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# The Hindu Important News Articles & Editorial For UPSC CSE

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## Edition : International Table of Contents



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## Page 07 : GS III : Indian Economy / Prelims Exam

As India marches towards its target of 300 GW solar capacity by 2030 and Net Zero by 2070, the competition for land between "food security" and "energy security" has intensified. Agri-photovoltaics (AgriPV), the dual-use of land for solar power and agriculture, offers a synergistic "land-neutral" solution. By turning farms into "dual-purpose powerhouses," India can address the land-premium challenge while simultaneously doubling farmer incomes and enhancing climate resilience.

# How agriPV can turn India's farms into dual-purpose powerhouses

India's ambitious energy transition goals — to have 300 GW of installed solar capacity by 2030 and achieve net-zero emissions by 2070 — put land at a premium, and utility-scale solar projects require large tracts of land while agriculture is already under pressure from competing land use; agri-photovoltaics can ameliorate this conflict

Shantanu Roy

In the 2026-27 Budget, the outlay for the PM-KUSUM scheme nearly doubled to ₹5,000 crore, signalling the government's renewed emphasis on increasing solar power production centred on India's farmers. Specifically, the scheme aims to provide energy and water security to farmers, enhance incomes, and decarbonise the farm sector through decentralised solar pumps and power plants.

But as the scheme evolves, India also faces a question: how can solar be expanded on agricultural land without compromising food security?

Agri-photovoltaics (agriPV) is emerging as a promising answer to this question. AgriPV integrates solar systems with farming, allowing farmers to generate electricity and cultivate crops on the same parcel of land. The panels are mounted at a suitable height to allow farm operations below, and are spaced between crop rows or integrated into greenhouses to minimise conflict between agricultural production and energy generation.

### Selecting right crops

The designs vary by crop and region. Elevated systems have panels mounted a few metres above ground to allow crops to grow below. Row-based systems have panels positioned between crop rows to minimise shading. Vertical systems use upright panels that can capture sunlight from both sides. Greenhouse-integrated systems feature solar panels on roofs or walls to maintain a controlled growing environment. The suitability of a design also depends on the local climate, irrigation practices, and the crop. So systematic and region-specific planning is essential to optimise both agricultural and energy yields.

Careful crop selection is also key to the success of agriPV systems because the amount of sunlight available changes based on how solar panels are placed. Shade-tolerant crops generally perform well in partially shaded areas under solar panels while crops that need more sunlight grow better in the spaces between rows of panels.

Crop selection also varies across India's diverse agro-climatic regions. For instance, suitable crop options include tomato, onion, garlic, turmeric, ginger, leafy vegetables, and tulsi in Madhya Pradesh, and ragi, jowar, grapes, tomato, potato, chillies, banana, and brinjal in Karnataka and Maharashtra – all of which can perform well in agriPV systems.

Beyond technical considerations such as crop selection, the scalability of agriPV hinges on developing viable business models. Farmers can own and operate agriPV systems, use a portion of the electricity generated, and sell the surplus. With the help of Farmer Producer Organisations or cooperatives, multiple farmers can also aggregate land and collectively develop projects, enhancing their bargaining power and access to finance.

Private developers could also lease farmland and share revenues or pay fixed rents to farmers. Alternatively, State governments or public agencies could develop agriPV systems to support local energy needs.

Sheep graze under rows of solar panels on a farm. Representative image. PUBLIC DOMAIN

### Why agriPV matters for India

India's ambitious energy transition goals – to have 300 GW of installed solar capacity by 2030 and achieve net-zero emissions by 2070 – put land at a premium. Utility-scale solar projects require large tracts of land while agriculture is already under pressure from competing land uses.

AgriPV can ameliorate this conflict. With more than half of India's land under agriculture, dual-use deployment is valuable. And in an economy that depends heavily on agriculture, the technology's appeal lies in both farmers diversifying their incomes and producing clean energy. Farmers can earn from selling electricity, leasing land or sharing revenues while continuing to cultivate.

