

Prelims Exam Topics

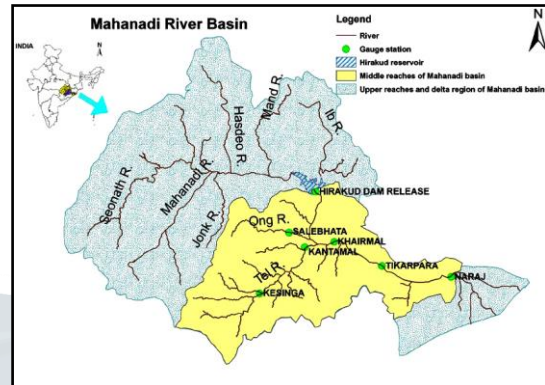
MAHANADI RIVER DISPUTE

Context

The Mahanadi Water Disputes Tribunal (MWDT) has issued a final warning to Odisha and Chhattisgarh to reach a mutual water-sharing consensus or face a judgment based on merits.

About Mahanadi river

- **Origin & Path:** Originates in the **Sihawa range** (Bastar Plateau, Chhattisgarh) and flows **851 km** to the Bay of Bengal via a massive delta in Odisha.
- **Tributaries:** Fed by the **Seonath, Hasdeo, Mand, and Ib** (left bank) and the **Ong, Tel, and Jonk** (right bank).
- **Hirakud Dam:** Located near Sambalpur, it is one of the **world's longest earthen dams**, supporting irrigation, power, and flood control.
- The delta sustains critical biodiversity zones, including the **Bhitarkanika Mangroves** and **Chilika Lake**.
- **Core Dispute:** Tension arises from Chhattisgarh's **500+ upstream barrages**; Odisha claims these structures reduce non-monsoon flow, threatening downstream agriculture and the Hirakud reservoir.



About Interstate Water Disputes Tribunals

- **Article 262 (Constitutional Basis):** Empowers Parliament to adjudicate disputes over interstate rivers and **exclude the jurisdiction** of the Supreme Court and other courts in these matters.
- **IRWD Act, 1956:** Provides the legal framework for the Center to establish a tribunal when a state request is made and negotiations fail.
- **Tribunal Composition:** Typically includes a Chairman and two members nominated by the **Chief Justice of India** from among Supreme Court or High Court judges.
- **Binding Authority:** Once published in the Official Gazette, a tribunal's decision carries the **same legal force as a Supreme Court decree**.

SHEKHA JHEEL BIRD SANCTUARY

Context

The Shekha Jheel Bird Sanctuary has been declared India's 99th Ramsar site.

About Sekha Jheel Bird Sanctuary

- **Location:** Aligarh, Uttar Pradesh.
- **Type:** Freshwater perennial wetland/jheel, linked to the Upper Ganga Canal system.
- **Significance:** Serves as a significant stopover for migratory birds (e.g., Bar-headed goose, Painted stork) and aids in groundwater recharge.

Ramsar Convention

Origin: An international treaty signed in **1971**, in the Iranian city of Ramsar; it came into force in **1975**.

Mandate: To promote the **conservation and "wise use"** of wetlands through local and national actions and international cooperation.

Global Reach: As of 2026, it involves **172 contracting parties** (including India, which ratified it in 1982) and protects over **2,500 sites** worldwide.

Ramsar site

- A "Ramsar Site" is a wetland designated as being of **international importance** based on specific ecological and biological criteria.
 - **Biodiversity Support:** The site must support vulnerable, endangered, or critically endangered species or threatened ecological communities.
 - **Waterbird Quantitative Criteria:** The wetland must regularly support **20,000 or more waterbirds**, or support **1% of the individuals** in a population of one species/subspecies of waterbird.
 - **Fish and Non-Avian Species:** Criteria also include supporting a significant proportion of indigenous fish species or **1% of a population** of wetland-dependent non-avian animal species.

