

The Hindu Important News Articles & Editorial For UPSC CSE

Wednesday, 02 April, 2025

Edition: International Table of Contents

<p>Page 01 Syllabus : GS 3 : Enviroment and Ecology</p>	<p>Maharashtra Pollution Control Board does not accept that waterbodies are dying, says fishing community</p>
<p>Page 04 Syllabus : GS 2 : International Relations</p>	<p>Xi Jinping calls for 'elephant-dragon duet' on 75th anniversary of ties between India, China</p>
<p>Page 10 Syllabus : GS 3 : Enviroment and Ecology</p>	<p>Why India needs to clean its air</p>
<p>Page 11 Syllabus : GS 2 : International Relations</p>	<p>The radical and enduring legacy of Shivaji</p>
<p>Page 15 Syllabus : GS 3 : Science and Technology</p>	<p>CERN reveals plan for Large Hadron Collider's successor</p>
<p>Page 08 : Editorial Analysis: Syllabus : GS 2 : Social Justice</p>	<p>India's educational transformation — the true picture</p>

Traditional fishing communities in Navi Mumbai allege severe industrial pollution in water bodies like Diwale and Nhava Sheva creeks.

- Despite visible ecological damage and high levels of pollutants found in independent lab tests, the Maharashtra Pollution Control Board (MPCB) denies that the water bodies are "dying."

Maharashtra Pollution Control Board does not accept that waterbodies are dying, says fishing community

Purnima Sah
MUMBAI

Following the February 2 report in *The Hindu* on 'Industrial pollution kills marine life in Navi Mumbai, traditional fishermen to move High Court', the Maharashtra Pollution Control Board (MPCB) on February 6, conducted a field visit to Diwale creek in Navi Mumbai to assess the condition of the water body. During the visit, officials also collected water samples to test in a laboratory.

On March 4, results of the MPCB lab test on water samples collected from the creek showed suspended solids at 62 mg/l (milligrams per litre), biochemical oxygen demand (BOD) at 20 mg/l, chloride at 11796.34 mg/l, chemical ox-



The water bodies are home to marine life, migratory birds and the only livelihood option for traditional fishermen. FILE PHOTO

xygen demand (COD) at 236 mg/l, dissolved oxygen at 6 mg/l, and oil and grease were found below the detectable limit. The report also showed total alkalinity at 258 mg/l, nitrate nitrogen at 4.79 mg/l, and total phosphate at 1.58 mg/l.

Following the MPCB's report, the members of Mah-

arashtra Small Scale Traditional Fish Workers Union through Atlas Lab on March 24, 2025, conducted another lab test, in Diwale and Nhava Shewa creek, the report of which appeared on March 29, 2025. The test reports revealed that the appearance of the water samples was grey in colour with suspended particles (solid

materials that do not dissolve in water).

The total dissolved solids were found 20998 mg/l whereas, the requirement is maximum 2100 mg/l. The COD was found to be 6361 mg/l whereas the maximum requirement is 250 mg/l. BOD was reported 2140 mg/l whereas the maximum requirement is just 20 mg/l. Fecal coliform (a sign of fecal contamination and a possible risk of waterborne illnesses) found was 2675 MPN (most probably number) per 100 ml whereas it should not exceed 1000.

No response

MPCB officials did not respond to the differences in the report.

The water bodies that are home to marine life, mi-

gratory birds and the only livelihood option for the traditional fishermen for generations, have turned black and left with only dead marine life.

Members of Maharashtra Small Scale Traditional Fish Workers Union wrote to the State government, fisheries department, environment department, Konkan and Raigad district administration numerous times raising the concerns of dead marine life but in vain.

Nandakumar Waman Pawar, environmentalist and president of the organisation said, "As per MPCB, there is no existence of any industrial pollution in the Diwale creek, but it is the other way around. MPCB refuses to accept that the water bodies are dying."

Key Environmental Concerns:

1. High Levels of Pollutants Found:

Independent tests conducted by the Maharashtra Small Scale Traditional Fish Workers Union reveal:

Parameter	Standard Limit	Actual (March 2025 Report)
Total Dissolved Solids (TDS)	≤ 2100 mg/l	20998 mg/l

Chemical Oxygen Demand (COD)	≤ 250 mg/l	6361 mg/l
Biochemical Oxygen Demand (BOD)	≤ 20 mg/l	2140 mg/l
Fecal Coliform	≤ 1000 MPN/100ml	2675 MPN/100ml

These extremely high pollutant levels indicate industrial effluents, untreated sewage, and biological contamination, posing serious threats to marine life and public health.

2. Ecological and Livelihood Impact:

- Water bodies have turned black; marine life is dying.
- These creeks are critical habitats for migratory birds, fish, and support traditional fishermen who rely solely on these ecosystems.

Governance and Institutional Issues:

Lack of Acknowledgment by MPCB:

- MPCB denies evidence of pollution despite lab results.
- No official response to discrepancies between its report and that of the fishers' independent tests.
- Reflects weak accountability and environmental governance.

Ignored Local Voices:

- Repeated representations by the Fish Workers' Union to the State government and environmental agencies have gone unanswered.
- Highlights lack of participatory governance and marginalization of traditional communities.

Constitutional and Legal Dimensions:

- Article 21: Right to life includes the right to clean environment.
- Water Pollution (Prevention & Control) Act, 1974: Empowers Pollution Control Boards to monitor and act against water pollution.
- Environmental Impact Assessment (EIA) and Coastal Regulation Zone (CRZ) norms exist to prevent such degradation, but seem poorly enforced.

Broader Issues Highlighted for UPSC:

1. Environmental Injustice: Marginal communities like traditional fishers are disproportionately affected.

2. Breakdown of Environmental Monitoring: Inconsistencies in state reporting question the integrity of regulatory institutions.
3. Lack of Inter-Departmental Coordination: Fisheries, environment, and local administration appear disconnected.
4. Citizen Science vs. State Data: Increasing reliance on community-based environmental monitoring due to loss of faith in government institutions.