AgriPV also delivers environmental co-benefits. In certain agro-climatic conditions, partial shading can reduce evapotranspiration – the combined loss of water to the atmosphere through evaporation and plant transpiration – and soils retain more moisture, thus enhancing the overall water-use efficiency. Solar panels can also protect crops against extreme heat, rainfall, and hail. By lowering the farm's need for diesel, such systems can also support rural entrepreneurship and local economic growth. AgriPV can power ancillary services as well, including cold storage, food processing units, and chaff cutters, strengthening rural value chains. However, this requires clear governance frameworks, tariffs, and accessible finance.

**AgriPV's large-scale adoption in India faces economic, regulatory, and institutional barriers, which include high capital costs, lack of regulatory clarity and lack of design benchmarks**

### Status in India

There are around 50 pilot agriPV installations nationwide, with various panel-crop combinations and economic feasibility under evaluation. Recent policy discussions have also increasingly referenced agriPV but large-scale replication has yet to commence. Both policymakers and experts need more empirical evidence across agro-climatic zones to say which configurations, crop matrices, and financial frameworks are most suitable.

The technology's large-scale adoption in India does face economic, regulatory, and institutional barriers. Elevated structures and specialised mounting systems significantly increase capital costs, well above those of conventional solar systems. A crop's responses to shading can vary and poorly designed systems may even reduce agricultural yields.

System ownership between farmers and developers could also raise doubts, particularly if long-term land rights and revenue-sharing arrangements are not fully clear. Land classification, grid connectivity, and tariffs hinge on regulatory clarity and the lack of design benchmarks adds to investor uncertainty.

### Policy pathways

With the right policy support, agriPV has the potential to scale beyond pilot projects. Recent consultations on PM-KUSUM 2.0 have indicated that the government may include agriPV in a proposed 'National Agri-photovoltaics Mission' as a dedicated 10-GW component, with viability gap funding to offset the capital costs. Such measures could remarkably improve the bankability of agriPV projects and reduce the financial risk. Clearly recognising dual-use configurations within PM-KUSUM 2.0 could help align agriPV with farmer-centric solarisation. States can reinforce this by identifying suitable clusters, streamlining approvals, and integrating agriPV into farmer training and advisory programmes.

As India rapidly advances in its energy transition, agriPV offers a pathway for renewable energy to complement agricultural productivity. Its inclusion under PM-KUSUM 2.0 could move it from scattered pilots to a more structured, scalable model, strengthening farmer incomes and easing land pressures.

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### THE GIST

Agri-photovoltaics (AgriPV) integrates solar systems with farming, allowing farmers to generate electricity and cultivate crops on the same parcel of land

The panels are mounted at a suitable height to allow farm operations below, and are spaced between crop rows or integrated into greenhouses to minimise conflict between agricultural production and energy generation

In an economy that depends heavily on agriculture, the technology's appeal lies in both farmers diversifying their incomes and producing clean energy

Recent consultations on PM-KUSUM 2.0 have indicated that the government may include agriPV in a proposed 'National Agri-photovoltaics Mission' as a dedicated 10-GW component, with viability gap funding to offset the capital costs

**1. Key Features of AgriPV Systems**

AgriPV is not a one-size-fits-all technology; its design varies based on the agro-climatic zone and crop type:

**Elevated Systems:** Panels are mounted 2–3 meters high to allow machinery and light to reach crops below.

**Inter-row/Row-based:** Panels are placed in gaps between crop rows to minimize shading.

**Vertical Bifacial Systems:** Upright panels that capture sunlight from both sides, ideal for minimizing the land footprint.

**Greenhouse Integrated:** Panels are built into the roofs or walls of polyhouses to control the microclimate.

**2. Strategic Importance for India**

**Land Use Optimization:** With over 50% of India's land under cultivation, AgriPV prevents the diversion of fertile land for utility-scale solar parks.

**Economic Security:** Shifts farmers from being just 'Annadata' (food providers) to 'Urjadata' (energy providers), creating a secondary, stable revenue stream.

**Environmental Co-benefits:**

**Reduced Evapotranspiration:** Shading helps soil retain moisture, increasing water-use efficiency by nearly **20-30%**.

**Microclimate Regulation:** Protects sensitive crops from extreme heatwaves, hailstorms, and UV radiation.

**Rural Industrialization:** Provides local power for cold storage, food processing, and irrigation pumps, reducing the carbon footprint of the rural supply chain.



**3. Challenges to Large-scale Adoption**

**High Capital Expenditure (CapEx):** Specialized mounting structures and elevated heights increase costs by **15–25%** compared to conventional ground-mounted solar.

