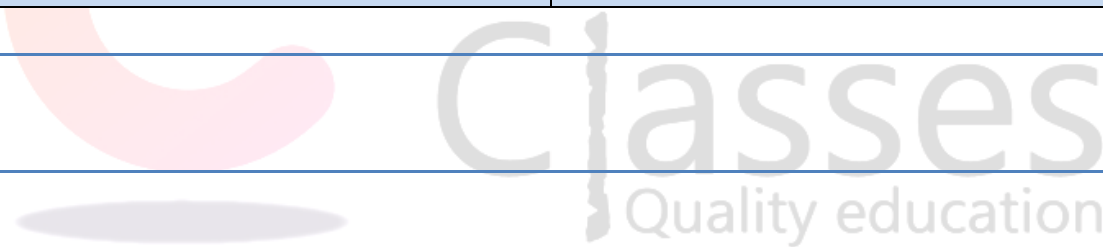


The Hindu Important News Articles For UPSC CSE

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The Ken-Betwa River-Linking Project (KBLP)—India's flagship inter-basin water transfer initiative—aims to divert "surplus" water from the Ken basin to the water-scarce Betwa basin in the Bundelkhand region. Designed to provide irrigation, drinking water, and hydropower across 13 districts in Madhya Pradesh and Uttar Pradesh, the project is framed as a crucial infrastructure solution. However, it faces intense resistance from indigenous Adivasi communities (primarily the Gond tribe) in the Panna and Chhatarpur districts. The ongoing protests highlight a fundamental friction point in Indian governance: balancing macro-economic development with environmental protection and socio-cultural human rights.

Core Issues & Drivers of Adivasi Resistance

- **Loss of Forest-Based Livelihood:**
 - Communities depend directly on Non-Timber Forest Produce (NTFP) such as mahua, tendu leaves, charwa, and guli-golanda for daily sustenance and economic survival.
 - Cash compensation fails to replace the continuous safety net provided by forest ecosystems.
- **Land Ownership & Financial Exclusions:**
 - While the current policy offers ₹12.5 lakh in monetary compensation and ₹5 lakh per acre, many Adivasi households lack formal land titles (pattas).
 - As a result, unrecorded occupants risk total exclusion from financial rehabilitation.
- **Disruption of Socio-Cultural & Community Cohesion:**
 - Physical displacement destroys ancestral lands (janambhoomi), community structures, and sacred cultural spaces.
 - Villagers demand community-based relocation ("a village for our village") rather than individual monetary payouts, to preserve their social safety nets and local dialect.
- **Environmental & Ecological Impact:**

Why Adivasis are resisting the Ken-Betwa river-linking project

Currently, affected villagers who were 18 years or older in February 2024 are eligible to receive ₹12.5 lakh in compensation and ₹5 lakh per acre of acquired land. However, the villagers say, 'We want a forest for our forest, land for our land, water for our water, and a village for our village.'

Krishan Rahman
reports from
Evening had fallen over Daudhan village in Madhya Pradesh's Bundelkhand region. A soft beat of a dhol came from the distance as the damp trucks and heavy machines left silent.

Inside his habli (mud house), Munni Lal sat chatting with his neighbours. About 500 m away, construction work on the Daudhan dam, across the Ken river, continued. The dam is the main part of the Ken-Betwa river-linking project.

"If we leave here, we will not find this kind of life anywhere. Let's humam ujaad ho rahi hai (But we are being uprooted)," Munni Lal said. "Ab kiko kabhi kabhi? (Who will we call kaka in the new place?)"

How will we speak our language in a new village? How will we make ourselves at home there? Our hearts belong here."

Ken and Betwa
His village, Daudhan, where around 700 people live, is among those affected by the Indian government's Ken Betwa river linking project. Once completed, the dam will submerge 10 villages, including Daudhan. Since the project falls within the Panna Tiger Reserve, the people of another 12 villages will be displaced, to offset the loss of forest area. In all, 22 villages across Panna and Chhatarpur districts will be affected.

The Union Cabinet approved the project in 2021 to transfer "surplus" water from the Ken river to the Betwa river through a 20 km long canal, ostensibly for irrigation and drinking in the water-stressed districts of Bundelkhand.

Bundelkhand spans 13 districts in Madhya Pradesh and Uttar Pradesh, known for its heroic folklore, the region has also been in the news for being one of India's driest and most impoverished areas.

Both the Ken and the Betwa flow through the region. The Ken originates in the Vindhyan plateau, flows mainly through Madhya Pradesh, and joins the Yamuna in Bundel in Uttar Pradesh. The Betwa also originates in the Vindhyan, and flows primarily through Uttar Pradesh before meeting the Yamuna in Haridwar.

But in the villages affected by river linking, conversations from morning until late into the night revolve around displacement, compensation, rehabilitation, and the loss of their forests and livelihoods.

'We will go together'
The villagers said monetary compensation cannot replace what they are losing. "We want a forest for our forest, land for our land, water for our water, and a village for our village," Jagannath, of Mahari village, said.