Way Forward:

1. Third-Party Environmental Audits should be mandated in ecologically sensitive zones.
2. Strengthening Pollution Control Boards with transparency and accountability measures (like public access to reports).
3. Community Involvement in Monitoring and grievance redressal mechanisms.
4. Judicial Oversight through environmental courts or NGT in pollution cases.
5. Protecting Traditional Livelihoods through compensation, ecosystem restoration, and strict enforcement of CRZ rules.

UPSC Mains Practice Question

Ques :The denial of ecological degradation by environmental regulators reflects deeper governance failures.” In light of recent incidents in Maharashtra’s coastal areas, critically examine the role of pollution control bodies and suggest reforms.

On the occasion of the 75th anniversary of diplomatic ties between India and China, leaders of both nations exchanged formal messages.

- Chinese President Xi Jinping proposed an “elephant-dragon duet” symbolizing cooperative coexistence.
- Indian President Droupadi Murmu emphasized the need for stable, predictable, and amicable bilateral ties.

Xi Jinping calls for ‘elephant-dragon duet’ on 75th anniversary of ties between India, China

Dinakar Peri
NEW DELHI

Commemorating the 75th anniversary of the establishment of India-China bilateral relations, Chinese President Xi Jinping in a congratulatory message to President Droupadi Murmu on Tuesday said the two countries should “realise a cooperative *pas de deux* of the dragon and the elephant”, which completely serves the fundamental interests of the two countries and peoples.

Ms. Murmu, in her message, said that “stable, predictable and amicable” bilateral relations will bring benefits to both nations and the world.

Later in the day, speak-



Vikram Misri and Xu Feihong at an event organised by the Chinese Embassy in New Delhi on Tuesday. DINAKAR PERI

ing at a commemorative event organised by the Chinese Embassy, Foreign Secretary Vikram Misri said it is “our wish and desire” to use this occasion as an opportunity to “rebuild” India-China relations.

Chinese envoy Xu Fei-

hong said in his speech that Mr. Xi emphasised that both sides should view and handle China-India relations from a “strategic and long-term perspective, and seek ways for neighbouring major countries to get along in peaceful coex-

istence, mutual trust and mutual benefit as well as common development”.

Mr. Misri, who has served as India’s envoy in Beijing, said the bilateral relationship is an important one as two large neighbours in an important part of the world, and the stable ties between the two countries would contribute to humanity as a whole. In this regard, he said the durable basis for rebuilding the ties is the three-point pillar of “mutual respect, mutual sensitivity and mutual interests”.

“The path forward maybe a difficult one, but it is one that we are prepared to work. And it is on the basis of these steps that we have already taken in the

last five months that we have seen promising beginnings, which we should turn into tangible benefit for the people of our two countries,” he said.

Mr. Xi termed India and China “ancient civilisations, major developing countries and important members of the Global South”, and noted that both countries are at a critical stage in their respective modernisation drive.

According to the envoy, Mr. Xi expressed his readiness to work with Ms. Murmu to promote strategic mutual trust, deepen communication and “coordination on major international affairs, jointly safeguard peace and tranquillity” in border regions.

Key Highlights of the Event:

“Elephant-Dragon Duet”:

- A metaphor used by Xi Jinping, calling for peaceful cooperation between two civilizational powers – India (elephant) and China (dragon).
- Advocates mutual trust, peaceful coexistence, and developmental partnership.

India's Diplomatic Standpoint (Vikram Misri):

- Expressed willingness to rebuild the relationship, while recognizing current complexities.
- Proposed a three-point framework for stable relations:
 1. Mutual Respect
 2. Mutual Sensitivity
 3. Mutual Interests

China's Messaging:

- Stressed on strategic and long-term vision.
- Invited India to deepen coordination in international affairs, especially as members of the Global South.
- Mentioned readiness to safeguard border peace and tranquillity.

Strategic and Diplomatic Significance:

1. 75 Years of Diplomatic Relations:
 - Diplomatic relations were established in 1950, making India one of the first non-communist nations to recognize the PRC.
 - Despite major setbacks (e.g., 1962 war, border standoffs), dialogue channels have persisted.
2. Border Tensions Remain the Elephant in the Room:
 - The 2020 Galwan Valley clash marked a turning point, severely straining bilateral ties.
 - Disengagement in certain sectors has occurred, but LAC tensions and trust deficit remain.
3. Economic Interdependence:
 - Despite political differences, China is one of India's largest trading partners.
 - However, the trade imbalance heavily favors China, prompting concerns on economic sovereignty.
4. Global South Leadership:
 - Both nations present themselves as voices of the developing world, but often compete for leadership in platforms like BRICS and SCO.
5. Geopolitical Divergence:
 - India's growing closeness to QUAD, and China's "no limits" partnership with Russia, add to the complexities.
 - Divergence in Indo-Pacific strategies, technological decoupling, and multilateral alignments persist.

Challenges in Rebuilding Relations:

Challenge	Explanation
Border Disputes	Unresolved LAC demarcation and regular standoffs
Trust Deficit	Military build-up, surveillance, cyber threats
Trade Imbalance	Over-dependence on Chinese imports
Multilateral Rivalry	Conflicting roles in the Global South and Indo-Pacific
Public Sentiment in India	Strong anti-China perception post-Galwan

Opportunities Ahead:

1. **Climate Cooperation:** Both are major carbon emitters and can collaborate on sustainable development.
2. **Multilateral Forums:** BRICS, SCO, and G20 platforms offer avenues for dialogue.
3. **Cultural Diplomacy:** Ancient civilizations with shared historical ties – potential for people-to-people contact.
4. **Economic Diversification:** Scope to redefine trade ties in areas like pharma, green energy, and AI.

Way Forward:

- Border peace is a prerequisite to normalized ties – trust-building at the LAC is essential.
- Need for structured dialogue mechanisms to avoid crises escalation.
- Pursue a balanced China policy: engagement on global issues, firm on sovereignty and security.
- Encourage Track II diplomacy and cultural exchange to reduce hostility at the societal level.

