awareness Generation, Nourishment, and Amelioration of Mother-Earth (PM-PRANAM):** Launched in 2023. The scheme aims to incentivize States and Union Territories to promote the sustainable and balanced use of fertilizers, adopt alternative fertilizers, and encourage organic farming.
5. **Integrated Watershed Management Programme (IWMP) and National Policy for Management of Crop Residues (NPMCR):** Focus on soil moisture conservation, prevention of nutrient loss, and promotion of in-situ conservation practices to protect and enrich soil.

What can be the way forward?

1. **Integrated Nutrient Management (INM):** INM is a holistic and sustainable approach to managing soil fertility and plant nutrient supply. It involves the judicious combination of various sources of plant nutrients, including organic, inorganic, and biological components, to achieve optimal crop productivity while enhancing soil health and minimizing environmental degradation.
2. **Reform Fertilizer Subsidies:** Gradually reorient subsidies from product-based (especially urea) to nutrient-based (NBS) for all fertilizers, including urea, to encourage balanced fertilization (the ideal NPK ratio of 4:2:1). This could involve linking subsidies more directly to Soil Health Card recommendations.
3. **Promoting Sustainable Agricultural Practices:**
 - a. **Crop Residue Management:** Strictly discourage crop residue burning and promote in-situ management (e.g., using Pusa Decomposer, happy seeder technology) and ex-situ utilization (e.g., for biochar production).
 - b. **Conservation Agriculture (CA):** Actively promote reduced tillage, no-tillage, and direct seeding practices to minimize soil disturbance, improve soil structure, and conserve moisture and organic matter.
 - c. **Diversify Cropping Systems:** Encourage crop rotation and intercropping to break pest cycles, improve nutrient cycling, and reduce the depletion of specific nutrients. Promote millets and other nutri-cereals for dietary diversity and climate resilience.
4. **Nano-Fertilizers and Smart Delivery Systems:** Accelerate research and development of nano-fertilizers and other precision agriculture technologies (e.g., sensor-based nutrient application, variable rate technology) for efficient nutrient delivery and reduced environmental impact.
5. **National Soil Policy:** Implement a comprehensive National Soil Policy to integrate efforts across sectors, streamline incentives, and set clear targets for soil conservation, restoration, and

sustainable management. This would address erosion, nutrient loss, and carbon sequestration, and align actions with land degradation neutrality goals by 2030.

Conclusion:

Soil nutrition management is no longer only an agriculture issue, it has become a public health imperative because only when the soils receive the nutrients do they produce food that nourishes rather than merely fills the stomach. Thus, a science-based soil nutrition management is the urgent need of the hour for India.

Read More: [The Hindu](#)

UPSC GS-3: Agriculture

India-Bhutan Relationship - Significance & Challenges - Explained Pointwise

PM Narendra Modi is on a visit to Bhutan. India-Bhutan relations are marked by exemplary friendship, trust, and multi-sectoral cooperation, but also face complexities arising from strategic, economic, and geopolitical challenges. The relationship is India's one of the most successful partnerships - that thrives despite vast asymmetry in size & significant changes in the regional environment.

Introduction:

- Relationship with Bhutan is cornerstone of India's Neighbourhood First Policy.
- The relationship is characterized by deep trust, shared security interests, and extensive developmental cooperation. It is often described as a special relationship that has withstood geopolitical challenges.
- The relationship is built on a legacy of mutual respect and is underpinned by key treaties:
 - Treaty of Peace and Friendship (1949): This was the original foundation, establishing close ties.
 - Revised Treaty of Peace and Friendship (2007): The treaty was revised to reflect Bhutan's sovereignty and transition to a constitutional monarchy. While preserving the spirit of close cooperation, the revised treaty grants Bhutan full authority over its foreign policy, while New Delhi remains committed to assisting Bhutan's security and development.

Significance of India-Bhutan Bilateral Relations:

For India

1. **Buffer Against China:** Bhutan's location as a buffer state between India and China is critical for Indian national security, especially in the sensitive Chumbi Valley and Doklam region, which are close to India's Siliguri Corridor. Thus, Bhutan is important for India to secure its 'Chicken's neck' corridor.
2. **Regional Diplomacy:** Bhutan aligns with India on global and regional platforms like SAARC, BIMSTEC, and BBIN, reinforcing India's leadership and countering external influences.

	<p>3. Countering Internal Threats: Cooperation with Bhutan is vital for border management and checking the movement of insurgents and extremist groups operating in India's North-Eastern states.</p>
For Bhutan	<ol style="list-style-type: none"> 1. Trade and Investment: India is Bhutan's largest trading partner, accounting for over 75% of its imports and nearly 60% of its exports. Duty-free trading and free movement of goods bolster Bhutan's economic stability. 2. Hydropower Cooperation: Indian investment in Bhutan's hydel projects (Tala, Chukha, Kuričchu, Mangdechhu) provides Bhutan with a steady and sustainable revenue stream. The revenue generated from selling hydropower to India often accounts for over 25% of Bhutan's national revenue, making it the single largest source of foreign exchange. 3. Development Aid: India is the largest provider of development assistance to Bhutan, contributing thousands of crores for Five Year Plans, education, health, infrastructure, and High Impact Community Development Projects. 4. Indian Diaspora: About 50,000 Indians are presently working in Bhutan in the sectors such as infrastructure development, hydropower, education, trade and commerce signifying close people to people ties between the two countries.

Challenges in India-Bhutan Bilateral Relations:

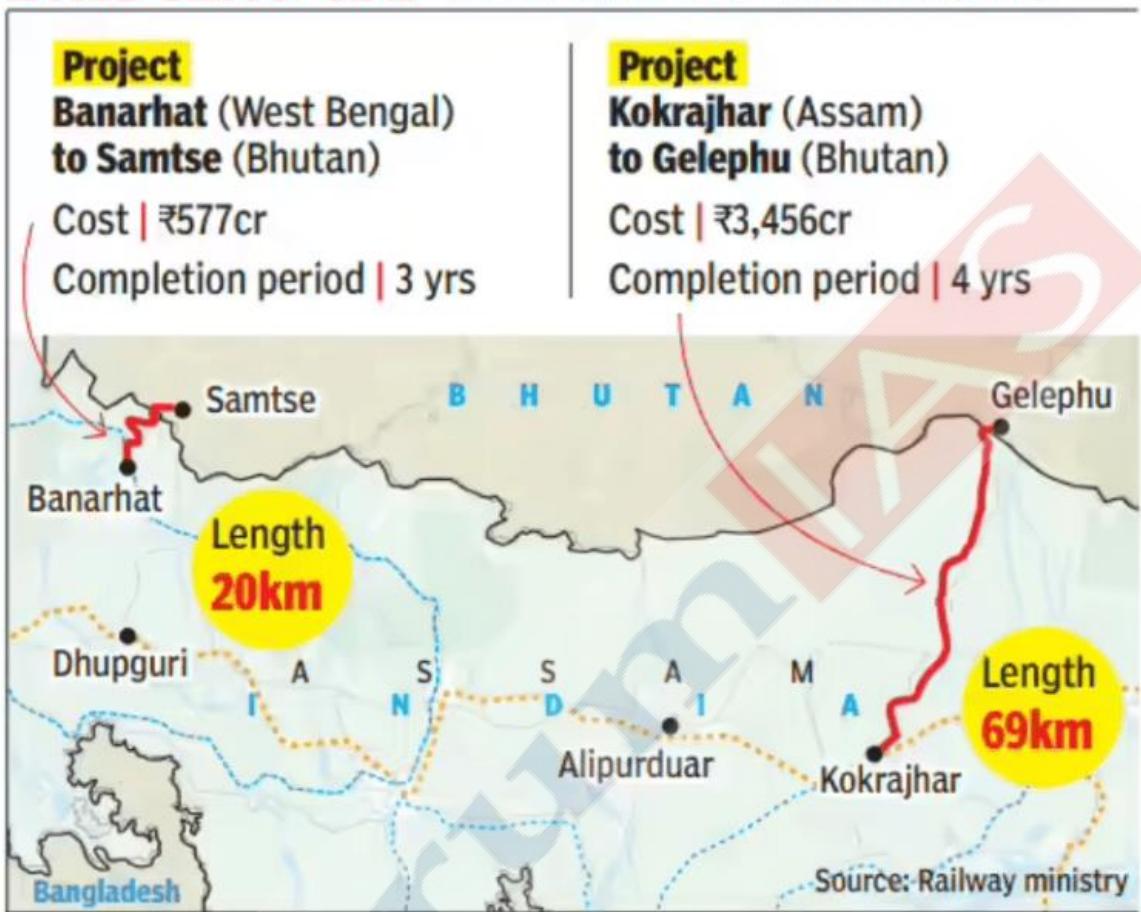
1. Bhutan-China Border Talks: Bhutan is actively engaged in border negotiations with China, particularly concerning the disputed areas in the north and the crucial Doklam Plateau in the west. Any settlement reached between Bhutan and China has profound implications for India, especially for the security of its Siliguri Corridor (the "Chicken's Neck").
2. Hydropower Concerns: While hydropower is a cornerstone of bilateral cooperation, Bhutanese critics sometimes see project terms as too favorable to India, leading to public dissent and questions around equity and sustainability. Delays and cost overruns in hydropower projects contribute to discontent in Bhutan.
3. Trade Diversification & Economic Diversification:
 - o Bhutan faces a persistent trade deficit, importing much more from India than it exports, despite preferential trade agreements.
 - o Bhutan is keen to diversify its economy into non-hydro sectors like high-end tourism, IT, and sustainable industries.
 - o Despite the free trade agreement, Bhutanese businesses sometimes face non-tariff barriers or bureaucratic hurdles when trying to access the Indian market.
4. Connectivity & Infrastructure Gaps:
 - o Road, rail, and transport links between India and Bhutan remain limited, hampering further economic and strategic integration.

- Bhutan's reservations about joining the BBIN Motor Vehicles Agreement due to sustainability and environmental concerns have slowed regional connectivity initiatives.
- 5. The "Big Brother" Syndrome: Due to India's overwhelming size and historical role as protector, there is a persistent public sentiment (though small) in Bhutan that views India as overly dominant or a "Big Brother."
- 6. Environmental & Social Sensitivities: Bhutan's focus on Gross National Happiness and environmental preservation sometimes clashes with India's infrastructure-led approach (e.g., highways, hydropower, BBIN MVA). There are concerns about the potential social impacts of rapid integration, such as migration and cultural change.
- 7. Border Management & Security: While the 699 km India-Bhutan border is largely peaceful, incidents of illegal crossings, militant hideouts, and smuggling necessitate close security cooperation.

Various areas of Cooperation between India & Bhutan:

1. Hydropower Cooperation (Economic Engine): This is the single most important economic aspect of the relationship and a key driver of Bhutan's national revenue.
 - "Win-Win" Model: India funds, constructs, and operates major hydroelectric projects in Bhutan. India then purchases the surplus electricity at preferential rates. This arrangement provides Bhutan with massive revenue (accounting for over 25% of its GDP) and provides India with clean, renewable energy.
 - Projects: Key projects include Chukha, Tala, Kurichhu, and the large Punatsangchhu Hydroelectric Projects (I and II), which are the result of deep technical and financial collaboration.
2. Trade & Economic Cooperation:
 - Duty-Free Access: Bhutan enjoys free trade access to the Indian market for most of its exports.
 - Development Assistance: India is Bhutan's largest development partner. The Government of India provides significant financial grants and support for Bhutan's Five-Year Plans, funding critical sectors like education, health, and infrastructure development.
 - Currency Stability: The Indian Rupee (INR) is fully convertible with the Bhutanese Ngultrum (BTN), and India extends currency swap arrangements to Bhutan, ensuring financial stability during economic fluctuations.
3. Security & Strategic Cooperation:
 - Border Security: India is responsible for training the Royal Bhutan Army (RBA). The RBA and Indian forces cooperate closely on border management.
 - Doklam Standoff (2017): When the Chinese military attempted to build a road on the disputed Doklam plateau (claimed by Bhutan), Indian forces intervened based on the strategic implications for India's own security (Siliguri Corridor or 'Chicken's Neck'). India's intervention demonstrated its commitment to Bhutan's territorial integrity.
4. Connectivity & Infrastructure: India funds and constructs cross-border roads, border infrastructure (BRO Project DANTAK), bridges, and new cross-border railway lines (Gelephu/Kokrajhar, Samtse/Banarhat).

BRIDGING GAP BETWEEN 2 NATIONS



Source: Times of India

- Environmental & Climate Cooperation: Joint conservation projects, such as the Transboundary Manas Conservation Area (TraMCA), and collaboration to keep Bhutan carbon-negative and promote eco-tourism.
- Health Cooperation: Medical aid, initiatives like Indira Gandhi Memorial Hospital, COVID-19 assistance, and support with vaccines/essential medicines highlight the health partnership.

Way Forward:

1. Make Economic Partnership More Equitable & Diversified:
 - Ensure hydropower and trade agreements address Bhutan's concerns on dependency, revenue sharing, and sector diversification (tourism, digital economy, agriculture).
 - Foster Indian investments into Bhutan's non-hydro sectors—IT, services, manufacturing, health, education—to create jobs and build resilience.
 - Offer Bhutan full access to India's Digital Public Infrastructure (DPI), such as the UPI payment mechanism, to modernize their financial sector.
2. Upgrade Connectivity & Infrastructure:
 - Accelerate new cross-border railway links (e.g., Gelephu-Kokrajhar, Samtse-Banarhat), border checkposts, and digital integration for seamless trade and transit.

- Enhance road, air, and digital connectivity for North-East India, Bhutan, and regional integration.

3. Strengthen Security & Strategic Coordination:

- Maintain regular security dialogues and border consultations to monitor regional threats, especially China's moves near the Doklam plateau.
- Intensify cooperation in border management, anti-terrorism, intelligence sharing, and disaster response.

4. Promote Sustainable Development & Environmental Harmony: Joint efforts on green energy (hydro, solar, hydrogen), eco-tourism, disaster resilience, and climate adaptation in line with Bhutan's Gross National Happiness approach.

Conclusion: India-Bhutan relations are a model for good-neighbourly partnerships built on mutual respect, trust, and extensive cross-sectoral cooperation. Continued strategic sensitivity, transparency, and mutual benefit are key to sustaining and strengthening the relationship in the face of evolving regional dynamics.