**Technical Uncertainties:** Lack of long-term empirical data on yield impacts for staple crops like paddy and wheat in Indian conditions.

**Regulatory Hurdles:** Ambiguity in land-use classification (Agriculture vs. Industrial) and inconsistent state-level wheeling/banking charges.

**Financing:** Small and marginal farmers often lack the collateral or credit rating required for high-interest solar loans.

**4. Related Static Concepts**

| Concept | Significance to AgriPV |
|---|---|
| **PM-KUSUM Scheme** | Specifically **Component-A** (Decentralized solar plants) and the newly proposed **PM-KUSUM 2.0** with a 10 GW AgriPV target. |

| Concept | Significance to AgriPV |
|---|---|
| **Agro-Climatic Zones** | Crop selection (e.g., shade-tolerant Turmeric vs. light-hungry Millet) depends on India's 15 distinct zones. |
| **Photosynthetically Active Radiation (PAR)** | The science of how much light crops need vs. how much solar panels can harvest without killing the crop. |
| **Net Metering vs. Feed-in Tariffs** | Economic mechanisms for selling surplus power back to DISCOMs. |

**Way Forward: Policy Pathways**

**National Agri-PV Mission:** A dedicated sub-mission under PM-KUSUM 2.0 with Viability Gap Funding (VGF) to offset higher CapEx.

**Standardization:** The Ministry of Agriculture and MNRE should release guidelines on "Dual-Use" norms, ensuring that power generation does not come at the cost of 100% crop failure.

**FPO Integration:** Leveraging Farmer Producer Organizations to aggregate land and provide collective bargaining power for financing and technology.



**Conclusion**

Agri-photovoltaics represents a paradigm shift from a "trade-off" mindset to a "synergy" model. For a land-constrained country like India, AgriPV is not just an energy solution but a socio-economic tool for rural transformation. By integrating this technology into the national energy fabric, India can ensure that its journey toward a green future is both inclusive and food-secure.

**UPSC Prelims Exam Practice Question**

**Ques: Which of the following schemes is most directly related to decentralized solar energy generation in agriculture?**

(a) PMFBY

(b) PM-KUSUM

(c) PMKSY

(d) National Solar Mission

**Ans: b)**

**Ques:** Examine the role of AgriPV in doubling farmers' income and promoting rural industrialization in India. **(150 Words)**

## Page 08 : GS II : Indian Polity / Prelims Exam

The term "Digital Exile" refers to the systemic removal of individuals or entities from the digital public square through arbitrary blocking of their social media accounts. In the context of India's evolving digital governance, the shift from blocking specific "problematic" URLs to entire user accounts represents a significant escalation in state-led censorship. This trend raises fundamental questions about the balance between National Security (Article 19(2)) and the Right to Freedom of Speech and Expression (Article 19(1)(a)).

### 1. The Legal Framework and Evolution

**Section 69A of the IT Act, 2000:** Grants the government power to issue directions to block public access to information in the interest of sovereignty, integrity, defense of India, or public order.

**The 2009 Blocking Rules:** These rules provide the procedure for blocking. **Rule 16** specifically mandates strict confidentiality regarding blocking requests and actions.

**The "Shreya Singhal" Precedent (2015):** The Supreme Court upheld Section 69A only because it contained procedural safeguards, such as the right to a hearing and the requirement for "reasoned orders."

### 2. Critical Concerns Raised

**Dilution of Safeguards:** The government frequently invokes the "confidentiality" clause (Rule 16) to withhold reasons for blocking from the affected parties. This prevents individuals from challenging the order in court, effectively neutralizing Judicial Review.

**Executive Overreach:** The Review Committee, meant to oversee blocking orders, consists entirely of executive members. The article notes it has rarely, if ever, overturned a government order, raising doubts about its independence.

**Doctrine of Proportionality:** Blocking an entire account (Digital Exile) for a few specific posts is viewed as an excessive measure. In legal terms, the "least restrictive measure" should be used to achieve the objective.