UPSC Mains Practice Question

Ques :India–China relations are marked by both cooperation and conflict. In light of the 75th anniversary of bilateral ties, critically examine the opportunities and challenges in rebuilding a stable relationship. **(250 words)**

India faces a **chronic air pollution crisis** that goes beyond seasonal smog episodes. Despite initiatives like the **National Clean Air Programme (NCAP)**, PMUY, and vehicle emission controls, the **progress remains slow, fragmented**, and disconnected from ground realities.

Why India needs to clean its air

India's clean air future will be shaped not by dashboards but by people, partnerships, and purpose. Lasting solutions depend on those working on the ground: municipal officers, planners, engineers, and community leaders

FULL CONTEXT

Ajay Singh Nagpure

India's air pollution crisis is not just a seasonal inconvenience. It's a persistent, silent pandemic that chokes our lungs every winter and quietly lingers throughout the year. Hospitals overflow with respiratory cases, schools shut down, cities disappear under layers of smog, and Indian metros regularly top global pollution rankings. Given the scale of this crisis, it's worth asking: what is India actually doing to clean its air? While initiatives like the National Clean Air Programme (NCAP), Bharat VI, the Pradhan Mantri Ujjwala Yojana (PMUY), and targeted efforts to phase out coal-burning industries in the National Capital Region mark important progress, the national response remains fragmented and slow-moving. Without stronger alignment and faster implementation, transformative change may remain out of reach.

Tuning in to ground realities

The challenge begins with how India understands air pollution. It's often seen as a technical problem when in reality it's a complex structural issue shaped by governance capacity, demographic pressure, socio-economic disparity, behavioural norms, and entrenched economic systems. Scientists play a vital role in diagnosing air quality – like physicians identifying symptoms – but lasting solutions depend on those working on the ground: municipal officers, planners, engineers, and community leaders. These actors operate within tight budgets, outdated infrastructure, and competing local demands. Strengthening their capacity and aligning mandates with air quality goals is essential for sustained change.

This complexity becomes especially relevant when considering India's goal to reduce PM_{2.5} levels by 2026 to 40% of what it was in 2017. While ambitious and necessary, the target risks falling short if it isn't mindful of on-ground realities. Consider transportation, for instance. It's not enough to say "vehicles cause pollution." We need to ask: what types of vehicles are on the road? What fuel do they use? How old are they? How far do they travel? How bad is traffic? Without this level of detail, it's difficult to craft realistic, actionable plans for local governments. To turn national goals into real progress, we must connect them to the everyday activities that actually drive emissions.

Proactive programs

While China is often called a success story, it came at a steep price – ₹22 lakh crore over five years for urban centres. India's NCAP budget is less than 1% of that. However, if we include allied programs like PMUY (₹18,128 crore), the program for Faster Adoption and Manufacturing of Electric Vehicles in India or FAME II (₹10,795 crore), Swachh Bharat Mission-Urban (₹14 lakh crore), and NCAP itself (₹1,542 crore), a broader ecosystem of air quality financing becomes apparent. They target emission sources and deserve recognition as part of India's clean air strategy.

The NCAP continues to struggle with how its funds are allocated and how progress is measured. It relies heavily on ambient air quality data, which is often affected by weather and geography, making short-term improvements hard to detect. For example, initiatives like PMUY and waste-burning controls have reduced



For a clear future: An anti-smog gun spraying water to fight air pollution and dust at Kartavya Path, New Delhi on March 31. SHIV KUMAR PUSHPAKAR

emissions in several areas, but these gains may not reflect in pollution readings, creating a misleading sense of stagnation. Shifting to activity-based metrics – such as the number of stoves replaced or diesel buses retired – would offer a clearer picture of impact and strengthen accountability.

Realigning metrics alone isn't enough. Local governments also need access to high-resolution, open-source data on emissions-generating activities: where waste is burned, which households use solid fuels, where construction is active, and which roads face the heaviest traffic. Without such data, air pollution remains an abstract issue, disconnected from daily governance. This data gap directly affects how NCAP funds are used. Between 2019 and 2023, only 60% of the funds released were utilised, reflecting not a lack of intent but institutional misalignment. Air quality continues to be treated as a parallel concern rather than a core municipal function.

To shift from intent to impact, India needs a phased, data-driven approach. Phase I: build local emissions profiles to identify the biggest pollution sources; Phase II: link funding directly to targeted actions based on that data; and Phase III: track reductions in emissions, not just pollution concentrations, to measure real

progress. This shift from passive monitoring to proactive management mirrors how meaningful change happens on the ground.

Guarding against optics

However, as India adopts more digital tools, it must avoid falling into the "Western trap" – overreliance on high-tech, urban-centric data and solutions without addressing basic pollution sources. Smog towers, real-time apportionment, and AI dashboards may appear innovative but offer little value if burning biomass and the use of old industrial processes and polluting vehicles go unchecked. Cities like London and Los Angeles rolled out advanced sophisticated technologies only after decades of systemic reform. India must sequence its strategies correctly.

This misalignment also risks elite capture. Urban hubs may get cutting-edge tools while rural and informal sectors – responsible for a large share of emissions – are neglected. Worse, these tools may distract from structural reforms, shifting attention to optics over outcomes. More data does not equal more action if local agencies lack authority or the resources to use it.

A key fix is distinguishing between academic research and solution-focused

implementation. While long-term innovation is important, policymakers need short-term, scalable models they can act on. India must create separate funding streams: one for research and another for immediate, on-ground interventions. Otherwise, we risk producing more papers than progress.

What are other countries doing?

Global examples offer guidance without imitation. China closed coal plants. Brazil used community-led waste systems. California reinvested pollution revenue in poor communities. London banned coal use before launching sensors. Each succeeded by following a path grounded in its context. India must do the same – innovate programmes which are federalism-friendly, subsidy-driven, and tailored to its informal economy.