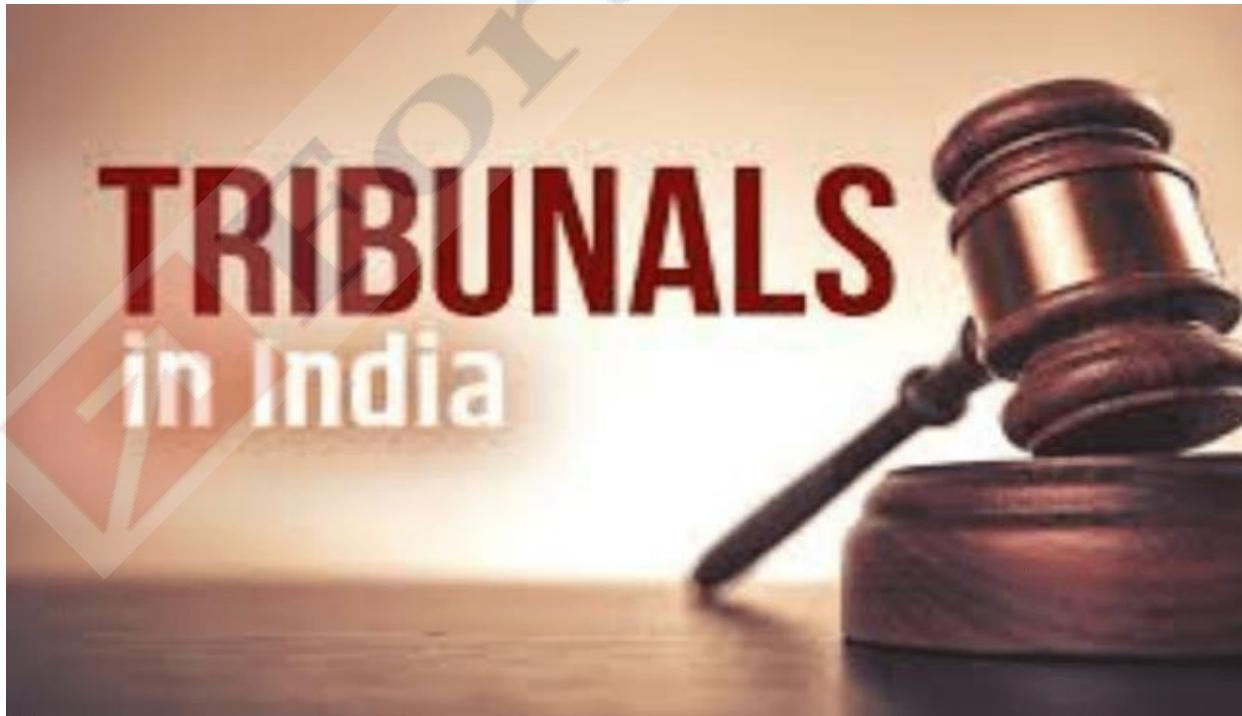
UPSC GS-2: International Relations

Read More: [The Indian Express](https://www.theindianexpress.com/article/politics/india-bhutan-relations-7607337/)

Tribunals in India- Explained Pointwise

The Supreme Court is hearing petitions challenging the Tribunals Reforms Act, 2021, bringing into focus the long running confrontation between the judiciary & the executive over the control of tribunals.

Tribunals in India:



What are the tribunals?

Created with love ❤ by ForumIAS- the knowledge network for civil services.
Visit academy.forumias.com for our mentor based courses.

- Tribunal is a specialized, **quasi-judicial body** established to resolve specific disputes, such as administrative or tax-related issues. It **adjudicates disputes, determines rights, and reviews administrative decisions**.
- They serve as alternatives to traditional courts and specialize in providing faster, cost-effective, and expert resolutions for particular kinds of cases.
- Objective: Tribunals reduce the burden on regular courts and provide specialized dispute resolution that is swift, efficient, and accessible.
- The number of pending cases in India exceeds 4.5 crore (as per the National Judicial Data Grid, 2024), highlighting the dire need for an efficient system. According to the **Tribunals Reforms Act, 2021**, the Government has merged and rationalized several tribunals, aiming to improve efficiency.

Key Characteristics:

- **Specialization:** They deal exclusively with matters requiring specific, domain-based expertise (e.g., tax, telecom, or electricity).
- **Faster Disposal:** They aim to offer a quicker and more efficient resolution mechanism than the regular civil courts.
- **Less Formal:** Procedures are generally simpler and less rigid than those followed by civil courts, though principles of natural justice must always be adhered to.
- **Composition:** They typically include both judicial members (retired judges or lawyers) and administrative/technical members who possess specialized knowledge in the relevant field.

What are the constitutional and legal provisions related to Tribunals in India?

The original Constitution did not include provisions related to tribunals. However, the **42nd Amendment Act of 1976** introduced **Part XIV-A**, titled “**Tribunals**,” which consists of two articles:

- Article 323A – Pertains to administrative tribunals.
- Article 323B – Covers tribunals for other specific matters

Provisions	Description
Article 323A	Grants Parliament the power to establish administrative tribunals for resolving disputes related to recruitment and service conditions of individuals employed in the Central and state governments, local bodies, public corporations, and other public authorities
Article 323B	Authorizes both Parliament and state legislatures to create tribunals for various matters, including industrial and labor disputes, foreign exchange, land reforms, elections, rent and tenancy rights, and more.

Administrative Tribunals Act, 1985

To implement Article 323A, Parliament enacted the Administrative Tribunals Act, 1985, empowering the Central Government to establish:

- Central Administrative Tribunal (CAT) for central government employees.
- State Administrative Tribunals (SATs) for state government employees.

What are the landmark judgement's related to tribunals in India?

S.P. Sampath Kumar v. Union of India (1987)	Recognized tribunals as substitutes for High Courts and upheld their constitutional validity .
L. Chandra Kumar v. Union of India (1997)	Declared that tribunals cannot act as substitutes for High Courts and must be subject to judicial review under Article 226 and 227 .
Madras Bar Association v. Union of India 2014	Administrative support for all tribunals should come under the Ministry of Law and Justice.
Rojer Mathew versus South Indian Bank Limited & ors, 2019	The impact of amalgamation of tribunals should be analysed with judicial impact assessment .
Madras Bar Association versus Union of India, 2020	National Tribunals Commission should be set up to supervise appointments, as well as functioning and administration of tribunals.
Madras Bar Association versus Union of India, 2021	Struck down various provisions in tribunal reforms that undermined judicial independence.

What are the key developments in the Indian tribunal system?