Currently, affected villagers who were 18 years or older in February 2024 are eligible to receive ₹12.5 lakh in compensation and ₹5 lakh per acre of acquired land. However, Mr. Lal said most labour families do not have patta land.

Fifty-year-old Sita Rani sits inside her house in Daudhan talking about the future and what the project will take away.

"We have been living along the Ken. This is our janam bhoomi (birthplace). Why should we leave?" she said. "Our faith is being lost. Bharti Mata (Mother Earth) is being taken away. We do not want to leave our forest and our forest, but the government is forcing us and not meeting our demands."

"If the government is displacing us, we want a village like ours," Kosaan, an Adivasi of Mahari, one of the villages threatened by displacement, said. "Just as we are living together, we will go together. We will not go separately. Otherwise, we will not be far from the bull."

Naradi village, home to around 300 people, is located on a hill and is isolated mostly by the local community. Unlike others, it does not fall within the submergence zone, yet its people face the same consequences. At the edge of the settlement, a forest begins, with mahua, charwa, and other forest produce sustaining the people.

"We want these same trees, the same mahua," Kesar Bai, 53, of Naradi village, said as she worked with other women collecting forest produce. "Here, we collect charwa, mahua, tendu leaves, and guli-golanda, and manage our expenses. Who will we do after going outside?" The women around her agree. "Use us our charwa and mahua. Otherwise, we will starve."

One of them, Rati Bai, says, "Have we become so bad in the eyes of the government? When our household runs because of this forest, why are we being forced to leave? If we don't get our rights, we will die in our birthplace. We will not go anywhere."

'Just cancel the dam'
A protest in response to the project, known as Chitra Kandolan, or "symbolic pyre protest", has been led by Adivasi women. While they have been protesting since 2022, the movement gained national attention in April and July this year.

Phoola Rani from Padman village says the thought of leaving makes her sleepless.

"We are losing our gods and goddesses. We are losing everything. Everything we have will be destroyed. Humam honari? (What about the rule that the land that gave birth to us is being taken away?)" Then she smiles. "Baudha la humam chahi? (Aro! (Let's cancel the dam completely?)"

With this, who also hails from Padman, asks, "Is our voice not reached Naradima Modi?"



displaced and made homeless," she continued. "People don't want to be displaced but when the project is moving ahead, an immediate, sensible dialogue on resettlement and rehabilitation between government and the people who are united and organised is a must. That is not happening."

Land and houses
According to a 2017 forest advisory committee estimate, the detailed project report estimated that 23 lakh trees will be felled. Some experts here, however, said this is an underestimate.

In July, villagers again lay on symbolic pyres and went on a hunger strike at the Bharat river following a similar protest in April. After 15 days, the police cleared the protest site.

In Bhathnagar, the leader of the movement, said the administration had promised a dialogue with representatives of the forest but no such conversation took place. "If our demands had been accepted, why would we have continued protesting?" he asked. He also alleged that houses in some villages were demolished without adequate notice or compensation.

In April, villagers demanded a joint survey of land and houses, ₹25 lakh in compensation per individual, four times the value in compensation for the land, and an April 2026 deadline. By the July protest, the demands had shifted to three acres of land jointly in the names of male and female family heads, a village for the displaced village, and the same deadline.

The Chhatarpur District Magistrate in April, Parth Bhatnagar, said most of the demands raised during the April protests had been addressed. However, neither the current District Magistrate, Meenal Meena, nor the IIT of Jala Panchayat, Nandini Shrivastava, responded to multiple requests for comment. An email sent to the Principle Secretary of the Madhya Pradesh Revenue Department, which oversees land acquisition, had not elicited a reply at the time of publishing.

No place like this
Kaila, 70, and his joint family depend on some three acres of land and forest resources in Daudhan village. His voice trembles as he speaks looking at the trees he planned, of mango, ber, karfi, and teak.

"When humam chhatarpur rule (our ancestors settled here), and we are left craving our own rights, I planned trees with my own hands. But now Parwar tells me, what will you get? Your Panna will be sold to someone."

People are now living with the reality that the forest and river they call home may soon become just another site of development.

Naradi, a 20-year-old Adivasi originally from Mahari village and married in Padman, cannot imagine a life elsewhere. "We live everything here," she says. "We will never find a place like this, even in our dreams."

Krishan Rahman is an independent journalist. krishan.rahman@gmail.com

Daily News Analysis

- The project involves submerging over 5,000 hectares of the Panna Tiger Reserve and felling an estimated 23 lakh trees.
- This loss of biodiversity destabilizes the local eco-system, directly degrading the natural resources on which forest-dwelling tribes depend.
- **Administrative & Governance Gaps:**
 - Adivasi groups report a lack of meaningful dialogue and top-down enforcement, leading to peaceful agitational movements such as the Chita Aandolan (symbolic pyre protests).