Ultimately, India's clean air future will be shaped not by dashboards but by people, partnerships, and purpose. We must fix the plumbing before painting the walls. Clean air must be a right for all, not a privilege for a few. Securing that right will take more than promises. It will take coordination, courage, and a commitment to act.

Ajay S. Nagpure is urban systems scientist at the Urban Nexus Lab at Princeton University.

THE GIST

The challenge begins with how India understands air pollution. It's often seen as a technical problem when in reality it's a complex structural issue shaped by governance capacity, demographic pressure, socio-economic disparity, behavioural norms, and entrenched economic systems.

Local governments need access to high-resolution, open-source data on emissions-generating activities: where waste is burned, which households use solid fuels, where construction is active, and which roads face the heaviest traffic.

As India adopts more digital tools, it must avoid falling into the "Western trap" – overreliance on high-tech, urban-centric data and solutions without addressing basic pollution sources

Key Issues Highlighted:

1. Misdiagnosis of the Problem:

- Air pollution is seen as a **technical problem**, when in fact it is a **structural issue** driven by:
 - Weak local governance capacity
 - Socio-economic inequalities
 - Outdated infrastructure
 - Behavioral norms (e.g., biomass burning, old vehicles)
 - Fragmented institutional mandates

2. Limitations of NCAP and Current Frameworks:

- Target: Reduce **PM2.5 levels by 40%** by 2026 (from 2017 levels).
- Challenge: **Over-reliance on air quality monitors**, which fluctuate with weather and geography.
- Only **~60%** of funds under NCAP were utilized (2019–2023), reflecting **institutional and coordination gaps**.

3. Lack of High-Resolution, Local Data:

- Local authorities lack data on:
 - **Solid fuel usage** at household level
 - **Waste-burning hotspots**
 - **Construction sites**
 - **Traffic congestion zones**
- Without **activity-based metrics**, emissions remain abstract and untraceable.

Structural Reforms Needed:

A Three-Phase Approach:

1. **Phase I:** Create local emissions profiles (e.g., source-level mapping of pollution)
2. **Phase II:** Link funding to targeted actions (e.g., replacing stoves, regulating construction)
3. **Phase III:** Measure **emission reduction**, not just pollutant concentration

Metrics Must Shift:

- From ambient pollution levels to **activity-based outcomes** (e.g., buses electrified, solid fuel households reduced)

Avoid the 'Western Trap':

- High-tech tools (like smog towers, AI dashboards) without **addressing basic pollution sources** (e.g., biomass burning, unregulated industry) is ineffective.
- **Urban elite capture** must be avoided – rural areas contribute majorly to emissions and need focused solutions.

Funding Structure Reforms:

- Separate funds for:
 - **Long-term research** (innovation, technology)
 - **Short-term implementation** (stove replacement, road dust management)

Way Forward:

1. **Empower local governance:** Air quality must become a **core municipal function**, not a parallel add-on.
2. **Invest in structural changes:** Phasing out dirty fuels, supporting electric mobility, enforcing construction regulation.
3. **Build people-first solutions:** Work with **communities**, not just tech dashboards.
4. **Data democratization:** Ensure open-access, real-time data sharing for **accountability and transparency**.
5. **Shift from monitoring to management:** Focus on **emissions reduction**, not just air quality measurements.

UPSC Mains Practice Question

Ques : “India’s air pollution crisis is more of a governance failure than a technical problem.” Examine in light of recent policy efforts and suggest a robust framework to combat air pollution.

On the occasion of **Chhatrapati Shivaji Maharaj's death anniversary (April 3, 1680)**, the article re-examines his **legacy, governance, and socio-political vision**.

- It emphasizes that Shivaji was not just a warrior king but a **radical reformer, liberator, and inclusive nation-builder**, whose contributions defied feudal orthodoxy and laid the foundation of a **Hindavi Swarajya** (self-rule).

The radical and enduring legacy of Shivaji

On April 3, the death anniversary of Chhatrapati Shivaji Maharaj who passed away at 50 in 1680, a lookback through books, charters and memoirs to understand what made the king a transformative force in a feudal age

Prathmesh Kher

Chhatrapati Shivaji Maharaj mounted the most famous opposition to Aurangzeb's expansionism during Mughal rule in India. Shivaji began his journey as a Maratha warrior and eventually became a self-made king.

Often leading from the front, Shivaji guided his men into dangerous campaigns often at risk to his own life and limb. In doing so, he earned both the respect and loyalty of his soldiers, many of whom often sacrificed their lives in the cause of their beloved king – leading to the creation of the Hindavi Swarajya, an Indian autarky.

Starting out in the 1640s, with a small band of warriors, Shivaji had, by the mid-1660s, earned the confidence of enough fighters to have brought the number to the tens of thousands. A master of guerrilla warfare, referred to as *ganimi kuno* in Marathi, his agile modus operandi ran rings around the numerically superior but bulky Mughal army. Swift cavalry raids were married with disruption of enemy supply lines, and hit-and-run tactics were used in harsh terrain causing considerable damage to enemy forces.

Francis Martin, the first Governor-General of Pondicherry in French India, contrasts the military organisation of the Mughal army with the Maratha army in his *Memoirs*. "The Maratha forces were mobile, light footed, and lived a life of spartan simplicity in camp," Martin notes. The warrior king's persona is also distinguished in Martin's journals by a lack of pomp and luxury generally associated with royalty, describing him as often sitting on the ground with his soldiers.

French traveller Jean de Thévenot describes Shivaji as being "short and tawny, with quick eyes that shew a great deal of wit." De Thévenot also mentions that Shivaji would eat once a day, and in common attendance with his soldiers. Abbé Barthélemy Carré says this of the man: "To his quickness of movement he added, like Julius Caesar, a clemency and a bounty that won him the hearts of those his arms had worsted."

But what sort of rule was Shivaji to usher in?