MUSEUM OF JAIN HERITAGE

Context

The newly inaugurated Museum of Jain Heritage in Ahmedabad, Gujarat serves as a repository for the Shramana tradition.

ICore Traditions and Figures of Jainism

- **Shramana Tradition:** A non-Vedic, ancient Indian religious movement that operated parallel to the Vedic religion. It emphasizes self-reliance, asceticism, and the pursuit of liberation through personal effort rather than rituals.
- **Tirthankaras:** Meaning "Ford-makers," these are the 24 supreme teachers of Jainism who have conquered the cycle of death and rebirth.
 - **Rishabhanatha:** The first Tirthankara (symbolized by the Bull).
 - **Mahavira:** The 24th and final Tirthankara of the current era (symbolized by the Lion).
- **Kevala Jnana:** The state of absolute knowledge or omniscience. It is the highest form of perception, where a soul is liberated from all karmic obstructions.
- **Ahimsa (Non-violence):** The foundational ethical principle of Jainism, involving the total avoidance of harm to any living being (human, animal, insect, or microscopic) in thought, word, or deed.

Art, Iconography, and Literature

- **Pratima (Iconography):** The physical representation of a Tirthankara. In Jain art, they are depicted in two primary postures:
 - **Kayotsarga:** A standing meditative posture ("dismissing the body").
 - **Padmasana:** A seated lotus posture.

- **Lanchhanas:** Specific symbols carved at the base of a Tirthankara's statue to help identify them (e.g., the Serpent for Parshvanatha).
- **Ayagapatas:** Ancient "votive tablets" or ornamental slabs used for worship. These were common in the **Mathura School of Art** and often depicted the *Dharmachakra* or the *Ashtamangala* (eight auspicious symbols).
- **Kalpa Sutra & Bhagavati Sutra:**
 - **Kalpa Sutra:** A sacred text detailing the biographies of the Tirthankaras.
 - **Bhagavati Sutra:** One of the most important *Agamas* (canonical texts), covering a wide range of philosophical questions and historical records.

Metaphysical and Ethical Frameworks

- **Anekantavada:** The doctrine of "non-absolutism" or "many-sidedness." It suggests that truth and reality are complex and have multiple aspects; no single point of view can capture the total truth.
- **Syadvada:** The logic of "conditional predication." It complements Anekantavada by using the qualifier "*Syat*" (perhaps/maybe) to signify that every statement is true only from a certain perspective.
- **Pancha Mahavratas:** The five "Great Vows" required for spiritual liberation:
 1. **Ahimsa:** Non-violence.
 2. **Satya:** Truthfulness.
 3. **Asteya:** Non-stealing.
 4. **Brahmacharya:** Chastity.
 5. **Aparigraha:** Non-attachment/Non-possession.

Regional Sects & Sites

- **Digambara** (Sky-clad) and **Shvetambara** (White-clad).
- **Palitana & Girnar:** * **Palitana (Shatrunjaya Hill):** Considered the most sacred pilgrimage site for Shvetambaras, featuring over 800 marble temples.
 - **Girnar:** Sacred to both sects, particularly associated with the 22nd Tirthankara, **Neminatha**.

Mains Exam Topics

UNEVEN ACCEPTANCE OF BIOTECHNOLOGY

Context

- Biotechnology is rapidly transforming sectors like healthcare, agriculture and industry, yet societies show **uneven acceptance—embracing gene therapy while resisting GM crops**

Potential of Biotechnology

- **Healthcare Revolution:** Enables treatment of genetic and chronic diseases through **gene therapy, CAR-T cell therapy and biologics**, improving survival. (e.g. sickle-cell disease, cancer immunotherapy).
- **Pharmaceutical Innovation:** Production of drugs like **insulin, vaccines and monoclonal antibodies** using recombinant DNA technology ensures cost-effective healthcare solutions.
- **Agriculture & Food Security:** GM crops provide **pest resistance, higher yield and climate resilience**, helping tackle hunger and climate stress (e.g. Bt cotton, drought-resistant crops).
- **Industrial Biotechnology:** Synthetic biology enables production of **biofuels, chemicals and enzymes**, reducing dependence on fossil fuels and supporting the green economy.
- **Environmental Applications:** Use of microbes for **bioremediation, waste management and carbon capture**, addressing pollution and sustainability challenges.
- **Emerging Areas:** Advanced tools like **CRISPR gene editing, synthetic biology and bio-manufacturing** are expanding possibilities in personalised medicine and materials science.