**Digital exile**

The government could be creating a system of arbitrary censorship

A decade-long trend in digital governance in India crescendoed last week when a slew of social media accounts operated by independent activists and journalists were blocked apparently for criticising the Union government and Prime Minister Narendra Modi over his government's West Asia policies and the LPG crisis. In seven years, from 2014 to 2021, the number of URLs, posts, and accounts blocked ballooned from 470 to 9,800; since then, there is evidence that entire accounts, especially if they were publishing politically unfavourable comments, were being blocked. There was a wave of censorship during the farmers' protest in 2020-21; the government restored many accounts after international outcry but this also demonstrated that it was not beyond mass censorship. Similarly, the government used emergency powers under the IT Rules to block links to a BBC documentary in 2023, which also expanded the definition of what constituted a "threat to public order". But when Twitter (now X) challenged several blocking orders, between 2021 and 2022, in the Karnataka High Court, the High Court dismissed the plea and fined Twitter, further emboldening the state to censor accounts.

In *Shreya Singhal* (2015), the Supreme Court of India upheld Section 69A of the IT Act 2000 precisely because of its procedural safeguards, including requiring reasoned orders and judicial review. In practice, however, the government has been diluting the safeguards through an expansive use of Rule 16 of the 2009 Blocking Rules, which requires blocking proceedings to be confidential. When this stipulation is invoked to withhold blocking orders or their reasons from affected parties, it undermines their ability to challenge the action in court, eroding the very safeguards that justified the constitutionality of Section 69A. The 2009 Rules also require blocking orders to be reviewed by a committee composed under the IT Rules 2009, yet this is an entirely executive body and has never overturned a government blocking order. In effect, the government is openly and systematically bypassing the right to be heard and violating the doctrine of proportionality. Rule 16 is a procedural rule, yet the government is using it to override the constitutional right to free speech while shielding itself from judicial review. A person's entire account being blocked amounts to a digital exile, removing the person from the public square, which is a hallmark of an authoritarian government rather than of a liberal democracy. The government's plan to decentralise blocking powers to multiple Ministries could effectively create a regime of arbitrary censorship, where any department can silence a critic without the specialised oversight, however flawed, of the IT Ministry.

**Decentralization of Power:** The proposal to allow multiple ministries (beyond the IT Ministry) to issue blocking orders could lead to a fragmented and arbitrary censorship regime lacking specialized oversight.

**3. Related Static Concepts**

| Concept | Description / Relevance |
|---|---|
| **Article 19(1)(a)** | Freedom of Speech and Expression; the bedrock of a "liberal democracy." |
| **Reasonable Restrictions** | Article 19(2) lists grounds like Public Order and Sovereignty where speech can be limited. |
| **Doctrine of Proportionality** | A principle stating that the nature and extent of the restriction must be proportional to the objective sought. |
| **Principles of Natural Justice** | Specifically Audi Alteram Partem (hear the other side). Blocking without notice violates this. |
| **Rule of Law** | Ensures that government action is governed by clear, public laws rather than arbitrary whims. |



**4. Impact on Democratic Fabric**

**Chilling Effect:** Arbitrary blocking creates a climate of fear, where journalists and activists self-censor to avoid "digital exile."

**Erosion of the Public Square:** Social media has become the modern equivalent of the "town square." Permanent removal from these platforms limits a citizen's ability to participate in democratic discourse.

**Global Standing:** Frequent internet shutdowns and account blocks impact India's image in international indices regarding press freedom and digital rights.

**Conclusion**

While the state has a legitimate duty to curb misinformation and threats to public order, the process must remain transparent, accountable, and proportional. Procedural rules (like Rule 16) should not be used to bypass substantive constitutional rights. As the Supreme Court emphasized in Shreya Singhal, the constitutionality of censorship hinges entirely on the presence of robust safeguards. Without them, digital governance risks veering toward "arbitrary censorship.

**UPSC Prelims Exam Practice Question**

**Ques: "Chilling Effect" in the context of free speech refers to:**

(a) Restriction due to weather conditions

(b) Fear of legal consequences leading to self-censorship

(c) Ban on digital platforms

(d) Blocking of internet services

**Ans: (b)**

## Page 09 : GS II : Social Justice / Prelims Exam

The 2026-27 Union Budget and the India-EU Free Trade Agreement (FTA) mark a watershed moment for India's traditional medicine sector. By nearly doubling the AYUSH Ministry's budget to ₹4,408 crore and securing international mobility for practitioners, India is transitioning Ayurveda from a "cultural heritage" to a "global healthcare powerhouse." However, this expansion brings a critical challenge: bridging the gap between traditional faith and modern scientific evidence.