The subaltern king

In recent years, political and social organisations have often dug their heels on the subject of Shivaji's caste identity. This is a disservice to the man, the bulk of whose comrades, lieutenants, and officers were men who hailed from the so-called 'lower' castes, poor Brahmins, nomads, peasants or petty landlords. Hambirao Mohite was Maratha, Tanbaji Malusare was Koli, Bajji Prabhu Deshpande came from a Chandraseniya Kayastha Prabhu family, and Ragho Atré was Brahmin, to name but a few. The Narikuravars, a nomadic community which moved from Maharashtra to Tamil Nadu, had been warriors in Shivaji's army. Among his brave captains was Siddi Hilal, a Muslim who hailed from the Bantu people of southeast Africa. Likewise, Shivaji's naval forces liberally employed members of the Koli caste, traditional fishermen-turned-seafaring soldiers. In



Strong tradition: A worker cleans Chhatrapati Shivaji's statue at Vile Parle in Mumbai on March 16, 2011

short, Shivaji's forces drew upon cultivators, craftsmen, tribals, fishermen et al to fill the ranks of a growing war machine.

Shivaji's rule was so progressively meritocratic that at the time of his death Shivaji also allowed for those who so wished to revert back into Hinduism; Netaji Palekar and Bajaji Nimbalkar are but two examples of the same. This was a full two centuries before the similar Arya Samajist reform. These actions should be understood in light of the similar affront he had caused to the orthodox Brahmins who'd opposed his coronation on account

of his unverifiable caste heritage.

Cosmo de Guarda in his 1695 work *Life of the Celebrated Sevagi* writes that Shivaji on his deathbed declared that his wives need not be forced to commit sati upon his demise. "I do not, however, like that you should compel any, for I do not require them to come to be burnt by force. I command you to inform them of this, as I respect and wish this courtesy from those who love me most," De Guarda writes, paraphrasing Shivaji's deathbed statements.

During his rule, Shivaji also started projects that sought to replace Persian legalese with Indian ones. In 1677, he sponsored a Sanskrit text known as the *Rajavyavaharakosa* (Lexicon of Royal

Institutes), which provided Sanskrit synonyms for over 1,500 Persian administrative terms. Marathi, in either the Devanagari or Modi scripts, became both the language of the court as well as of the popular literature of the time. This allowed for ordinary people to both understand the workings of the administration without the need to learn Persian, and also helped revive an otherwise marginalised Indian language. Shivaji's rule was an affront to the orthodoxy prevalent in the age, and provided dignity and opportunity to all those who came under his *chattr* (protection) regardless of their caste or creed.

The liberator

Under the rule of Aurangzeb, slavery had been a persistent feature; the *Al-Fatawa al-Alamiyyah*, published in 1672, describes the lawful right of Muslims to purchase, own, and have sexual relations with slaves. The text also made inadmissible all testimony of slaves in a court of law. This did not go unchallenged by Shivaji. During his rule of the Coromandel coast, Shivaji signed a charter to the Dutch banning, freeing, and stopping the import and export of all slaves under his rule. This instruction is with respect to the Dutch establishing trading posts at Porto Novo (Paramaripetta, Cuddalore district) and Tevenapatam in present-day Tamil Nadu, and Pondicherry. "Under the Moorish reign it had remained lawful for you to buy and transport from here male and female slaves without hindrance from anyone," the charter, signed in August 1677, recounts. "But now, so long as I am master of these lands, you should not buy or transport any men or women as slaves," the charter declares. Reminding slave traders that the practice would not be allowed to continue unimpeded and without consequence, the charter states, "And if you happen to do so and convey them to neighbouring lands, my people will set themselves against it, hinder it in all manner of ways, and will not allow of their [the slaves] being brought back to your factory; this must you observe and fulfil in the prescribed manner."

Shivaji's attitudes towards the feudal structure of his age were just as revolutionary as his attitude towards slavery. Under his rule, taxation and other sources of state revenue were reformed to be more generous to the people at large. Shivaji abolished the 'vatandari' system, a form of landlordism prevalent in the Deccan during his time, and implemented the Ryotwari system instead. Ryot referred to the cultivator of the land who would be given a greater measure of control over the means of production.

In describing the revenue system of Swarajya, Subhasidh Raobhar, the first biography written on Shivaji in 1697, clearly says, "The ryots (peasants or tillers of land) in the country were freed from the yoke of Janimdar's. Even if they intended to oppress by exercising their supremacy they could not do so."

The Adhyapatra, a royal edict drafted by Shivaji's Finance Minister Rameshchandra Pant Amatya, is blunter when it says, "The Vatandars, etc., in a state are really its enemies. They have not got the mentality to remain content with the rights over lands (Vatan) which they already possess. They have a strong desire to go on acquiring newer and newer (estates), to wax strong, to use that strength in dispossessing others and in carrying on depredations."

It was perhaps these dynamic socio-economic changes that earned Shivaji the moniker *Shakakarta*, or epoch maker, during his rule.

This is the first of a two-part series on Shivaji's reign.

Key Dimensions of Shivaji's Legacy

1. Military Genius and Guerrilla Warfare Pioneer

- **Ganimi Kawa** (guerrilla tactics): Agile, terrain-savvy, low-cost warfare against numerically superior Mughals.
- Built a decentralized but highly mobile and loyal army.
- Foreign observers like **Francois Martin** and **Jean de Thévenot** admired his modesty, leadership style, and connection with soldiers.

2. Inclusive and Meritocratic Leadership

- Shivaji's army included people from **all castes and communities**:
 - Tanhaji (Koli), Hambirrao Mohite (Maratha), Siddi Hilal (African Muslim), Baji Prabhu Deshpande (CKP), and many others.
- **No hereditary nobility** was appointed to command forts — showing a break from feudal hierarchy.
- Orthodox Brahmins opposed his coronation due to "caste ambiguity," but Shivaji went ahead anyway, symbolizing **social defiance**.

3. Linguistic and Legal Reforms

- Promoted **Sanskrit and Marathi** in administration; replaced Persian terms via the **Rajavyavaharakosha**.
- Made administration **accessible to common people**, empowering them linguistically.