Differential Acceptance of Biotechnology

- **Healthcare (High Acceptance):** Widely accepted due to **direct life-saving benefits and patient demand**, with minimal ethical resistance for somatic therapies.
- **Industrial Biotech (Moderate Acceptance):** Accepted as benefits are indirect but proven (e.g. vaccines, insulin), though concerns remain about cost and access.
- **Agriculture (Low Acceptance):** GM crops face societal resistance due to perceived environmental risks and corporate dominance, despite scientific validation.
- **Germline Editing (Highly Restricted):** Strongly opposed globally due to **ethical concerns and irreversible genetic changes across generations**.

Reasons for Divergence

- **Perceived Risk vs Benefit:** Technologies with **immediate personal benefits (healthcare)** are accepted, while those with **diffuse or long-term risks (agriculture)** face resistance.
- **Ethical Concerns:** Germline editing raises issues of **“playing God”, genetic inequality and intergenerational impact**.
- **Environmental Concerns:** Fear of **biodiversity loss, monoculture and ecological imbalance** drives opposition to GM crops.
- **Market & Corporate Control:** Concerns over **patents, seed monopolies and farmer dependency** influence resistance in agriculture.
- **Information & Awareness Gap:** Lack of scientific understanding leads to **misconceptions and precautionary attitudes**.

- **Historical & Cultural Factors:** Societal values and past experiences shape acceptance differently across regions.

Regulatory Challenges

Issues of Over-Regulation

- **Innovation Slowdown:** Strict approvals delay breakthroughs
 - E.g. delays in approval of GM crops like Bt brinjal in India despite scientific clearance).
- **Economic Loss:** Leads to dependence on foreign technologies
 - E.g. India imports GM soy-based animal feed while restricting domestic GM crop cultivation).
- **Discourage innovation:** Encourages imitation over innovation
 - E.g. success largely restricted to Bt cotton, with slow progress in other GM crops).
- **Policy Complexity:** Frequent regulatory changes discourage investment
 - E.g. ambiguity around gene-editing (SDN-1/SDN-2) approvals affecting biotech startups)
- **Global Lag:** India risks falling behind in emerging areas
 - E.g. slower adoption of CRISPR-based crops compared to China and the U.S.).

Issues of Under-Regulation

- **Safety Risks:** Weak oversight can allow harmful outcomes
 - E.g. reports of illegal HT Bt cotton cultivation in some states
- **Ethical Concerns:** Misuse of technology without safeguards
 - E.g. concerns around unregulated human gene-editing research in private labs)
- **Public Trust Deficit:** Failures reduce confidence in science
 - E.g. protests and controversies around GM mustard trials).
- **Market Instability:** Lack of clear rules discourages long-term investment
 - E.g. biotech firms hesitant due to unclear approval pathways for new crops.
- **Environmental Risks:** Potential unintended ecological impacts
 - E.g. concerns over monoculture and biodiversity loss linked to GM crop expansion).

Implications for India

- **Biotech Opportunity Hub:** India has strong potential with **large biodiversity, skilled workforce and growing biotech sector**, but needs scale and innovation.
- **Agriculture vs Healthcare Divide:** While India adopts **biotech in healthcare**, it remains cautious in agriculture (e.g. GM crop restrictions), limiting productivity gains.
- **Global South Leadership:** India can position itself as a **balanced model combining innovation with ethical safeguards**.
- **Economic Potential:** Biotechnology can drive **jobs, exports and industrial growth**, especially in pharmaceuticals and bio-manufacturing.