# *India must use the AYUSH opportunity*

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The 2026-27 Union Budget and India's new Free Trade Agreement (FTA) with the European Union (EU) signals Ayurveda's ambitious leap into the global mainstream. The Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH) Ministry's budget has nearly doubled in the past five years, reaching ₹4,408 crore this year. Further, Finance Minister Nirmala Sitharaman has announced three new All-India Institutes of Ayurveda, aiming to set top standards for traditional medicine, similar to how AIIMS leads modern medicine in India. These institutes will not just treat patients, they will teach and conduct advanced research as well. The Budget also turbo-charges the National AYUSH Mission, raising its funding by 66% to modernise dispensaries, establish AYUSH clinics inside government hospitals, and upgrade drug-testing laboratories.

Together, these measures reflect an effort to bring traditional medicine into the mainstream health ecosystem rather than treat it as an alternative silo.

**Global reach**

If the Budget gives Ayurveda depth within India, the India-EU FTA gives it global reach. In EU countries that don't specifically regulate traditional medicine, the trade deal allows Indian AYUSH practitioners to provide their services using qualifications obtained in India. It guarantees that Indian companies can open Ayurvedic clinics across Europe without the fear of sudden policy reversal. It also sets up a system where Indian safety certifications could eventually be accepted in Europe, which means that products approved in India might not need extra testing.

However, this policy is also a moment which will test whether the country can merge faith in heritage with the discipline of evidence. For this is not just an economic expansion; it is a structural repositioning of Ayurveda within India's health system and the global market. When the alternative moves from local clinics to international markets, it enters regulatory and scientific arenas that demand proof. These treatments, understood as Traditional, Complementary, and Alternative Medicine (TCAM), will be evaluated within stringent regulatory and vigilance frameworks. This is precisely the moment when regulatory harmonisation becomes essential. If AYUSH products are to circulate in EU markets, they must meet international standards of safety, manufacturing quality, and claims regulation. Global ambition demands scientific accountability.

For Ayurveda and other AYUSH systems to enter the global mainstream credibly, they must submit to rigorous, independent, and transparent scientific evaluation

**Need for scientific evidence**

If claims outpace evidence, India risks legal disputes, reputational damage, and the reinforcement of stereotypes about 'unscientific traditionalism.' For Ayurveda and other AYUSH systems to enter the global mainstream credibly, they must submit to rigorous, independent, and transparent scientific evaluation conducted by third-party research organisations. At present, many assessments are funded, designed, or overseen by the same Ministry that promotes AYUSH, creating a structural conflict of interest. Global credibility requires independently funded clinical trials, transparent methodologies, peer-reviewed publications, and the willingness to publish negative findings.

A common defensive move in debates around traditional medicine or cultural knowledge is to frame scientific scrutiny as colonial bias or Western epistemic dominance. Certainly, the history of colonial medicine in India involved the marginalisation and delegitimisation of local systems of healing. While that history should not be forgotten, it does not follow that all demands for empirical evaluation are acts of epistemic domination. Demanding evidence is not cultural betrayal, and scientific evaluation does not diminish tradition.

**Coexisting systems**

Furthermore, TCAM systems endure not simply because of cultural loyalty, but because they carry different imaginations of the body, health, and illness. To engage with TCAM seriously is to recognise that they are not merely collections of remedies but coherent epistemologies. Systems such as Ayurveda are organised around ontological commitments about what the body is, how it is constituted, and how disorder emerges. The body in Ayurveda, for instance, is not a collection of discrete organs but an interdependent system embedded in environment, diet, season, and social life. Health is a state of equilibrium across physiological, psychological, and ecological registers, and illness is a disturbance in patterned relations rather than a discrete lesion.

This stands in contrast to modern medicine, which has historically been grounded in anatomical localisation. Biomedicine excels at identifying specific causal mechanisms and intervening with precision at targeted sites. TCAM systems, by contrast, often operate through systemic logics. But the question is not biomedicine versus TCAM. The conceptual frames in TCAM do not need to replace biomedicine to be valuable. They can function as counterpoints that expand questions about what it means to be healthy. They offer alternative models of embodiment – models in which the body is ecological and dynamic.