4. Abolition of Slavery and Social Reforms

- Banned slave trade in the **Coromandel region** through charters to Dutch traders (1677).
- Rejected **Sati practice** on his deathbed, issuing instructions that wives should not be compelled to immolate themselves.

5. Economic and Revenue Reforms

- Abolished **Vatandari system** (landlordism) → implemented **Ryotwari model**, empowering cultivators.
- As per **Sabhasad Bakhar** and **Adnyapatra**, Shivaji aimed to **protect peasants from exploitative intermediaries**.
- Rationalized taxation and improved state revenue collection.

Why Shivaji Was a Radical for His Time:

Aspect

Traditional Feudal Norm

Shivaji's Approach

Daily News Analysis

Military	Hereditary nobility, large static armies	Mobile, inclusive, merit-based, guerrilla warfare
Social Structure	Caste-based roles, orthodoxy	Meritocracy, caste-inclusivity
Language & Culture	Persian elitism	Vernacular empowerment (Marathi & Sanskrit)
Slavery & Women's Rights	Common slavery & Sati	Banned slave trade, progressive stand against Sati
Revenue System	Landlord-dominated (Vatandari)	Ryotwari: Direct engagement with peasants

UPSC Mains Practice Question

Ques : "Chhatrapati Shivaji was not just a military strategist but a radical reformer who challenged the orthodoxy of his time." Discuss with reference to his socio-political and economic policies.



The European Organization for Nuclear Research (CERN) has unveiled its official blueprint for the Future Circular Collider (FCC) — a proposed successor to the Large Hadron Collider (LHC), the world's largest particle accelerator.

This proposal outlines:

- A 91-km-long tunnel
- A multi-decade, two-phase research plan
- Estimated cost of 14 billion Swiss francs
- Final decision expected by 2028, construction targeted to start in the mid-2040s

What is the Future Circular Collider (FCC)?

- A proposed next-generation particle collider, aiming to vastly exceed the energy and precision capabilities of the current LHC.
- To be built along the French-Swiss border, beneath Lake Geneva.
- Envisioned in two phases:
 - First Phase (~2045): High-precision study of known particles like the Higgs boson.
 - Second Phase (~2070): High-energy proton-proton and heavy ion collisions, exploring new physics beyond the Standard Model.

Why is FCC important?

1. Beyond the Standard Model:

- The Standard Model of particle physics, while successful, leaves many mysteries:
 - Dark matter and dark energy
 - Matter-antimatter asymmetry
 - Quantum gravity



An illustration marks the tunnels of the Large Hadron Collider (LHC) and the Future Circular Collider (FCC). AFP

CERN reveals plan for Large Hadron Collider's successor

Associated Press
GENEVA

Top minds at the world's largest atom collider have released a blueprint for a much bigger successor that could vastly improve research into the remaining enigmas of physics.

For roughly a decade, scientists at CERN, the European Organization for Nuclear Research, have been making plans for a successor to the Large Hadron Collider, a network of magnets that accelerate particles through a 27-kilometre underground tunnel and slam them together at velocities approaching the speed of light.

The plans for the Future Circular Collider (FCC) — a nearly 91-kilometre loop along the French-Swiss border and below Lake Geneva — published on Monday put the finishing details on a project roughly a decade in the making at CERN.

The blueprint lays out the proposed path, environmental impact, scientific ambitions and project cost. Independent experts will take a look before CERN's two dozen member countries — all European except for Israel — decide in 2028 whether to go forward, starting in the mid-2040s at a cost of some 14 billion Swiss francs.

The FCC would carry out high-precision experiments to study "known physics" in greater detail, then enter a second phase — planned for 2070 — that would conduct high-energy collisions of protons and heavy ions that would "open the door to the unknown," said Giorgio Chiarelli, a research director at Italy's National Institute of Nuclear Physics.

"History of physics tells that when there is more data, the human ingenuity is able to extract more information than originally expected," Mr. Chiarelli, who was not involved in the plans, said.

- FCC can help probe deeper into these unknowns by generating higher collision energies and more data.

2. Understanding the Higgs Boson Further:

- Although discovered in 2012 via LHC, the Higgs boson's full properties are yet to be fully understood.
- FCC aims for precise measurements of Higgs interactions and rare decay processes.

3. Technological and Global Collaboration Impact:

- Such mega-projects often lead to spin-off technologies in:
 - Superconducting magnets
 - Cryogenics
 - Data processing (e.g., the WWW was invented at CERN)
- Encourages international scientific cooperation, including potential future participation from India.

Environmental and Ethical Considerations:

- The blueprint includes:
 - Environmental impact assessment
 - Land usage under populated and ecologically sensitive zones (e.g., under Lake Geneva)
 - Raises questions about cost vs. benefit, especially amid global climate and development priorities.

India and Global Scientific Engagement:

- India is an associate member of CERN and has contributed significantly to:
 - LHC construction
 - Design of detectors like CMS and ALICE
 - Supply of superconducting magnets
- FCC opens new opportunities for Indian scientists and institutions to engage in cutting-edge science, tech transfer, and capacity building.

Way Forward for India:

- Increase scientific funding in basic research and international collaborations.
- Establish a national roadmap for big science missions.
- Expand human resource development in physics, data science, and engineering to contribute meaningfully.

- ➔ Promote public awareness about scientific progress and its long-term societal impact.

UPSC Mains Practice Question

Ques :Why are large-scale particle physics experiments like the Future Circular Collider (FCC) important for humanity? What role can India play in such international scientific ventures?



Page : 08 Editorial Analysis

India's educational transformation — the true picture

It has been argued that the education system in India has veered off its course in the last 11 years of the Narendra Modi government. In fact, nothing could be further from the truth. The country that witnessed the monumental neglect of the education system by previous governments is deeply aware of the unpleasant truth. While nations across the world reimagined education for a rapidly evolving world, India's educational framework remained trapped in a time capsule, with the last major policy update in 1986, which was marginally amended in 1992. This was a deliberate perpetuation of colonial mindsets accompanied by a move to insulate the country from rapid technological changes taking place in the world.