Pre-Independence Era (Before 1947)	The Income Tax Appellate Tribunal was established as India's first tribunal to reduce court workload and expedite tax dispute resolution
------------------------------------	---

Post-Independence Era (1947-1980)	<p>1950: Industrial Disputes (Appellate Tribunal) Act provided for an appellate tribunal to handle industrial disputes.</p> <p>1969: The First Administrative Reforms Commission recommended Civil Services Tribunals at national and state levels for service-related disputes.</p> <p>1974: The Sixth Law Commission suggested high-powered tribunals to reduce High Court case backlogs.</p> <p>1976: The Swaran Singh Committee recommended setting up:</p> <ul style="list-style-type: none"> a. Administrative Tribunals ((both at national level and state level) for service-related cases. b. All-India Appellate Tribunal for labor disputes. c. Sector-specific tribunals for revenue, land reforms, and essential commodities. d. Supreme Court oversight for tribunal decisions.
Golden Era of Tribunalization (1980-2000)	<p>Establishment of several tribunals, including:</p> <ul style="list-style-type: none"> a. Central Administrative Tribunal (CAT) – for administrative matters. b. Securities Appellate Tribunal (SAT) – for financial sector disputes. c. Film Certification Appellate Tribunal – for film certification disputes. d. Appellate Tribunal for Electricity – for tariff-related cases.
2000-2016: Expansion of Tribunals	<p>2000: Debt Recovery Tribunal (DRT) – for resolving disputes between banks and borrowers.</p> <p>2002: Competition Commission of India (CCI) and Competition Appellate Tribunal (COMPAT) – to regulate fair competition.</p> <p>2010: National Green Tribunal (NGT) – for environmental disputes.</p> <p>2016: National Company Law Tribunal (NCLT) & National Company Law Appellate Tribunal (NCLAT) – for corporate and insolvency matters.</p>
2017- Merger of COMPAT with NCLAT	<p>The Finance Act, 2017 reduced the number of tribunals from 26 to 19 based on functional similarity. It gave the central government authority to define qualifications, appointments, and service conditions for tribunal members.</p>
Tribunal Reforms Act, 2021	<p>The Tribunals Reforms (Rationalization and Conditions of Service) Bill, 2021 aimed to streamline the tribunal system. Nine tribunals were abolished, transferring their functions to existing judicial bodies, mainly High Courts.</p>

Why are tribunals important, and what is their significance?

1. **Speedy Justice:** Tribunals are designed to offer **faster dispute resolution** compared to traditional courts. E.g. The **Consumer Disputes Redressal Commissions** resolve cases within 3-6 months, NCLT expedited cases under the **Insolvency and Bankruptcy Code (IBC), 2016**, ensuring faster debt recovery.

2. **Specialized Expertise:** Tribunals were designed to handle complex, sector-specific disputes requiring technical expertise. E.g. **Power sector (APTEL), taxation (ITAT), corporate law (NCLAT), copyright (IPAB).**

3. **Reducing Court Burden:** By handling **specialized cases**, tribunals reduce the workload of **high courts** and the **Supreme Court**. E.g. The **Central Administrative Tribunal (CAT)** has significantly reduced litigation burden in service-related disputes.

4. **Economic Governance:** Tribunals like the **NCLT** and **DRT** play a critical role in ensuring economic stability and ease of doing business. E.g. Creditors have recovered approximately Rs 3.55 lakh crore by resolving 1,068 insolvency cases under the IBC, 2016, as of September 2024 since 2016.

5. **Environmental Protection & Protecting Fundamental Rights:** The **National Green Tribunal (NGT)** has played a pivotal role in environmental protection cases like the **Vizag Gas Leak (2020)**. It is also instrumental in addressing environmental issues, such as the Yamuna pollution case and illegal mining in Aravalli Hills.

6. **Access to Justice:** Tribunals provide a cost-effective and accessible forum for resolving disputes, especially for **marginalized groups**.

7. **Alternative Dispute Resolution (ADR):** Tribunals provide an alternative dispute resolution mechanism, which can be less adversarial and more conducive to finding mutually agreeable solutions.

What are various challenges faced by Tribunals in India?

1. **Case Backlogs Rising:** As of 2023, the **Debt Recovery Tribunal (DRT)** has over **215,431 pending cases**, with an asset recovery rate of just 9.2% in 2022-23, far below the desired efficiency.

2. **Mergers and Abolitions Causing Hindrance:** The merger of tribunals like **COMPAT** with **NCLAT** has led to overburdened benches and loss of specialization.

3. **Lower Vacancies and Poor Infrastructure:** Tribunals like **APTEL** face chronic vacancies and lack adequate infrastructure, leading to delays. **NCLT operated at 50% capacity in 2023**, delaying crucial insolvency resolutions. Many tribunals lack digital case management systems, affecting efficiency.

4. **Judicial Overreach:** The **Supreme Court's intervention in the Telecom Disputes Settlement and Appellate Tribunal (TDSAT)** ruling on the **Adjusted Gross Revenue (AGR)** dispute has raised questions about the legal standing of tribunals.

5. **Appointment Concerns:** The trend of appointing **retired judges and bureaucrats** raises questions about post-retirement placements and expertise. E.g. **The Ministry of Law and Justice** controls appointments and budgets which reduces the administrative independence.

6. **Lack of Uniformity:** Different tribunals follow varying procedures, leading to inconsistency. For instance, the **Armed Forces Tribunal (AFT)** and **Central Administrative Tribunal (CAT)** have different rules for evidence submission.

7. **Ineffective Implementation:** The appointment process for tribunal members is slow and opaque, leading to prolonged vacancies. E.g. **The Law Commission's 272nd Report (2017)** recommended a **central nodal agency**, but no progress has been made.

8. **Economic Impact:** Delays in tribunal decisions have significant economic consequences. E.g. **unresolved tax disputes worth ₹12 lakh crore** are pending before various tribunals, affecting government revenue and investor confidence.

What is the Way Forward?

1. **Establish an Independent Tribunal Oversight Body:** Inspired by the National Judicial Appointments Commission (NJAC), a **Tribunal Commission** should oversee appointments, funding, and administration. E.g. **The Law Commission's 162nd Report** suggested a **National Administrative Appellate Tribunal** above High Courts—an idea that needs revisiting.

2. **Structured Tribunal Management System:** A **Central Tribunal Division** within the Ministry of Law and Justice should be implemented to streamline operations. Case management technology and AI-based analytics should be deployed to track tribunal performance.

3. Implement a Double-Shift System to Expedite Disposal: To clear the backlog, tribunals should operate in two shifts, a proposal discussed in 2011 but never implemented. This would increase case disposals without increasing infrastructure costs.

4. Strengthen the Specialization and Independence of Tribunals: Instead of appointing retired bureaucrats, **tribunals must have domain-specific technical panels** to ensure **subject matter expertise**. Reduce judicial interventions by strengthening tribunal autonomy under the **Tribunals Reforms Act**.

5. Digital Transformation of Tribunals: Fully digitalize tribunal processes through **an e-Tribunals initiative**, ensuring real-time case tracking. Integrate **online dispute resolution (ODR)** mechanisms to reduce case inflow into traditional tribunals. E.g. **The UK's HM Courts & Tribunals Service**.

6. Minimizing Executive Control: The legislature should reduce bureaucratic control over tribunal functioning, as recommended in **Royer Mathew (2019)** case.

7. Enhancing Judicial Autonomy: Ensure tribunals operate with **minimal interference** from higher courts, as emphasized in the **L. Chandra Kumar vs Union of India (1997)** case.

Conclusion: Tribunals thus play a critical role in India's legal system by combining judicial powers with technical expertise to resolve disputes efficiently in domains requiring specialized knowledge. The decisions of these tribunals are generally subject to judicial review by the relevant High Court, and ultimately the Supreme Court. They serve as essential pillars of an effective governance system that requires specialized mechanisms for complex regulatory issues.