Thus, the goal is not substitution but dialogue. In that dialogue lies the possibility of strengthening scientific inquiry across the spectrum of care. Therefore, public investment should fund intellectual openness and scientific freedom. Global ambition will be sustained not by assertion, but by evidence, transparency and the courage to be rigorously examined.

### 1. Key Budgetary & Policy Shifts

**Institutional Excellence:** The establishment of three new All-India Institutes of Ayurveda (AIIA) aims to standardize traditional medicine, mimicking the AIIMS model for biomedicine.

**Infrastructure Modernization:** A 66% funding boost to the National AYUSH Mission (NAM) to upgrade drug-testing labs and integrate AYUSH clinics within government hospitals (Integrative Medicine).

**Global Market Access:** The India-EU FTA allows Indian practitioners to operate in Europe using domestic qualifications and creates a pathway for "Mutual Recognition Agreements" (MRAs) on safety certifications.

### 2. The Challenge of "Scientific Accountability"

The author highlights a "structural conflict of interest" where the same Ministry promotes and evaluates AYUSH. To achieve global credibility, the sector must adopt:

**Independent Evaluation:** Shifting from Ministry-funded research to third-party, transparent scientific trials.

**Methodological Rigor:** Peer-reviewed publications and the "courage to publish negative findings" to counter stereotypes of "unscientific traditionalism."

**Regulatory Harmonization:** Meeting stringent EU standards for safety, manufacturing quality, and claims regulation.

### 3. Conceptual Synergy: Biomedicine vs. TCAM

Traditional, Complementary, and Alternative Medicine (TCAM) systems offer a different "epistemology" (theory of knowledge) of the body:

| Feature | Modern Biomedicine | AYUSH (e.g., Ayurveda) |
|---|---|---|
| **Focus** | Anatomical localization; discrete organs. | Systemic logic; interdependent systems. |
| **Approach** | Targeting specific causal mechanisms. | Equilibrium of physiological & ecological factors. |
| **View of Illness** | A discrete lesion or pathogen. | A disturbance in patterned relations (Diet, Season, Environment). |

### 4. Related Static Concepts

| Concept | Significance to the Article |
|---|---|
| **National Health Policy (NHP)** | Advocates for "Mainstreaming of AYUSH" and functional integration with modern medicine. |

| Concept | Significance to the Article |
|---|---|
| **2017** | |
| **PM-JAY (Ayushman Bharat)** | The potential for including AYUSH treatments under universal health coverage. |
| **Intellectual Property Rights (IPR)** | Protecting Traditional Knowledge (TK) through the **Traditional Knowledge Digital Library (TKDL)** to prevent bio-piracy. |
| **Epidemiology vs. Epistemology** | Understanding health through data (modern) vs. understanding health through holistic systems (traditional). |

**5. The "Integrative Medicine" Path**

The goal is not to substitute biomedicine with AYUSH, but to foster a **dialogue**.

**Biomedicine** excels in acute care, surgery, and emergency interventions.

**AYUSH** excels in chronic disease management, preventive wellness, and lifestyle-based disorders.

**Conclusion**

India's AYUSH opportunity lies in its ability to prove that "tradition" and "science" are not antithetical. By submitting to rigorous, independent evaluation and leveraging the new FTA, India can lead a global shift toward Holistic Health. Global ambition must be backed by evidence and transparency to ensure that Ayurveda becomes a permanent fixture in the global health ecosystem rather than a passing trend.



**UPSC Prelims Exam Practice Question**

**Ques: Which of the following best describes "Integrative Medicine"?**

(a) Replacement of modern medicine by traditional systems

(b) Parallel functioning without interaction

(c) Combination of modern medicine and traditional systems based on strengths

(d) Exclusive use of herbal treatments

**Ans: b)**

**UPSC Mains Exam Practice Question**

**Ques:** Examine the role of AYUSH in achieving universal healthcare in India. **(150 Words)**

## Page 11 : GS II & III : International Relations and Indian Economy / Prelims Exam

The current West Asia crisis and its impact on India's LPG supply highlight a recurring vulnerability in India's energy security. This "energy stress" recalls the visionary but neglected 1955 proposal by Syed Husain Zaheer for a national coal-based gas grid. While dismissed initially, the plan's logic was vindicated by the 1973 Oil Shock, serving as a historical lesson on the cost of policy inertia and the importance of indigenous technology in achieving Atmanirbhar Bharat in energy.