What past policy was like

Corruption and a governance deficit were the defining features of the country's educational past. Public universities were systematically starved of funds. Unregulated private institutions mushroomed into degree mills. Those who suffer from selective amnesia need to be reminded of the infamous Deemed University scandal of 2009 – university status was granted to 44 private institutions without proper evaluation, with many found guilty of financial irregularities. Political interference in education was rampant.

The University Grants Commission and the All India Council for Technical Education became instruments of control rather than enablers of excellence. Appointments to leadership in universities were based on political loyalty. Textbooks deliberately downplayed the contributions of revolutionaries such as Shaheed Bhagat Singh, Chandra Shekhar Azad, Veer Savarkar and others while portraying uncomfortable historical truths about foreign invasions. Historical narratives were carefully curated to serve partisan interests. India's diverse cultural and intellectual traditions were systematically marginalised. All of these contributed toward creating an education system that remained disconnected from India's glorious past and devoid of civilisational ethos.

The National Education Policy of 2020 represents a decisive break from this inglorious past. It is a product of the most extensive democratic consultations in India's policy history. Based on the five pillars of access, equity, quality, affordability and accountability, the NEP 2020 is



Dharmendra Pradhan

is Union Minister of Education

a policy of the people, by the people and for the future of the people.

The focus is empowerment and change

One of its primary objectives is to correct structural inequities inherited from centralised, rigid and elitist frameworks. With this transformative approach, the enrolment of Scheduled Castes (SC) in higher education has increased by 50%, Scheduled Tribes (ST) by 75%, and Other Backward Classes by 54% since 2014-15.

Women's empowerment is at the heart of these reforms. Female enrolment across all categories has grown by an impressive 38.8%, crossing 2.18 crore in 2022-23. Among Muslim minority students, female enrolment rose by 57.5%. In the board examinations, the performance of girls has shown steady improvement. In higher education, PhD enrolment among women has increased by a whopping 135%. Today, women in the field of higher education STEM (science, technology, engineering, mathematics, and medicine) constitute 43%, thus shattering the glass ceiling in domains that were dominated by men. Female teachers now constitute 44.23% of the teaching workforce, up from 38.6% in 2014, thus transforming academic leadership landscapes. The data represent a fundamental shift in India's academic ecosystem, with women reclaiming their rightful place in India's intellectual journey.

These gains reflect a fundamental shift in priorities. Per-child government expenditure has increased by 130%, from ₹10,780 in 2013-14 to ₹25,043 in 2021-22. The Government is prioritising early childhood education and foundational learning and numeracy for a child's overall development, cognitive growth, and future learning. Government schools are being upgraded with modern infrastructure, holistic pedagogy and other support systems. With concerted efforts, the number of out-of-school children and also drop-out rates have decreased. The pupil-teacher ratio has improved, and, most importantly, learning outcomes have been steadily improving.

The NEP 2020 has introduced futuristic elements such as coding from middle school, multidisciplinary approaches to problem-solving, and innovation hubs in rural areas. Over 10,000 Atal Tinkering Labs (ATL) are nurturing grassroot-level innovation. The Government has plans to add 50,000 more ATLs with broadband Internet connectivity in schools in the five years

ahead. These initiatives represent a fundamental reimagining of education for India's future.

In higher education, sustainable revenue models have freed universities from resource dependency. India now has 11 universities in the QS World Rankings top 500, a remarkable improvement from the past. Research publications have increased by 88% since 2015, propelling India to 39 in the Global Innovation Index, up from 76 in 2014. The Anusandhan-National Research Foundation is nurturing research and innovation in collaboration with industry and academia.

Language primacy

Most significantly, the NEP has restored primacy to all Indian languages and knowledge traditions, overcoming the decades of 'English-first' policies. Through the Indian Knowledge Systems (IKS) initiative, over 8,000 higher education institutions have adopted IKS curricula. Through the Bharatiya Bhasha Pustak Yojana, 15,000 original and translated textbooks in 22 Indian languages will be published, which will benefit millions of young minds to express themselves in their mother tongues.

The Government's commitment to social justice was reflected in the enactment of the Central Educational Institutions (Reservation in Teachers' Cadre) Act, 2019, for reservation of teaching positions in central educational institutions for SCs, STs, and others by treating the 'Institution as one Unit' rather than a grossly flawed system of treating 'each Department as one Unit'. Similarly, the Government dispensed with the mischievous practice of declaring "None Found Suitable" in university recruitments to reject candidates from SC/ST/OBC categories and converting these into non-reserved posts, in the interest of making reservation truly meaningful.

The government remains focused on building a Viksit Bharat wherein education truly liberates and empowers. The decade ahead will witness an educational renaissance that honours India's past while fearlessly embracing the future. India's education system has finally broken free from colonial shadows and ideological captivity. It stands poised to fulfil the dreams of millions of Indians.

This is not merely education reform. It is the intellectual decolonisation that India has awaited for a long time, which will catapult India into the comity of developed nations.

The National Education Policy of 2020 is based on one of most extensive democratic consultations in India's policy history and will enable an educational renaissance

Paper 02: Social Justice : Education

UPSC Mains Practice Question: The National Education Policy 2020 marks a fundamental shift in India's educational vision. Discuss its key features and critically evaluate how it addresses the challenges of inclusivity, quality, and future-readiness in Indian education.

Context :

- Over the years, India's education system has undergone significant transformations, with the most profound changes occurring in the last decade.
- Critics argue that the system has deviated from its intended course under the Narendra Modi government, but evidence suggests otherwise.
- The reforms initiated through the National Education Policy (NEP) of 2020 mark a decisive break from past inefficiencies, redefining the sector to align with contemporary global trends.
- Therefore, it is important to examine the previous challenges in India's education system, the transformative impact of the NEP 2020, and the broader implications for the country's future.