Read more: [The Indian Express](#)

UPSC Syllabus- GS 2- Quasi-judicial bodies

Cooperative and Competitive Federalism – Explained Pointwise

The States in India are no longer looking only at the Centre for supporting them, but are also competing with each other for attracting investors & pitching their case with confidence & data. Thus, the federalism in India is believed to be moving towards maturity.

Federalism in India operates on two key principles: **cooperative federalism** and **competitive federalism**, both of which influence governance, economic growth, and fiscal discipline. However, the **growing trend of freebies-based competitive federalism** has raised concerns about sustainability, fiscal responsibility, and the long-term economic impact.

While competitive federalism fosters economic efficiency and innovation, an unchecked race to provide freebies threatens financial stability. This article explores the dynamics of cooperative and competitive federalism & their impact on governance, and their challenges.

COOPERATIVE & COMPETITIVE
FEDERALISM



Source- Big Buzz

What is the concept of Competitive and Cooperative Federalism?

Cooperative Federalism

Cooperative federalism emphasizes **collaboration between the Union and state governments**. Both levels of government share responsibilities and work together for the larger public interest. It ensures coordination and alignment of policies across the Centre and states. Examples include:

1. Goods and Services Tax (GST) Council, where the Centre and states jointly decide tax rates and structures.
2. Ayushman Bharat and PM-KISAN, which require Centre-state collaboration for effective implementation.
3. Zonal Councils, established by the **States Reorganization Act, 1956**, to resolve inter-state disputes.

Competitive Federalism

Competitive federalism fosters **horizontal competition among states** and **vertical competition between the Centre and states** to attract investment, enhance governance, and improve public services. The **NITI Aayog** promotes competition through rankings in ease of doing business, education, and health. Examples include:

1. Gujarat and Maharashtra's economic rivalry in the 2000s, offering tax breaks and subsidies to attract manufacturers.
2. State-specific welfare schemes, such as **Telangana's Rythu Bandhu** and **Odisha's KALIA**, complementing central schemes like **PM-KISAN**.
3. Vibrant Gujarat Summit, attracting global investments.

Constitutional provisions supporting Cooperative & Competitive Federalism

1. **Seventh schedule:** It classifies legislative subjects into the **Union List, State List, and Concurrent List**, ensuring a balance of power and cooperation between different levels of government.
2. **Article 261 (Full Faith and Credit Clause):** Mandates that public acts, records, and judicial proceedings of one state be recognized and upheld across all states, promoting legal uniformity.
3. **Article 263 (Inter-State Council – ISC):** Provides for the establishment of the Inter-State Council (ISC) to investigate and discuss subjects of common interest among states and the Union, fostering cooperation.
4. **All India Services (Article 312):** Provides for centrally-recruited officers serving in both the Centre and states, ensuring administrative cooperation.
5. **Goods and Services Tax (GST) (Article 279A):** Establishes the GST Council, where states negotiate and compete over taxation policies, striving for a favorable business environment.
6. **NITI Aayog (Executive Initiative, Replacing Planning Commission):** Encourages a competitive approach through performance-based rankings, incentives, and best governance practices among states.

What is the present status of freebies Competitive Federalism?

1. **Shift from Cooperative to Competitive Freebies-** Instead of competing on efficiency and governance, **states now engage in populist policies** that include **reckless subsidies** and **fiscal imprudence**. This has turned competitive federalism into a fiscal bidding war, where states offer increasingly larger cash transfers and free services to gain political mileage.

Examples include: **Monthly cash transfers to women** announced by Karnataka and Rajasthan, despite fiscal constraints.

2. **Unsustainable Fiscal Health:**

- **States like Punjab and Delhi** struggle with debt due to excessive freebies.
- **Karnataka and Rajasthan's policies** of monthly cash transfers raise concerns about long-term sustainability.
- **Ease of doing business (BRAP rankings)** reflect a wide variation in competitiveness, with some states lagging due to fiscal mismanagement.

What is the significance of Competitive and Cooperative Federalism?

Competitive federalism:

1. **Enhancing economic efficiency:** Encourages states to align policies with local needs, leading to investment and job creation.
2. **Encouraging policy innovation:** States experiment with new governance models and regulatory frameworks.
3. **Strengthening fiscal discipline:** Competitive federalism, when linked to financial prudence, ensures that states balance spending and revenue generation.
4. **Improving public service quality:** To attract businesses and skilled workers, states invest in infrastructure, education, and healthcare.

Cooperative Federalism

1. **Balanced Regional Development:** Promotes equitable growth by reducing regional disparities through collaboration between the central and state governments.

2. Facilitates Resource Sharing: Encourages **joint initiatives in infrastructure, disaster management, and environmental protection**, ensuring optimal resource utilization and avoiding duplication of efforts.

What are the key initiatives undertaken to enhance both Competitive and Cooperative Federalism?

Competitive Federalism

State-Level Policy Initiatives	1. TS-iPASS (Telangana) a single-window clearance for businesses 2. Global Investors Meet (Tamil Nadu) attracts FDI and domestic investment 3. GIFT City (Gujarat) turned into a global financial hub.
Investment Friendliness Index (IFI)	To be launched in 2025, the IFI will rank states based on investment attractiveness . It will be built on the Business Reform Action Plan (BRAP) by DPIIT, which has driven regulatory reforms since 2014-15.
PPP Project Pipelines	States mandated to develop public-private partnerships (PPP) for infrastructure projects.

Cooperative Federalism

National Manufacturing Mission (NMM):	Aims to foster cooperative federalism by aligning central and state efforts to strengthen manufacturing ecosystems . Encourages States to compete on efficiency while collaborating on systemic improvements.
India Infrastructure Project Development Fund (IIPDF):	The IIPDF fosters cooperative federalism by providing financial and technical assistance , enabling states—regardless of their fiscal capacity—to actively participate in national infrastructure development.
Economic Survey 2022-23	Highlights the importance of cooperative federalism in achieving sustainable development goals.

What are the challenges in Competitive and Cooperative Federalism?

Challenges in Competitive Federalism:

1. Quasi-Federalism & Central Dominance: The **Union government holds superior powers** through the **residuary list** and **precedence in the concurrent list**, often overriding state authority and limiting competition.
2. Unchecked competition & Race to the Bottom: States engage in reckless subsidies and tax breaks to attract investment, often leading to fiscal mismanagement. Bureaucratic inefficiencies negate the benefits of competition, preventing real structural reforms.

3. Conflict Between Finance Commission (FC) and GST Council: Article 269A(1) empowers the GST Council to recommend tax-sharing for inter-state trade, while Articles 270(1A) and 270(2) state that GST revenues must be distributed as per Finance Commission (FC) recommendations. This **imbalance** between **cooperative federalism (GST)** and **competitive federalism (FC)**.

Challenges in Cooperative Federalism:

1. Inequitable Distribution of Central Tax Revenue:

- States like **Bihar, Odisha, and Assam** argue that uniform funding **ignores economic disparities**, putting them at a disadvantage.
- Richer states feel burdened by having to **contribute more tax revenue** while receiving fewer central grants.