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# As West Asia war threatens gas supply, remembering a gas grid India never built

India's push for the National Coal Gasification Mission to secure energy independence recalls a visionary 1955 proposal by Syed Husain Zaheer; initially dismissed by policymakers, Zaheer's plan for a national gas grid was vindicated by the 1973 global oil shock

Dinesh C Sharma

The ongoing war in West Asia has plunged the world into a deep energy crisis. In India, the availability of domestic fuel, LPG, has been hit due to the disruption in supplies from the Persian Gulf. The global energy crisis is reminiscent of the Oil Shock of 1973, when members of the Organisation of Petroleum Exporting Countries (OPEC) cut oil production and slashed exports to protest the U.S.'s support for Israel in the Yom Kippur War. India responded by exploring alternative sources of energy, offshore oilfields in Bombay High, and experimenting with new technologies.

One technological option that found a second life this way was coal gasification.

The idea of using gasified coal to meet some of India's fuel needs first emerged in 1955 when Syed Husain Zaheer, director of the Regional Research Laboratory Hyderabad (RRLH) – now the CSIR-Indian Institute of Chemical Technology (IICT) – and later director-general of CSIR, submitted a plan to Prime Minister Jawaharlal Nehru for a cross-country national gas grid. The plan envisaged the use of fuel gas produced from gasifying of coal and its supply through pipelines for domestic and industrial use. Zaheer believed fuel gas of high calorific value could be produced by completely gasifying non-caking fuels such as shale coal, lignite, and bituminous coal, all found in India.

**'Town Gas Supply Scheme'**

The technology involved gasifying coal using high pressure to form hydrocarbons and using oxygen to maintain a high thermal efficiency. It started with converting the sulphur present in the coal to hydrogen sulphide ($H_2S$) and small amounts of carbonyl sulphide (COS). Sulphur compounds are then removed from the gas stream and the separated acid gas is further processed to recover elemental sulphur.

The gas was further cleaned using water scrubbing to remove any remaining particulate matter.

In the 1940s, coal gasification was used at a commercial scale to provide town gas for street lighting in Europe and the U.S. But the concept's techno-economic feasibility had yet to be established for Indian coal.

Initially, Zaheer proposed a "Town Gas Supply Scheme" for Hyderabad based on gasifying coal found in the Singareni collieries and piping it to the city. If a gasification plant were established at Kothagudem, gas could be supplied not only to Hyderabad but also to towns along the 290-km-long route, per the plan. Based on surveys of fuel consumption, population and demand projections, family income, and fuel demand trends, Zaheer proposed a pressure gasification plant of 7.5 million cubic feet capacity, and suggested the gas pipeline could be laid along the railway track to facilitate easy maintenance and inspections.

**Tough going**

To demonstrate the technology's feasibility, pilot studies were needed, which in turn required funding. Zaheer's idea did not find any takers in the Central government or the CSIR. On the energy front, the policy focus at the time was on finding petroleum reserves and the development of nuclear energy, besides harnessing hydroelectric power from large dams. So in 1961, Zaheer urged Nehru to make a policy decision to establish several plants for manufacturing town gas based on coal gasification in select coal belts and linking them through a countrywide grid. Nehru liked the plan and observed that it was "a modern and more economical method, and it will bring enormous relief to the railways". But the Ministry of Steel, Mines and Fuel pointed to the "infeasibility of the plan for transporting gas over long distances". The Planning Commission, the Coal Council, and the CSIR, as well, remained cold to the proposal and were reluctant to fund a pilot plant to test coal gasification.

When Nehru appointed Zaheer the CSIR director-general in 1962, Zaheer got a chance to implement his idea to develop a pilot plant at RRLH. But the going was not easy as the plan required importing equipment. The wars of 1962 and 1965 did not help, delaying the procurement of machinery from Germany, and there was a massive cost overrun due to the devaluation of the rupee.