Way Forward

- **Balanced Regulatory Framework:** Develop **risk-based, enabling regulations** that promote innovation while ensuring safety.

- **Public Awareness & Engagement:** Improve **science communication** to address misconceptions and build trust in biotechnology.
- **Boost R&D Investment:** Strengthen funding in **genomics, synthetic biology and agricultural biotech**.
- **Encourage Private Sector Participation:** Promote **startups, industry-academia collaboration and FDI** in biotech sectors.
- **Sector-Specific Policies:** Differentiate regulation for **healthcare, agriculture and industrial biotech** based on risk profiles.
- **Global Collaboration:** Engage in **international research partnerships and standard-setting frameworks**.
- **Ethical Governance:** Ensure strong oversight for sensitive areas like **gene editing and germline modification**.

Biotechnology holds transformative potential, but its future depends on resolving the paradox of **uneven societal acceptance through balanced regulation, awareness and innovation-driven policies**, especially for countries like India aiming for global leadership.

POST LEFT WING EXTREMISM (LWE) TRANSFORMATION

Context

- With the sharp decline of Left Wing Extremism after years of security operation the challenge now shifts to **converting security gains into long-term peace**.

Decline of LWE

- **Reduction in Violence:** LWE incidents and fatalities have sharply declined due to sustained operations
- **Geographical Shrinkage:** The Red Corridor has reduced from multiple states to limited pockets
 - E.g. now largely confined to Bastar (Chhattisgarh), parts of Jharkhand and Maharashtra).
- **Decline in Local Recruitment:** Local support has weakened significantly
 - E.g. Only a few local recruits remain while the majority are declining with shrinking grassroots support base.
- **Improved State Presence:** Expansion of governance infrastructure has reduced insurgent space
 - E.g. roads, telecom towers and banking access in Sukma–Bijapur belt.



Strategy Adopted by the Government

- **Security-Centric Operations:** Coordinated operations by central and state forces (e.g. CRPF, COBRA forces) focused on **area domination, intelligence-based strikes and leadership targeting.**
- **SAMADHAN Doctrine:** Multi-pronged strategy focusing on intelligence, technology and coordination
 - E.g. use of drones, actionable intelligence and KPI-based monitoring.
- **Development Initiatives:** Implementation of schemes like Integrated Action Plan and Aspirational Districts.
 - E.g. infrastructure and welfare push in Malkangiri, Odisha
- **Infrastructure Expansion:** Building **roads, telecom towers, schools and health centres** to improve state reach
 - E.g. road connectivity projects in Sukma and Gadchiroli opening remote areas.
- **Youth Engagement & Capacity Building:** Sports and education used as tools of integration
 - E.g. Simdega hockey academy producing Salima Tete and footballer Mamta Hansda.
- **Centre-State Coordination:** Joint planning across political lines ensured effectiveness.
 - E.g. coordinated operations across Chhattisgarh, Jharkhand and Odisha.

Limits of Security-Centric Approach

- **Temporary Suppression:** Security operations reduce violence but do not address root causes.
 - E.g. earlier gains in Jungle Mahal saw relapse when governance lagged.
- **Legitimacy Deficit:** Excessive reliance on force may weaken **trust between state and local communities**, especially tribal populations.
 - E.g. tribal communities in Bastar historically caught between Maoists and state forces.
- **Governance Gaps:** Areas cleared of insurgents often still lack **sustained administrative presence and service delivery.**
 - E.g. remote villages in Abujhmad still face limited healthcare and schooling.

- **Risk of Relapse:** Without socio-economic transformation, there is risk of **re-emergence of insurgency in neglected regions**.
 - E.g. resurgence phases seen in parts of Jharkhand in past cycles.
- **Human Rights Concerns:** Security operations sometimes raise concerns about **civil liberties and excesses**, affecting state legitimacy.
 - E.g. debates over encounters and arrests in LWE regions.