Static Dimensions & Constitutional Framework

- **Fifth Schedule of the Indian Constitution:**
 - Guarantees special protection to Scheduled Areas and Scheduled Tribes to prevent alienation of tribal lands and ensure self-governance.
- **Forest Rights Act (FRA), 2006:**
 - Mandates the recognition of Individual Forest Rights (IFR) and Community Forest Rights (CFR).
 - Requires the explicit consent of the Gram Sabha before any forest land diversion or displacement can occur.
- **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act, 2013:**
 - Mandates Social Impact Assessments (SIA) and sets statutory standards for fair market rehabilitation rather than minimal cash payouts.
- **Directive Principles of State Policy (DPSP):**
 - **Article 46:** Directs the State to protect Scheduled Tribes from social injustice and all forms of exploitation.
 - **Article 48A:** Mandates the protection and improvement of the environment and safeguarding of forests and wildlife.

Conclusion & Way Forward

The resistance against the Ken-Betwa project underscores that sustainable development cannot treat local communities as collateral damage. To address the impasse:

- **Shift from Compensation to Land-for-Land Rehabilitation:** Priority must be given to granting alternative fertile land and forest access jointly in the names of family heads.

Daily News Analysis

- **Enforce Gram Sabha Consent:** Ensure statutory compliance with the FRA, 2006, by conducting transparent consultations with affected villages.
- **Adopt Inclusive Rehabilitation Plans:** Implement community-centric relocation strategies that preserve tribal social structures, culture, and traditional livelihoods.

UPSC Prelims Practice Questions

Question: With reference to the Forest Rights Act, 2006, consider the following statements:

1. It recognizes both Individual Forest Rights and Community Forest Rights.
2. The Gram Sabha has a role in initiating the process of determining forest rights.
3. Recognition of forest rights is restricted only to Scheduled Tribes.
4. Community Forest Rights can include rights over minor forest produce.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 1, 2 and 4 only
- C. 2 and 3 only
- D. 1, 2, 3 and 4

Ans: B)

UPSC Mains Practice Questions

Question: "Development-induced displacement often results in the disruption of social capital rather than merely the loss of physical assets." Discuss with reference to tribal communities in India. **(10 Marks, 150 Words)**

The Comptroller and Auditor General's (CAG) performance audit of the Green India Mission (GIM) highlights a systemic gap in India's environmental governance. Designed as one of the eight pillars of the National Action Plan on Climate Change (NAPCC, 2008), the GIM aimed to enhance forest quality and expand carbon sinks. However, across a decade, it achieved less than 10% of its target for forest quality improvement and only 4% for expanding forest cover. As policy priorities shift toward mass tree-planting initiatives like 'Ek Ped Maa Ke Naam', India risks mistaking tree counting for true ecological restoration—compromising long-term biodiversity, climate commitments, and rural livelihoods.

Key Issues & Diagnostic Analysis

• Implementation Failure of Green India Mission (GIM):

- Targeted 1.4 million hectares for forest quality improvement, but achieved only 0.11 million hectares.
- Failed to achieve intended convergence with key financial streams such as CAMPA (Compensatory Afforestation Fund Management and Planning Authority) and rural wage schemes like MGNREGA.

• Tree Cover vs. Real Forest Cover:

- The India State of Forest Report (ISFR) 2023 showed a total green cover gain of 1,445 sq km, but only 156 sq km was actual recorded forest land.
- The vast majority (1,289 sq km) consists of isolated tree cover outside forests (commercial plantations, roadside trees, agroforestry), while natural dense forest canopies within recorded areas continue to degrade into scrub.

• Limitation of Mass Plantation Drives:

- Top-down plantation drives (e.g., Ek Ped Maa Ke Naam) focus on short-term numerical metrics (saplings planted) rather than long-term sapling survival, canopy density, or ecosystem health.

• Ecological Degradation and Invasive Species (Case Study: Aravallis):

- Initiatives like the "Aravalli Green Wall" attempt quick-fix re-greening without adequately addressing root causes: illegal mining, urban encroachment, and the proliferation of invasive species like *Prosopis juliflora* (vilayatikikar).
- Monoculture plantations or artificial landscaping cannot replicate natural ecosystems developed over millennia.

Losing forest for trees

India is counting trees when it should be restoring forests

A performance audit by the Comptroller and Auditor General (CAG) of the Green India Mission (GIM) has found that a scheme conceived to heal India's forests had, across a decade, achieved almost nothing it set out to do. Instead of improving forest quality over 1.4 million hectares, the mission only managed 0.11 million – not even a tenth of the target. On expanding forest cover, the mission barely scraped together four per cent. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) channels money collected from industry for diverting forest land into afforestation, while the Mahatma Gandhi National Rural Employment Guarantee Scheme, now re-branded as VB-G RAM G funds rural wage labour that can be used for plantation and land-restoration works, but GIM's intended convergence with these schemes never materialised. The mission was one of the eight pillars of the National Action Plan on Climate Change, unveiled in 2008, and the instrument through which India promised the Paris Agreement an additional carbon sink of 2.5 billion to 3 billion tonnes by 2030. Its animating idea was ecological – biodiversity, water, sequestration, and the revival of habitat. GIM however seems to be on the back burner and, for all practical purposes, replaced by a tree plantation drive called 'Ek Ped Maa Ke Naam' (A Tree in the Name of Mother). Launched in 2024, the government reports planting 140 crore saplings so far, but the latest forest data expose the gulf between a tree and a forest. The India State of Forest Report 2023 records a gain of 1,445 square kilometres in green cover but only 156 sq km of it is true forest. The rest, 1,289 sq km, is 'tree cover outside recorded forests'. Within the recorded forests, dense canopy is thinning into scrub. Ergo, India is planting more and foresting less.