2. Implementation Gaps in Centrally Sponsored Schemes:

- Many schemes (e.g., **Smart Cities Mission, National Health Mission**) suffer from **bureaucratic inefficiency**, leading to delays and poor execution.
- States **lack flexibility** in implementation, leading to inefficient spending.

What are the recommendations for Reform?

1. **Conditional Grants Framework:** The Finance Commission should **link central grants to performance-based criteria** to curb fiscal imprudence.
2. **Policy Innovation:** The National Manufacturing Commission should drive real policy shifts rather than duplicating existing schemes.
3. **Yardstick Competition:** Public rankings create reputational incentives for states to improve performance relative to peers. For ex- **Scandinavian countries use competitive federalism** while maintaining strict fiscal rules.
4. **Accountability Mechanisms:** Establish clear frameworks to prevent states from prioritizing populism over fiscal prudence.
5. **Market-Preserving Federalism:** Subnational competition drives efficiency and innovation, while a structured national framework prevents coordination failures. For ex- **Germany's federal financial system** ensures competition while maintaining equal development.
6. **Balanced Competitive & Cooperative Federalism:** Ensure responsible competition while collaborating on systemic improvements.

Read more: [The Hindu](#)

UPSC Syllabus- GS 2- Issues and challenges pertaining to the federal structure

Air Pollution In Delhi- Reasons and Solutions- Explained Pointwise



Air Pollution In Delhi

The air pollution in Delhi is again in the news, with the **worsening of Delhi's air quality**. The AQI in certain areas of Delhi has been recorded at its worst in the last 3 years. The choking air pollution has led to the invocation of **Graded Response Action Plan** (GRAP) in Delhi-NCR region. In fact, the Delhi government, in partnership with IIT Kanpur, has recently implemented artificial rain experiments (cloud seeding) as an emergency measure to combat its chronic air pollution crisis.

In this article we will look into the reasons for air pollution in Delhi. We will also look at the possible solutions to combat this climate health emergency.



Source- The Indian Express

What is air Pollution and how is it measured in India?

Air Pollution: Air pollution is the introduction of chemicals, particulates or biological materials into the atmosphere that cause discomfort, disease, or death to humans.

Measurement of Air Pollution In India:

- In India, air pollution is measured according to the National Air Quality Index developed by Central Pollution Control Board (CPCB) in 2014.
- The measurement of air quality in the NAQI framework is based on **eight pollutants**, namely- Particulate Matter (**PM10**), Particulate Matter (**PM2.5**), Nitrogen Dioxide (**NO2**), Sulphur Dioxide (**SO2**), Carbon Monoxide (**CO**), Ozone (**O3**), Ammonia (**NH3**) and Lead (**Pb**).

Categorization of Air Quality under AQI:

AQI	Remark	Colour Code	Possible Health Impacts
0-50	Good		Minimal Impact
51-100	Satisfactory		Minor breathing discomfort in sensitive people
101-200	Moderate		Breathing discomfort to people with asthma and heart disease.
201-300	Poor		Breathing discomfort to most people on prolonged exposure.
301-400	Very Poor		Respiratory illness on prolonged exposure
401-500	Severe		Affects healthy people and seriously impacts those with existing diseases.

Source- CPCB

Read More- [Air Quality Standard of India](#)

What are the reasons for the rise in air pollution in Delhi?

1. **Stubble Burning:** Stubble burning in Punjab, Rajasthan, and Haryana emits large amounts of toxic pollutants in the atmosphere. These pollutants contain **harmful gases** like methane (CH₄), carbon monoxide (CO), volatile organic compounds (VOC) and carcinogenic polycyclic aromatic hydrocarbons. The **IIT consortium report** have estimated that stubble burning contributed up to **35% of Delhi's PM 2.5 levels** during the peak October-November season.

Created with love ❤ by ForumIAS- the knowledge network for civil services.

Visit academy.forumias.com for our mentor based courses.

2. **Reduced Wind Speed:** Low-speed winds in winters are unable to disperse these pollutants effectively. Further, Delhi lies in a **landlocked region** and does not have the geographical advantage of sea breeze to disperse the suspended pollutants.
3. **Effect of Northwesterly winds:** After the withdrawal of monsoons, the predominant direction of winds in northern India is northwesterly. These northwesterly winds bring the **dust from the gulf region**, northern Pakistan and Afghanistan.
4. **Dip in Temperatures** lowers the inversion height: With the decrease in temperature, **inversion height lowers down, leading to concentration of pollutants in the lower atmosphere.** (Inversion height is the layer beyond which pollutants cannot disperse into the upper layer of the atmosphere).
5. **Vehicular Pollution:** Delhi has one of the **highest number of registered private vehicles** in India. Official emissions inventories of 2018 show that vehicles emit about 40 per cent of the particulate load in the city of Delhi.
6. **Construction Activities and Open Waste Burning:** Pollution due to **landfill burning and construction debris** enhances the pollution levels in the Delhi NCR region.
7. **Firecrackers:** Firecrackers burning during Diwali further adds to the increase in air pollution levels.
8. **Urban development strategy in India:** The current strategy focuses on real estate development, a widening of roads and allowing large fuel guzzling vehicles which are major reasons for increased pollution.
9. **Expansion of 'Grey' infrastructure:** Water bodies, urban forests, green cover, and urban agriculture have all reported shrinkage, and "grey" infrastructure has seen rapid expansion.
10. **Land use change:** The handing over of open spaces to real estate developers and lack of any meaningful afforestation affects the city's ecology.
11. **Promotion of car sales:** Widening roads induces people to buy more cars, thus leading to more pollution levels.
12. **Construction activities:** It contributes roughly 10% of air pollution in Delhi-NCR. There are hardly any steps being taken to monitor construction activities.

What are the harmful effects of air pollution?

The harmful effects of air pollution have been tabulated below:

Economic effects	<p>(1) Leads to loss of labour productivity, GDP and per capita income levels. (The Confederation of Indian Industry estimates that air pollution costs Indian businesses \$95 billion, or 3 per cent of India's GDP every year). (Poor air amounts to about Rs 7 lakh crore of annual economic loss, which is more than a third of our annual GST collection)</p> <p>(2) Air pollution reduces agricultural crop yields and commercial forest yields.</p>
Human Health Effects	<p>(1) Air pollution leads to multiple health conditions including respiratory infections, heart disease and lung cancer.</p> <p>(2) As per the Global Burden of Disease comparative risk assessment for 2015, air pollution exposure contributes to approximately 1.8 million premature deaths and loss of 49 million disability adjusted life-years (DALYs) in India.</p>

Environment	<p>(1) Acid Rain: Damages crops, natural vegetation, soil chemistry and leads to damage to ancient monuments (Taj Mahal Yellowing).</p> <p>(2) Eutrophication of water bodies: Increases nitrogen intake of freshwater bodies leading to Eutrophication.</p>
-------------	--

What Govt initiatives have been taken to reduce air pollution in Delhi?