Structural Challenges in LWE-Affected Regions

- **Historical Marginalisation:** Tribal communities face long-term neglect (e.g. low Human Development Indicators in Bastar, Simdega).
- **Resource Curse:** Mineral-rich areas see extraction without local benefit, creating resentment. (e.g. mining belts of Jharkhand and Chhattisgarh).
- **Weak Governance Infrastructure:** Limited access to services (e.g. lack of schools, banks and PHCs in interior forest areas).
- **Livelihood Insecurity:** Lack of jobs leads to vulnerability (e.g. dependence on minor forest produce without value addition).
- **Trust Deficit:** Communities caught between state and insurgents (e.g. fear of both Maoist retaliation and police action).
- **Justice Deficit:** Delays in rights and legal processes (e.g. pending Forest Rights Act claims, undertrial tribal prisoners).

Framework for Post-LWE Transformation

- **Community-Centric Economy:** Shift towards **local value economies** ensuring community ownership and benefits.
 - E.g. forests produce value chains like tendu leaves, lac processing; eco-tourism in Bastar.
- **Sustained Governance Presence:** Ensure continuous service delivery (e.g. roads, schools, anganwadi centres and banking in remote blocks).
- **Rights-Based Approach:** Strengthen land and forest rights treating citizens as stakeholders, not beneficiaries (e.g. implementation of Forest Rights Act and Tribal Sub Plan funding).
- **Integrated Policy Framework:** Focus on **Accountability, Innovation, Evidence, Equity, Empathy and Efficiency (AIEEEE)** for governance transformation.
- **Convergence of Schemes:** Align programmes like **Aspirational Districts, PM-JANMAN, Tribal Sub Plan** for last-mile delivery.
- **Youth & Aspirations:** Promote **education, sports, skilling and entrepreneurship** to channel youth aspirations (e.g. sports success like Simdega hockey, expansion to skilling and entrepreneurship).
- **Justice & Trust Building:** Ensure humane policing and grievance redress (e.g. faster case disposal and legal aid for tribal communities).

India's success in reducing LWE marks a critical transition, but long-term peace depends on **moving from security dominance to inclusive governance, rights-based development and trust-building**, ensuring these regions become growth centres rather than conflict zones.

TOBACCO AND POVERTY IN INDIA

Context

A study in BMJ Global Health by researchers from ICMR-NICPR and TISS highlights the economic toll of tobacco use in India. It estimates that nearly one in ten households could move into a higher income category if tobacco consumption were eliminated, underlining its role as a significant financial drain.

Key data

- Approximately 20.49 million households (10.6%) have the potential to improve their economic standing by giving up tobacco.
- Among the poorest sections, about 6.4% of monthly income is spent on tobacco products.
- Around 5.62 million of the poorest households (12.4%) could rise out of poverty entirely by quitting tobacco.
- The impact is more pronounced in rural areas, with nearly 17 million households having upward mobility potential compared to 3.5 million in urban regions.
- Overall, the scope for economic improvement in rural India is about 60% greater than in urban areas.
- India has an estimated 267 million tobacco users.
- Tobacco-related illnesses account for roughly 1.35 million deaths each year.

Key findings of the study

- **Economic Mobility:** The research shows that tobacco purchases take up a notable portion of disposable income in low- and middle-income households. Eliminating this expense could help many families climb at least one level in the economic hierarchy.
- **Crowding-Out Effect:** Spending on tobacco often displaces essential expenses. Compared to similar-income non-users, tobacco-consuming households typically allocate less money to items like milk, vegetables, and education.
- **The Poverty Trap:** Frequent tobacco use is closely linked with rising medical costs from related illnesses, creating a cycle where health expenses and debt reinforce each other.

The Multi-Dimensional burden of tobacco

- **Healthcare Costs:** Beyond the purchase price, tobacco leads to substantial financial strain through the treatment of conditions such as cancer, heart disease, and respiratory disorders, often resulting in severe out-of-pocket expenses.
- **Loss of Productivity:** Illness and early death caused by tobacco reduce household income, especially when the primary earner is affected, pushing families deeper into financial distress.
- **Impact on Human Capital:** When money is diverted from education and nutrition toward tobacco, it weakens the long-term earning capacity of the next generation.