Few examples encapsulate this as much as the controversy over the Aravallis. Arguably the country's most degraded range – its hillocks quarried away, its native growth overrun by the invasive 'vilayati kikar' (*Prosopis juliflora*) – it is now to be rescued by a 'Green Wall' of fresh planting. But these arboreal conscripts cannot undo the damage from years of mining, halt encroachment, or summon back an ecosystem that took millennia to form. Restoration is not landscaping. The CAG's instrument is accountancy: it can count hectares and rupees, not the worth of a living forest; and its assessment cannot always capture the practical challenges of implementing missions. However, its verdict still lands. A mission to restore India's forests has been allowed to wither while the state busies itself counting trees.

Static Dimensions & Policy Framework

- **National Action Plan on Climate Change (NAPCC, 2008):**
 - The GIM serves as the primary instrument for fulfilling India's Paris Agreement Nationally Determined Contribution (NDC) target: creating an additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent by 2030.
- **Constitutional & Statutory Mandates:**
 - **Article 48A (DPSP):** Mandates the State to protect and improve the environment and safeguard the nation's forests and wildlife.
 - **Article 51A(g) (Fundamental Duties):** Casts a duty on every citizen to protect and improve the natural environment, including forests and lakes.
 - **National Forest Policy, 1988:** Envisages maintaining 33% of India's total geographical area under forest/tree cover, emphasizing natural regeneration over artificial plantation.
- **Financial Mechanisms:**
 - **CAMPA Act, 2016:** Governs funds collected from user agencies diverting forest land for non-forest purposes; requires strict utilization for compensatory afforestation rather than generic landscaping.

Conclusion & Way Forward

India's ecological security depends on recognizing that a tree plantation is not a natural forest ecosystem. Moving forward, environmental policy must balance numerical targets with ecological integrity:

- **Focus on Ecological Restoration:** Shift policy emphasis from high-quantity sapling drives to restoring native species, soil hydrology, and dense canopy cover in degraded forest patches.
- **Inter-Agency Convergence:** Operationalize administrative convergence between GIM, CAMPA, and rural development programs to ensure stable funding and community-led monitoring.
- **Scientific Monitoring:** Utilize remote sensing, survival audit frameworks, and local Gram Sabha involvement under the Forest Rights Act (FRA) to track long-term biodiversity outcomes rather than initial planting figures.

UPSC Prelims Practice Questions

Question: Which one of the following best distinguishes forest restoration from tree plantation?

- A. Forest restoration involves only planting a larger number of trees.
- B. Forest restoration seeks to recover ecological structure, native biodiversity, soil and hydrological functions of a degraded ecosystem.
- C. Tree plantation always results in ecological degradation.
- D. Forest restoration is undertaken only inside legally notified forests.

Ans: B)