Previous Challenges in India's Education System

- Outdated Curriculum and Colonial Legacy
 - One of the primary issues plaguing India's education system was its outdated curriculum, which failed to keep pace with the rapidly changing global landscape.
 - For decades, the curriculum remained rooted in rote learning, prioritising memorization over critical thinking and problem-solving.
 - This approach did little to prepare students for the modern workforce, which increasingly values creativity, analytical skills, and adaptability.
- Corruption and Governance Deficit
 - Corruption was a defining characteristic of India's education system for many years.
 - Public universities were systematically starved of funds, while private institutions flourished without regulation.
 - The unchecked proliferation of private colleges led to the rise of degree mills, institutions that prioritised profits over education quality.

Daily News Analysis

- Many of these institutions operated without proper accreditation, handing out degrees that held little real value.
 - One of the most infamous examples of corruption was the Deemed University scandal of 2009, where 44 private institutions were granted university status without adequate evaluation.
 - Many of these institutions were later found guilty of financial irregularities, raising serious concerns about the credibility of the higher education system.
- ➔ **Political Interference in Education**
- Political interference played a significant role in distorting India's education system.
 - Leadership positions in universities were often awarded based on political loyalty rather than academic merit, compromising the integrity of higher education institutions.
 - Vice-chancellors and faculty appointments were frequently influenced by ruling parties, turning universities into ideological battlegrounds rather than centres of learning.
 - This interference extended to curriculum design, where historical narratives were selectively altered to serve political interests.
 - Key figures in India's independence movement, such as Shaheed Bhagat Singh, Chandra Shekhar Azad, and Veer Savarkar, were downplayed in textbooks, while uncomfortable truths about foreign invasions were either omitted or diluted.

The National Education Policy (NEP) 2020: A Transformative Vision

- ➔ Recognising these challenges, the Modi government introduced the National Education Policy (NEP) 2020, marking the first major overhaul of India's education system in over three decades.
- ➔ Unlike past policies, which were designed with limited consultation, NEP 2020 emerged from the most extensive democratic discussions in India's policy history.
- ➔ It is built on five key pillars: access, equity, quality, affordability, and accountability.
- ➔ These principles guide the policy's objective of making education more inclusive, innovative, and globally competitive.

Transformative Impact of the NEP 2020

- ➔ **Correcting Structural Inequities**
 - A significant focus of NEP 2020 is correcting structural inequities.
 - The policy has led to a substantial increase in higher education enrolment among marginalised communities: Scheduled Castes (SC) enrolment rose by 50%, Scheduled Tribes (ST) by 75%, and Other Backward Classes (OBC) by 54% since 2014-15.
 - Women's education has also seen remarkable progress, with female enrolment growing by 38.8% across all categories and PhD enrolment among women increasing by an astonishing 135%.
- ➔ **Substantial Investments**

Daily News Analysis

- The government has made substantial financial investments in education, with per-child government expenditure increasing by 130%, from ₹10,780 in 2013-14 to ₹25,043 in 2021-22.
- This increase has enabled the upgrading of government schools with modern infrastructure, improved pedagogy, and better teacher-student ratios.
- The emphasis on foundational learning, numeracy, and cognitive development aims to equip students with skills essential for the future.
- ➔ **Technological Integration and Research Advancements**
 - The NEP 2020 has also reimagined education through the integration of technology and skill-based learning.
 - It has introduced futuristic elements such as coding from middle school, multidisciplinary learning, and rural innovation hubs.
 - Over 10,000 Atal Tinkering Labs (ATLs) have been established to nurture grassroots innovation, with plans to expand this initiative further.
 - These efforts ensure that students are not only academically competent but also equipped to tackle real-world challenges through innovation and creativity.

Broader Implications of NEP 2020

- ➔ **Sustainable Revenue Models for Institutions**
 - Higher education institutions are also benefiting from sustainable revenue models, reducing dependence on government resources.
 - As a result, India now has 11 universities ranked among the QS World Rankings top 500, a significant improvement from previous years.
 - Research publications have surged by 88% since 2015, propelling India's ranking in the Global Innovation Index from 76 in 2014 to 39 in 2023.
 - The establishment of the Anusandhan-National Research Foundation fosters collaboration between academia and industry, further strengthening India's research and innovation ecosystem.
- ➔ **Reviving Indian Languages and Cultural Heritage**
 - One of the most groundbreaking aspects of NEP 2020 is the emphasis on Indian languages and knowledge traditions.
 - For decades, an 'English-first' policy dominated Indian education, sidelining regional languages and indigenous knowledge systems.
 - The Indian Knowledge Systems (IKS) initiative has been integrated into over 8,000 higher education institutions, promoting indigenous wisdom alongside modern disciplines.
 - The Bharatiya Bhasha Pustak Yojana aims to publish 15,000 original and translated textbooks in 22 Indian languages, ensuring that students can learn and express themselves in their mother tongues.
- ➔ **Commitment to Social Justice**

Daily News Analysis

- The government's commitment to social justice is reflected in the Central Educational Institutions (Reservation in Teachers' Cadre) Act of 2019.
- This legislation ensures fair representation of SC, ST, and OBC candidates in university faculty positions, rectifying past injustices where reservations were often bypassed through bureaucratic loopholes.
- The abolition of the practice of rejecting marginalised candidates under the guise of "None Found Suitable" has made reservation policies more meaningful.

Conclusion

- The NEP 2020 has redefined education through inclusivity, technological integration, and the revival of India's linguistic and cultural heritage.
- With increasing enrolment, enhanced research output, and improved infrastructure, India's academic ecosystem is experiencing an unprecedented renaissance.
- These reforms go beyond mere policy adjustments, they represent intellectual decolonization, positioning India on the global stage as a knowledge powerhouse.
- As the nation continues to build on these foundations, it stands poised to realise its vision of a 'Viksit Bharat' (Developed India), where education serves as the true force of empowerment and progress.