Challenges in tobacco control

- **Affordability and Accessibility:** Even with taxes, products like bidis and smokeless tobacco remain inexpensive and widely available, particularly for low-income groups.
- **Social Acceptance:** In many rural and disadvantaged communities, tobacco use is socially normalized, making it difficult to shift behavior.

- **Influence of the Industry:** The sector contributes significantly to employment and government revenue, which can complicate stricter regulatory efforts.

Way forward

- **Taxation as a Tool:** Raising taxes across all tobacco products in line with global health recommendations can reduce affordability, particularly among youth and low-income users.
- **Integrated Health Programs:** Incorporating cessation services into primary healthcare and maternal-child health initiatives can expand reach among vulnerable populations.
- **Awareness Campaigns:** Messaging should emphasize the financial gains of quitting, positioning tobacco control as a pathway to economic empowerment, not just improved health.
- **Support for Substitutes:** Improving access to nicotine replacement therapies and counseling through public health systems can make quitting more achievable.

WHY WOMEN'S RESERVATION ALONE IS NOT ENOUGH

Context

Women's reservation in legislatures is often seen as a historic corrective to gender imbalance in politics. India, for instance, has one of the largest democratic electorates with high female voter participation, yet women's representation in the Lok Sabha has hovered around 14–15% (2024)

Core argument

Reservation acts like an entry pass to a high-stakes arena. It gets women inside the stadium, but does not guarantee they get to play the match, call the shots, or change the scoreboard. Substantive empowerment requires capacity, autonomy, and structural change beyond quotas.

Key limitations of Women's reservation

- **Persistence of Patriarchal Control:** Power: In many cases, elected women representatives operate under the shadow of male relatives or local elites. This phenomenon, often termed "proxy representation," is widely documented in local governance.
 - **Eg: A study by the Ministry of Panchayati Raj** found that in several states, women sarpanches were informally replaced by "sarpanch pati" (husbands acting as de facto decision-makers)
- **Lack of Political support:** Reservation does not automatically equip women with the skills needed to navigate politics.
 - **Eg: According to UNDP reports,** women candidates often face deficits in:
 - Legislative knowledge
 - Public speaking and negotiation skills
 - Campaign management
- **Structural Barriers Remain Intact:** Even with reservation, the political ecosystem itself remains skewed as political parties act as gatekeepers. Women receive only 8–10% of total party tickets in major elections.
 - **Eg:** Despite decades of advocacy, no major national party consistently fields more than one-third women candidates voluntarily.
- **Risk of Tokenism:** Reservation can sometimes create symbolic representation rather than substantive change.

- **Eg: A report by the Inter-Parliamentary Union** notes that higher representation does not always translate into gender-sensitive policymaking.
- **Intersectional Inequalities Ignored:** Women are not a uniform category. Social hierarchies shape access to power.
 - **Eg: Data from Oxfam** shows that marginalized women (Dalit, Adivasi, rural) face compounded barriers.
- **Political Party Dynamics:** Parties decide who contests and who wins. Without internal reform, reservation becomes a surface-level fix.
- **The Invisible Cage:** Deep-rooted gender norms discourage women from entering politics.
 - **Eg:** According to Pew Research Center surveys, a significant share of Indians still believe men make better political leaders.

Way forward

- **Capacity Building:** Structured training programs can transform participation into leadership.
 - Leadership academies, governance workshops, and mentorship networks can bridge skill gaps.
- **Political Party Reforms:** Mandating internal party quotas and transparent candidate selection can deepen inclusion.
- **Ensuring Autonomy:** Legal and institutional safeguards are needed to prevent informal power capture.
- **Addressing Social Norms:** Long-term change requires shifting mindsets through education and media.
- **Intersectional Approach:** Reservation must account for caste, class, and regional disparities.