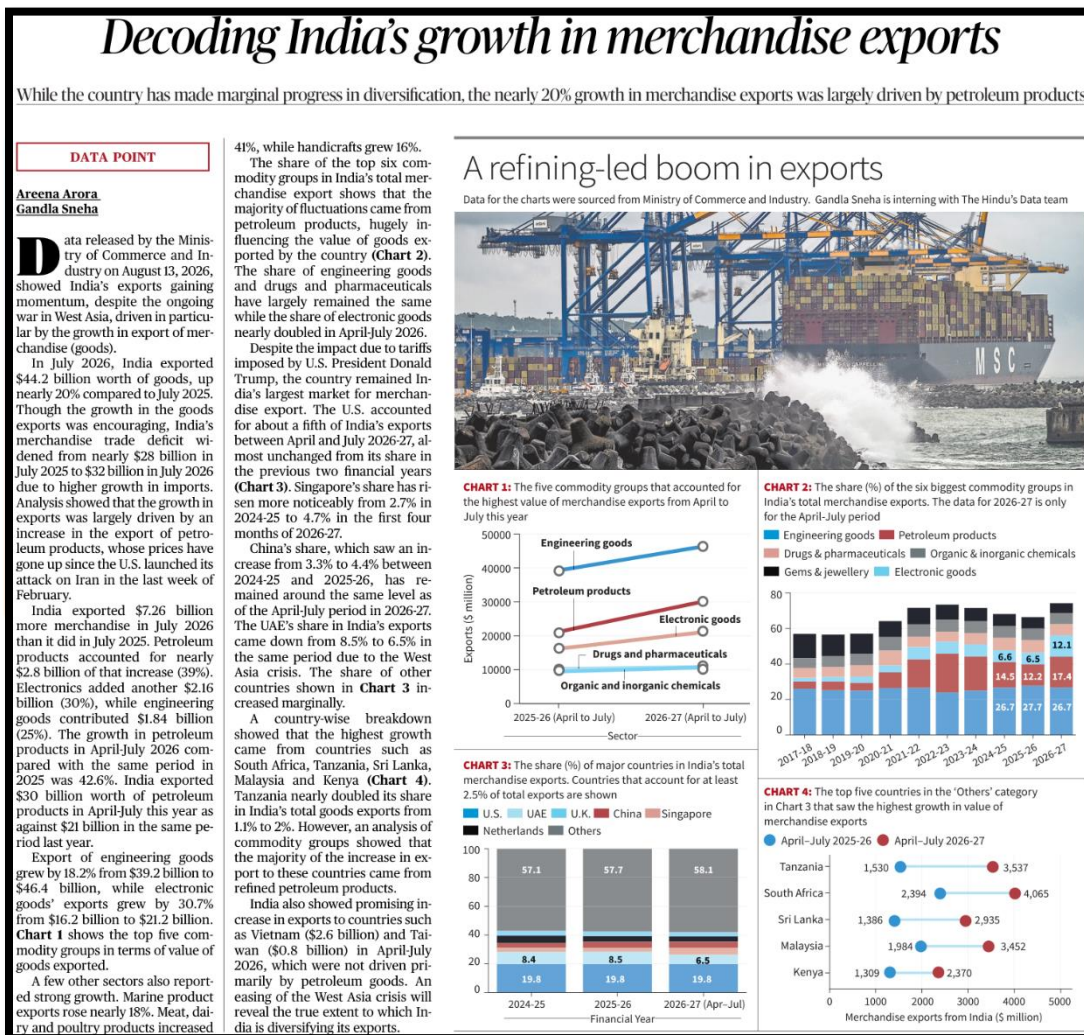
UPSC Mains Practice Questions

Question: "A tree plantation is not synonymous with forest restoration." Explain the distinction and discuss its significance for India's environmental policy. **(10 Marks, 150 Words)**



Page 09: GS III : Indian Economy / Preliminary Examination

Ministry of Commerce and Industry data (released August 13, 2026) shows India's merchandise exports growing nearly 20% year-on-year in July 2026 to reach \$44.2 billion. Despite this momentum, the merchandise trade deficit widened to \$32 billion due to a steeper rise in imports. A critical examination reveals that this export growth relies heavily on price fluctuations of refined petroleum products—exacerbated by geopolitical friction in West Asia—while underlying non-oil structural diversification remains gradual.



Core Drivers & Structural Trade Trends

- **Petroleum-Led Growth Spike:**
 - Petroleum products accounted for **39% (\$2.8 billion)** of the total \$7.26 billion year-on-year export increase in July 2026.

Daily News Analysis

- Cumulative petroleum exports jumped **42.6%** in April–July 2026 (\$30 billion) compared to the same period in 2025 (\$21 billion), largely driven by elevated global crude and product prices following U.S.–Iran conflict developments.
- **Manufacturing Expansion (Electronics & Engineering):**
 - **Electronics:** Contributed **30% (\$2.16 billion)** of the July export increase, showing a 30.7% growth in April–July 2026 (\$21.2 billion) and nearly doubling its overall share in India's export basket.
 - **Engineering Goods:** Contributed **25% (\$1.84 billion)** of July's growth, expanding 18.2% in April–July 2026 (to \$46.4 billion).
- **Widening Trade Deficit:**
 - Higher global energy prices and rising input costs expanded the merchandise trade gap from ~\$28 billion (July 2025) to **\$32 billion (July 2026)**.
- **Market Concentration & Geographical Diversification:**
 - **Primary Destination:** The United States remained India's largest market, taking roughly **20%** of total exports despite tariff challenges.
 - **Shift in Shares:** Singapore's market share expanded from 2.7% (2024–25) to 4.7% (April–July 2026), while the UAE's share fell from 8.5% to 6.5% due to West Asian disruptions.
 - **High-Growth Markets:** Export growth surged to non-traditional markets like South Africa, Tanzania, Malaysia, Kenya, and Sri Lanka (primarily driven by refined oil), alongside oil-independent growth in Vietnam (\$2.6 billion) and Taiwan (\$0.8 billion).

Static Dimensions & Economic Framework

- **Foreign Trade Policy (FTP) 2023 Goals:**
 - Targets \$2 trillion in total exports (\$1 trillion merchandise, \$1 trillion services) by 2030 through scheme rationalization and export hub creation.
- **Production-Linked Incentive (PLI) Schemes:**
 - Directly supported the rapid growth in electronic exports (e.g., smartphones, IT hardware) by expanding local manufacturing capacity and global integration.
- **Macroeconomic Impact on Current Account Deficit (CAD):**
 - Heavy dependence on refined petroleum exports acts as a double-edged sword; while it boosts gross export values during high-oil-price regimes, raw crude import bills widen the overall trade gap.