1. **Cloud Seeding (Artificial Rain):** Piloted with IIT Kanpur, three rounds were conducted in 2025 to temporarily reduce airborne particulate matter, although results were mixed due to weather constraints. The key reason for limited results was insufficient cloud moisture (only 15–20%), while successful cloud seeding typically requires 50% or more. High cloud bases (near 10,000 feet) also reduced effectiveness.
2. **Crop Residue Management Scheme:** Crop Residue Management (CRM) scheme which provides subsidy to farmers for buying 'Turbo Happy Seeder', 'Super SMS attachment', 'rotavators' and 'superseeder'.
3. **Commission for Air Quality Management (CAQM):** CAQM is a statutory body formed under the Commission for Air Quality Management in National Capital Region and Adjoining Areas, Act 2021. CAQM has provided a framework to tackle the problem of air pollution due to stubble burning.
4. **Initiatives to reduce Vehicular Pollution:** The **shift from BS-IV to BS-VI**, push for **Electric Vehicles (EVs)**, **Odd-even Policy** have all been implemented to reduce Vehicular pollution.
5. **Graded Response Action Plan (GRAP):** GRAP measures like shutting down thermal power plants and a ban on construction activities are implemented to curb air pollution.
6. **Dust and construction controls:** Mandatory deployment of anti-smog guns and water sprinklers at large buildings, construction sites, and hotspots; mist sprayers installed on electric poles at 13 major air pollution hotspots.

What should be the way ahead?

A start has been made to recognise the severity of air pollution on the health of the population and the economy. Delhi and Mumbai are the two financial backbones of our country. The following measures need to be undertaken to curb air pollution in Delhi and Mumbai:

1. **Increase the AQI monitoring stations:** The adequate numbers of AQI monitoring stations as mandated by the National Clean Air Programme (NCAP) must be installed. Also, **sensor based AQI monitoring units** that give hyperlocal data must be set up.
2. **Enhanced powers to the authorities to take action according to the hyperlocal data:** It will help the authorities take **pre-emptive actions** and allow **denser monitoring**. For example, if it is found that construction is taking place in a certain pocket without following norms, the authorities can identify the location and immediately penalise the violators.
3. **National Nodal Authority for Air pollution:** India needs a **nodal authority with constitutional powers** to ensure collaborative pre-emptive action on air pollution with timelines for all stakeholders.
4. **Setting up Independent commissions for management of AQI:** Independent commissions like the **Commission for Air Quality Management (CAQM) for NCR and adjoining regions**, should be set up in other major cities like Mumbai and Chennai. It will help in taking actions against the violators irrespective of the geographical region. **Regional or airshed approach** must be used to counter the geographical challenge to air pollution management as done in Los Angeles, Mexico City and many mega-urban regions in China.

5. Stricter guidelines for industrial emissions: **SEBI's Business Responsibility and Sustainability Report (BRSR) framework** can lay down tighter guidelines to ensure uniformity in the unit of reporting pollutant emissions, declaration of air pollution mitigation targets (like companies do for carbon emissions), and reporting of disaggregated emissions data. We must reduce exposure across the value chain from production to consumption to recycling of goods and delivery of services.
6. Making 'Clean air' an investment sector: The push for substitution of fossil fuels will increase investment opportunities in clean energy transition sector like **green mobility, clean cooking**. This will open up a new sector for investment and will help in reducing the air pollution simultaneously.
7. Funds and Manpower Training to combat pollution: The Sixteenth Finance commission should provide finance to urban local bodies for climate change and air pollution reduction interventions. The urban local bodies manpower must be properly trained and the dysfunctional **State pollution Control Boards** must be empowered to take punitive actions.
8. Increased awareness and incentive for civil society: Different stakeholders need to know why cleaning the air will benefit their livelihoods and businesses. For instance, **farmers will not curb stubble burning until a viable circular economy** for alternative uses of biomass emerges. We must adopt sustainable lifestyles which are in line with government's LiFE initiative.
9. Increased use of Public transport and reduced dependence on private vehicles: **The Delhi Master Plan target of 80 per cent of motorised trips** by public transport by 2020 has not been met yet. The deadline has been shifted to 2041. This deadline needs to be met by augmenting the public transport system. The private vehicles use must be disincentivized by introducing **ward-wise parking management area plans and parking tax**.
10. Limit crop residue burning: We must implement known solutions like shifting to less water-intensive crops, **altering irrigation arrangements**, timing, harvesting, baling practices and building a wider year-round market for straw.
11. End-to-end construction and waste management: It is pivotal to reducing tonnes of dust and waste released in the air and water bodies.
12. Learnings from London, China, Singapore, Hong Kong must be incorporated: London does not allow private vehicles in areas well-connected by public transport. China uses '**fixed number of car sales per year**' in Beijing. We must improve the public transport like London, China, Singapore and Hong-Kong.

Conclusion: Air pollution in Delhi is not caused by one single source — it is a result of vehicles, industries, construction dust, stubble burning, and weather conditions. Solving the crisis requires a coordinated effort from the central government, state governments, industries, and the public. Sustainable policies, technological solutions, and behavioral changes are essential to ensure cleaner air for the future.

Read More- [The Indian Express](#)

UPSC Syllabus- GS 3- Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

Digital Personal Data Protection Rules 2025- Explained Pointwise

The Union Government has recently notified the Digital Personal Data Protection Rules 2025 to provide necessary details and implementation framework of the Digital Personal Data Protection Act, 2023 (DPDP Act) 2023. The DPDP Act, 2023 (DPDP Act) had received the assent of the Hon'ble President on 11th August 2023.

Features of the Digital Personal Data Protection Act, 2023

1. Fairness- Organizations must use personal data in a way that is fair and transparent to the individuals involved.
2. Consent- Personal data can only be processed for a lawful purpose after the individual's consent is obtained.
3. Data protection- Individuals have the right to obtain information about how their data is processed, and request corrections or erasure.

Framework/Components of Digital Data Protection

1. Data principal- The individual whose personal data is being handled. For children, their parents or legal guardians are the data principals. For people with disabilities, their legal guardians are the data principals.
2. Data fiduciaries- The entity that determines how and why personal data is processed. It is also responsible for ensuring the data is accurate, secure, and is erased when it is no longer needed.
3. Data Protection Board (Board)- It functions as a digital office to oversee compliance and address grievances. The Act empowers Chairperson and Members to act on matters, with decisions made by majority vote.

Read More- [Digital Personal Data Protection Bill, 2023: Explained, pointwise](#)

What are the salient features of Draft Digital Personal Data Protection Rules 2025?

Notice to be given by Data Fiduciary to Data Principal	Data Fiduciaries must provide Data Principals with clear and understandable notices for informed consent. The Notices must include- a description of personal data being processed, the purpose and services associated with the processing, and details for withdrawing consent, exercising rights, or filing complaints.
Consent Management	Consent Requirements- Data processing requires prior, clear, and informed consent from Data Principals, which may be withdrawn at any time. Consent Manager Role- Consent Managers to facilitate granting, tracking, and withdrawal of consent.