- **WTO Compliance & Tariff Vulnerabilities:**

- Concentration of exports in markets like the U.S. leaves Indian exporters exposed to non-tariff barriers, unilateral duties, and external geopolitical shocks.

Conclusion & Way Forward

India's export figures demonstrate strong short-term expansion, but structural resilience requires decoupling export growth from volatile crude oil prices. Moving forward, India should:

- **Scale Up High-Value Manufacturing:** Expand PLI coverage to high-value engineering components, pharmaceuticals, and specialized manufacturing to reduce reliance on petroleum-led value boosts.
- **Accelerate Trade Negotiations:** Conclude comprehensive Free Trade Agreements (FTAs) with emerging economies to sustain market access independent of regional geopolitical crises.
- **Focus on Strategic Import Substitution:** Deepen domestic supply chains in electronics inputs and industrial machinery to curb the expanding import bill and narrow the trade deficit.

UPSC Prelims Exam Study Questions

Question: Which one of the following best describes export diversification?

- A. Increasing exports of a single commodity to multiple countries
- B. Increasing the number and variety of products, sectors and markets contributing to exports
- C. Reducing imports through quantitative restrictions
- D. Increasing exports only through government subsidies

Ans:B)

UPSC Mains Exam Study Questions

Question: "High export growth does not necessarily imply structural strengthening of a country's external sector." Discuss with reference to India's recent merchandise export performance. **(10 Marks, 150 Words)**

Daily News Analysis

- Because ethanol contains 30–35% less energy per unit volume than standard gasoline, legacy engines without dynamic Powertrain Control Module (PCM) recalibration suffer 5% to over 10% drops in fuel economy.

- **Supply-Chain & Fuel Quality Risks:**

- Underground Storage Tanks (UST) at retail outlets face risk of water ingress during monsoon conditions, leading to bulk phase separation.
- Trace organic chlorides (from distillery processing) and excessive moisture levels in supply batches create high risks of injector and engine cylinder corrosion.

Static Dimensions & Policy Framework

- **National Policy on Biofuels (2018, amended 2022):**

- Targeted 20% ethanol blending in petrol by target year 2025–26 to advance energy self-reliance (Atmanirbhar Bharat).

- **Bharat Stage VI (Phase 2) Real Driving Emissions (RDE) Norms:**

- Mandated since April 2023; ensured newly manufactured vehicles (around 70 million units) possess certified factory-level material compatibility for E20.

- **Consumer Protection Act, 2019:**

- Protects consumer rights regarding product quality and choice; current market conditions lack unblended petrol (E0/E10) options, removing user discretion at retail pumps.

- **Environmental & Macroeconomic Objectives:**

- Aligns with India's Nationally Determined Contributions (NDCs) under the Paris Agreement by reducing vehicular greenhouse gas emissions and curbing the current account deficit (CAD).

Conclusion & Way Forward

To bridge the gap between national macro-energy goals and ground-level consumer protection, a balanced implementation strategy is necessary:

- **Reintroduce Protection-Grade Fuel (Dual-Dispensing):** Mandate Oil Marketing Companies (OMCs) to offer lower-blend or unblended petrol (E0/E10) alongside E20 at retail outlets to safeguard legacy vehicles.
- **Transparent Fuel Labelling & Quality Audits:** Require clear visual indicators of ethanol content at dispensing pumps and enforce strict batch-level testing for moisture and chloride thresholds.
- **Affordable Retrofit Solutions:** Incentivize the development and certification of affordable, aftermarket retrofit kits (ethanol-shielded fuel lines and seals) tailored for legacy two-wheelers.

- **Independent Empirical Testing:** Conduct comprehensive, independent real-world fleet studies across diverse climatic zones to establish long-term empirical data on component durability and vehicle performance.

UPSC Prelims Exam Study Questions

Question: With reference to ethanol blending in petrol in India, consider the following statements:

1. Ethanol can be produced from agricultural feedstocks.
2. Ethanol blending can reduce the quantity of petroleum required for a given volume of blended fuel.
3. Higher ethanol blending automatically eliminates India's dependence on crude-oil imports.
4. Ethanol blending can have implications for both energy security and agricultural markets.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 1, 2 and 4 only
- C. 2 and 3 only
- D. 1, 2, 3 and 4

Ans: B)

UPSC Mains Exam Study Questions

Question: Ethanol blending is simultaneously an energy-security policy, an agricultural policy and an environmental policy." Discuss. **(10 Marks, 150 Words)**



Taxing 'frivolous' industries will not fund India's science

Whenver concerns are raised about the lack of funding for Indian science, a solution often put forward is to tax "unintellectual" industries such as cinema, tourism, apparel, and perfumes. For example, only recently, an academic from one of India's leading research institutes suggested taxing the Indian Premier League (IPL), which, he argued, would magically generate "₹15 billion" for scientific pursuits; the "stroke of genius" was duly fawned over.

This reflects a common instinct: it is naturally hard not to want a share of the cake for a 'nobler' cause, when a 'frivolous' business makes profit in plain view.

A flawed proposition

It is equally easy to overlook the economic cascade effects of such frivolities. Organised sport, for example, generates employment across a multitude of allied industries: merchandise, food and beverage, broadcasting, physiotherapy and rehabilitation (sports science is a science too). This investment has undeniable trickle-down benefits, across more sports than one and beyond major cities.

Though well-intentioned, the myopic and fallacious "tax-this-to-fund-that" proposition needs to be dispelled immediately.

If 'profit' in the sports or film industries necessarily came at the expense of science, then the exercise in financial imputation should be very simple: of the \$5 billion in profit earned by a match or a movie, \$1 billion was made because a laboratory fell short of centrifuges. If that were true, then all scientists should refrain from watching movies or sports on government-subsidised campus Wi-Fi, as this would imply scientific funding flowing back to the entertainment industry. Luckily for them, the empirical evidence does not hold up: countries boasting a high expenditure on sport do not necessarily have poor scientific output, and vice versa. Besides, science is not an isolated pursuit: significant scientific input goes into making films or manufacturing textiles.

The disastrous economic experiments in India and around the world in the 20th century demonstrated that wealth is not a fixed, zero-sum pie: progress in X does not necessarily come at the expense of Y. As academics, we must refrain from making sweeping moralistic remarks, as though we know the right level of wealth surplus and how it should be spent better than the market does. Millions of dispersed individual decisions made by ordinary people contain more information than centralised academic or bureaucratic intelligence.

Moreover, how do we know that the state can reliably direct the proceeds towards science?



Ritvik Chaturvedi

Senior Research Fellow, Centre for Earth Sciences, Indian Institute of Science (IISc), Bengaluru

The way forward is to liberalise the channels through which money and capital flow into academia and reduce dependence on the government

Government spending is the prerogative of bureaucrats and politicians, who are inevitably insulated from the consequences of such expenditure.

Should the money be directed towards science, must it be distributed equally among all institutes and laboratories across the country, or apportioned according to productivity? If the latter, how will productivity be measured, and by whom? Some scientists appointed as advisers to the Department of Science and Technology? Would they not favour their colleagues and collaborators?

But, why only science? Just as scientists can make a fair claim for the setting up of state-of-the-art research laboratories, surgeons could demand better hospitals in Tier-3 towns, and policemen could call for better protective gear. Given the same pool of government money, how does one choose among these equally valid, competing claims? Politicians are notorious for basing such decisions on the electoral strength of each group, while academics form factions among themselves: microbiologists might grumble about theoretical physicists receiving disproportionately high funding, much to the delight of funding agencies.

If 'only science', then what kind of science? Should the money go towards buying more microscopes, gene sequencers, or chromatography equipment?

Most scientists would, credulously, want these decisions to be left to scientists themselves: a grand delusion, for no subsidy is ever unconditional. A government that provides a fertilizer subsidy will ensure that it is used only to purchase fertilizers, and will go to extreme lengths to define what a fertilizer is. The subsidy giver has historically viewed the subsidy recipient as a potential embezzler. State funding for science is no different.

What is 'allowed' instead of 'needed'

Government funding for science is, by definition, categorised into watertight compartments, for example, electronics, chemical reagents, consumables, travel grants, and equipment. Laboratories that do not need that extra bottle of hydrogen chloride but desperately need a computer monitor are often unable to make the purchase because the money has been rigidly earmarked. Once, a laboratory was allowed to purchase a server under "electronics", but not a graphics card because, for some inexplicable reason, it fell under "consumables" rather than "electronics". If a scientist does not spend all the money allocated to her in a financial year, she may receive less funding in the next one. This absurd incentive produces colossal wastage, as what is "allowed" is bought instead of what is "needed", often at the cheapest possible price.

Consequently, precious time is wasted learning tricks to circumvent these restrictions, much like companies did during the Licence Raj. Experiments are often put on hold while scientists navigate cumbersome procurement rules, particularly towards the end of each financial year.

Steps to take

Theoretically, the money is there, but it is squandered because its expenditure is predetermined by archaic rules that the bureaucracy has little incentive to change. Removing these restrictions would free up considerable resources for their intended use. Procurement aside, even the recruitment of scientists is governed by the archaic University Grants Commission Act (1956), contributing to India losing some of its best scientists to opportunities overseas.

Another indirect and "less bad" measure for expanding available funds would be to remove the Goods and Services Tax and steep import duties on scientific equipment. The rent on knowledge creation slows research and stagnates the circulation of money, which ultimately returns to the government.

Right now, India also places crippling restrictions on private investment in science. Strict compliance requirements under CSR rules incentivise short-term, low-risk research projects. Foreign Contribution (Regulation) Act procedures remain tedious, and many laboratories struggle to navigate the paperwork required to attract foreign funding. This is unfortunate, as private endowments have a greater stake in the success of research than any anonymous bureaucrat ever would.

In a bid to promote domestic manufacturing, the government has resorted to import substitution, a measure that serves only to insulate local industries from global competition while failing to deliver world-class products.