Obligations of Data Fiduciaries	<p>Significant Data Fiduciaries (SDF): Additional obligations include-</p> <ul style="list-style-type: none"> a. Annual Data Protection Impact Assessments and audits. b. Ensuring algorithms do not harm Data Principals' rights. c. Restricting specific personal data transfers outside India. <p>General Obligations: Maintain transparency in processing activities. Publish terms of service and grievance redressal mechanisms.</p>
Rights of Data Principals	<p>Access and Erasure: Right to access personal data or request its erasure via mechanisms published by Data Fiduciaries.</p> <p>Grievance Redressal: Data Fiduciaries must respond to grievances within specified timeframes.</p> <p>Nomination: Data Principals can nominate individuals for exercising their rights in case of incapacity or death.</p> <p>Transparency: Fiduciaries must provide clear information about data collection, processing, and sharing practices.</p>
Processing of Personal Data Outside India	<p>Condition for Transfer</p> <ul style="list-style-type: none"> a. Transfers to foreign entities are subject to government-specified requirements. b. Restrictions apply to data critical for national interests, as determined by the government.
Processing by State for Subsidies and Benefits	<p>The State may process personal data under specific conditions for issuing subsidies, benefits, or services and must be linked to laws, policies, or public funds.</p>
Reasonable Security Safeguards	<p>Data Fiduciaries must take adequate security measures, including:</p> <ul style="list-style-type: none"> a. Encryption, obfuscation, and access control. b. Logs and monitoring to detect unauthorized access. c. Retention of logs and personal data for at least one year unless otherwise specified by law. d. Contractual safeguards when engaging Data Processors.
Personal Data Breach Intimation	<p>Data Fiduciaries must promptly inform affected Data Principals of breaches, detailing:</p> <ul style="list-style-type: none"> a. The nature, extent, and consequences of the breach. b. Steps taken to mitigate risks. c. Contact information for queries. <p>Breaches must also be reported to the Board within 72 hours or a longer period allowed.</p>

Erasure of Personal Data	<ul style="list-style-type: none"> a. Data Fiduciaries must erase personal data if the specified purpose is deemed no longer valid. b. Principals must be notified 48 hours before such erasure, allowing them to log in or otherwise interact to retain the data.
Consent for Data of Children or Persons with Disabilities	<ul style="list-style-type: none"> a. Fiduciaries must obtain verifiable consent from parents or lawful guardians before processing a child's data. b. Verification may involve identity checks through reliable details or tokens issued by authorized entities like Digital Locker service providers.
Government Powers	<ul style="list-style-type: none"> a. Information Requests- The government may request data from Fiduciaries for purposes listed in the Seventh Schedule. b. Restrictions on Disclosure- Fiduciaries must seek prior written approval before disclosing sensitive data in cases affecting sovereignty, security, or public order.

What are the advantages of the Digital Personal Data Protection Rules 2025?

The Digital Personal Data Protection Rules 2025 provide for a "LIGHT BUT TIGHT" framework.

L: Legal Certainty- Provides clear legal guidelines for businesses and individuals, reducing ambiguity and legal risks.

I: Increased Trust and Consumer Confidence- Builds trust between individuals and organizations by demonstrating a commitment to data privacy and security.

G: Global Competitiveness- Aligns with international data protection standards, facilitating cross-border data flows and fostering a competitive digital economy.

H: Harmonized Approach- Promotes consistency and predictability in data protection practices across different sectors and jurisdictions.

T: Technological Innovation- Drives innovation in privacy-enhancing technologies, such as data anonymization, differential privacy, and secure multi-party computation.

B: Business Benefits- Improves organizational security, reduces the risk of data breaches and their associated costs, and enhances brand reputation.

U: User Empowerment- Empowers individuals with control over their personal data, fostering a sense of agency and trust in the digital world.

T: Trustworthy Data Ecosystems- Fosters the development of trustworthy data ecosystems where data can be used responsibly and ethically for innovation and societal benefit.

T: Technological Advancement- Encourages the development of privacy-preserving technologies that enable innovation while respecting individual rights.

I: Improved International Relations- Facilitates smoother data flows and cooperation on data protection issues between countries.

G: Greater Global Interoperability- Enables seamless data flows across borders while ensuring adequate protection for individuals.

H: Harmonized Global Standards- Contributes to the development of harmonized global standards for data protection, reducing complexity for businesses operating internationally.

T: Thriving Digital Economy- Creates a level playing field for businesses, fostering innovation and competition in a data-driven economy.

What are the Challenges associated with this framework?

The rules does not provide for a "*NOT SO LIGHT*" framework.

N: New Technologies

a. Emergence of AI, IoT, and other disruptive technologies- These technologies present unique challenges for data protection, such as algorithmic bias, lack of transparency, and the potential for misuse.

b. Difficulty in keeping up with rapid technological advancements and agile and adaptable legal and regulatory framework.

T: Technological Limitations

a. Limitations of existing technologies- Challenges in implementing robust security measures to protect data from cyber threats like hacking, ransomware, and data breaches.

b. Difficulty in ensuring data privacy in decentralized environments like blockchain.

S: Social Impact

a. Digital Divide- Exacerbation of existing digital divides, impacting marginalized communities and limiting their access to digital services and opportunities.

b. Social Surveillance- Potential for misuse of data for mass surveillance and social control.

c. Impact on Human Rights- Potential for data protection measures to inadvertently restrict freedom of expression, association, and other fundamental rights.

O: Operational Challenges

a. Difficulties in implementing and enforcing data protection regulations within organizations.

b. Lack of awareness and training among employees on data protection best practices.

c. Challenges in identifying and mitigating data breaches effectively.

T: Transparency and Accountability

a. Lack of transparency in data processing practices, making it difficult for individuals to understand how their data is being used.

b. Difficulty in holding organizations accountable for data breaches and other violations of data protection laws.

I: International Cooperation

a. Challenges in coordinating data protection policies and enforcement across borders.

b. Navigating the complexities of international data transfers and compliance with foreign data protection laws.

G: Global Trends

a. Keeping pace with evolving global trends in data protection and adapting to international best practices.

b. Addressing the challenges posed by the increasing globalization of data flows.

H: Human Rights Considerations

Ensuring that data protection measures respect and protect fundamental human rights, including privacy, freedom of expression, and equality.

T: Trust and Confidence

Building and maintaining public trust in the data protection framework and the institutions responsible for its enforcement.

What Should be the Way Forward?

1. Awareness & Education- Continuously educate the public, businesses, and government officials on data protection rights, responsibilities, and best practices.

2. Data Protection Impact Assessments (DPIAs)- Promote the proactive use of DPIAs by organizations to identify and mitigate potential risks to privacy and data security.

3. Enforcement & Compliance- Robust enforcement mechanisms to ensure compliance with the DPDP Act. Strengthen the investigative and enforcement powers of the Data Protection Board, including the ability to impose meaningful penalties.
4. Quality Assurance- Ensure the quality and effectiveness of data protection measures through regular audits, inspections, and certifications. Develop and implement robust certification schemes for organizations that demonstrate compliance with data protection standards.
5. User-Centric Approach- Prioritize the needs and interests of individuals by empowering them with control over their personal data.
6. Adaptive Framework- The framework should be flexible and adaptable to the rapidly evolving digital landscape. Regularly review and update the DPDP Act and its implementing rules to address emerging challenges and technologies.
7. Technological Advancements- Leverage technology to enhance data protection, such as through the use of privacy-enhancing technologies like differential privacy and federated learning.
8. Evaluation & Continuous Improvement- Regularly evaluate the effectiveness of the DPDP Act and its implementation.

Read More- [The Hindu](#)

UPSC Syllabus- GS 2- Governance