The mandatory adoption of the Government e-Marketplace (GeM) has been a death knell, further delaying procurement and forcing scientists to settle for cheaply made Indian equipment that looks identical on paper but falls short of international standards. Often, they spend time identifying "features" available only in foreign-made products so that they can be allowed to purchase them.

If a venture can be a great success in attracting international talent by virtue of being taxed less, so can other endeavours. For India to be at the forefront of science, the mechanism is to liberalise the bottlenecks through which money and capital somehow manage to trickle into academia and reduce dependence on the government, rather than taxing the few geese that lay the golden eggs.

GS Paper III: Science and Tech

UPSC Mains Exam Practice Questions: "India's challenge in scientific research is not merely inadequate funding, but inefficient utilisation and governance of available resources." Discuss. (10Marks, 150 Words)

Context : The article critically addresses the proposal to levy special taxes on lucrative "frivolous" sectors (such as entertainment, sports like the IPL, and luxury goods) to fund Indian scientific research. It argues that funding science through targeted sectoral taxation is economically flawed, morally arbitrary, and misses the real structural bottlenecks crippling Indian R&D: bureaucratic rigidity, archaic procurement norms, tax burdens, and barriers to private investment.

Key Issues Identified in the Editorial

- **The Zero-Sum Fallacy of "Tax-This-to-Fund-That":**
 - Wealth creation is non-zero-sum; profits in sports or cinema do not come at the expense of scientific labs.
 - Entertainment and sports generate significant economic spillovers, employment, and allied industry growth (e.g., sports medicine, broadcasting, logistics).
- **Bureaucratic Inefficiency & Centralized Allocation:**
 - Government funding comes with rigid micro-management, rigid budgetary compartmentalization (e.g., rigid "electronics" vs. "consumables" rules), and the "use-it-or-lose-it" annual fiscal trap leading to wasteful expenditure.
 - Anonymous state allocation struggles to prioritize competing public demands (e.g., health vs. police vs. science) objectively.
- **Structural Bottlenecks in Procurement & Funding:**
 - Mandatory adoption of platforms like the **Government e-Marketplace (GeM)** and aggressive import substitution force labs to accept inferior equipment, delaying research.
 - High GST rates and steep import duties on specialized scientific apparatus act as a "tax on knowledge creation."
- **Obstacles to Private & International Capital:**

Daily News Analysis

- Complex Foreign Contribution Regulation Act (FCRA) compliance and rigid Corporate Social Responsibility (CSR) norms disincentivize long-term, high-risk private research funding.

Related Static & Policy Dimensions

1. Science & Technology and R&D Financing

- **Gross Expenditure on R&D (GERD):** India's GERD remains stagnant at around **0.6% to 0.7% of GDP**, significantly lower than global peers like the US (3.4%), South Korea (4.8%), and China (2.4%).
- **Private Sector Participation:** Unlike developed economies where the private sector contributes over 70% of R&D spend, in India, the central and state governments account for nearly 60% of total R&D funding.
- **National Research Foundation (Anusandhan NRF) Act, 2023:** Enacted to seed, grow, and promote R&D across universities, with a major emphasis on attracting private sector investments (targeting ₹36,000 crore out of its total ₹50,000 crore budget from non-government sources).

2. Governance, Public Policy & Institutional Reforms

- **Procurement & Administrative Reforms:** Archaic recruitment under the UGC Act (1956) and restrictive financial rules limit flexibility and cause brain drain.
- **Ease of Doing Research:** Similar to "Ease of Doing Business," reducing compliance burdens under FCRA and CSR rules is vital for research autonomy.

Major Recommendations / Way Forward

- **Fiscal Rationalization:**
 - Exempt scientific equipment, reagents, and inputs from heavy GST and import duties to lower research costs.
 - Rationalize GeM procurement norms to allow researchers flexibility in buying high-precision international equipment when domestic alternatives fall short.
- **Administrative & Financial Flexibility:**
 - Replace rigid line-item budgeting with flexible, multi-year grant systems to prevent year-end wasteful spending.
 - Autonomy in fund utilization should be paired with outcome-based evaluation rather than micro-managing input receipts.
- **Unlocking Private & Global Capital:**
 - Simplify FCRA procedures for academic research institutes to receive international grants.
 - Amend CSR rules to allow funding for high-risk, long-term fundamental research rather than just short-term social projects.

- **Institutional Modernization:**

- Overhaul the University Grants Commission (UGC) framework for academic recruitment to attract and retain top-tier global scientific talent.

Conclusion

Taxing productive commercial industries to fund scientific research is an inefficient economic shortcut that fails to address root causes. India's scientific deficit is not merely a revenue problem, but a structural and governance issue. True scientific leadership requires liberalizing institutional bottlenecks, modernizing procurement systems, easing tax burdens on research tools, and creating an enabling environment for private venture capital and global endowments. Reducing reliance on bureaucratic discretion while empowering researcher autonomy is the sustainable path toward an Atmanirbhar scientific ecosystem.