The project came to a halt as soon as Zaheer's term ended in 1966. His successor, Atma Ram, formed a committee to review the project. The panel gave an adverse report saying "it would not be advisable to establish and operate the plant in a manner proposed by RRLH" and suggested that the imported equipment be disposed of.

Back then, there was strong opposition to CSIR labs setting up pilot plants to demonstrate technologies they had developed. This was despite the RRLH having already been running a successful semi-commercial pilot plant on another coal technology: low temperature carbonisation. Following the RRLH model, the National Chemicals Laboratory in Pune and the Indian Institute of Petroleum in Dehradun erected pilot plants as well.

**'Had we listened...'**

After several reviews and controversies, the coal gasification project at RRLH received the go-ahead in 1972 and the crates of imported machinery were opened seven years after they had landed in Hyderabad. The project also received an unexpected boost: the Oil Shock in October 1973. The shortage of petroleum products sent the government scurrying for alternative fuels, recognising that "in the perspective of the country's long-term energy requirements, consideration should be given to installing small to medium coal gasification plants to produce gas".

"It is now abundantly clear that a coal-based energy strategy is the only realistic course for us," Prime Minister Indira Gandhi announced, recognising the past mistakes. In her inaugural speech at the Indian Science Congress session at Bhubaneswar in January 1977, she admitted, "Had we listened, in the early '60s, to Dr. Husain Zaheer's plea, and based our chemical feedstock policy not merely on oil but on the abundant coal reserves, we would have withstood the oil crisis with much less strain."

However, by the time RRLH erected the coal gasification pilot plant, the technology had moved to the next level. The pilot plant was used as a test bed for research on the integrated gasification combined cycle (IGCC), in collaboration with Bharat Heavy Electricals Limited (BHEL), which commissioned the first such plant in 1985. Unlike coal gasification to produce town gas, IGCC combines gas production from coal with electricity generation. The syngas produced by gasifying coal was used to run a power plant generating electricity. Gas-fired turbines were used to produce electricity and the excess heat was routed to steam-driven turbines.

**Second wind**

Although India began early with fuel R&D with national laboratories engaged in coal, petroleum, and geophysics research, the funding was suboptimal and projects lacked the necessary industrial linkages. Policymakers and competing interests failed to see the need for long-term research in this area.

Interest in clean coal technologies has been revived as climate action has intensified. The National Coal Gasification Mission, which India launched in 2021, aims to gasify 100 million tonnes of coal by 2030. "The adoption of gasification technology in India will revolutionise the coal sector, reducing reliance on imports of natural gas, methanol, ammonia and other essential products," according to a government statement.

Massive investments to the tune of ₹85,000 crore have been committed to the Mission. Coal India Limited and BHEL also floated a new company, Bharat Coal Gasification & Chemicals Limited, in 2024 to work on clean coal technologies.

*(Dinesh C. Sharma is a New Delhi-based journalist and author, and has written books on India's post-1947 science and technology journey)*

### 1. The Visionary Proposal (1955)

**The Concept:** Syed Husain Zaheer (then Director of RRLH, now IICT) proposed gasifying India's abundant non-caking coal (lignite, bituminous) to produce fuel gas of high calorific value.

**The Infrastructure:** A cross-country grid with pipelines laid along railway tracks for easy maintenance, starting with a "Town Gas Supply Scheme" for Hyderabad.

**The Rationale:** To reduce the burden on railways (transporting physical coal) and provide a modern, economical fuel for domestic and industrial use.

**2. Why the Plan Failed (Policy Roadblocks)**

**Competing Priorities:** In the 1950s and 60s, India's energy policy shifted toward nuclear energy, large hydroelectric dams, and petroleum exploration, leaving coal gasification sidelined.

**Bureaucratic Skepticism:** The Ministry of Steel and the Planning Commission labeled the plan "infeasible," citing difficulties in long-term gas transport.

**Institutional Resistance:** Opposition within CSIR to labs running pilot plants and the impact of the 1962 and 1965 wars delayed machinery procurement and increased costs.

**3. The 1973 Oil Shock: A Turning Point**

The OPEC oil embargo forced the Indian government to reconsider coal. Prime Minister Indira Gandhi later admitted that if Zaheer's 1960s plea had been heard, India would have withstood the crisis with much less strain. This led to:

**Evolution of Technology:** The focus shifted from "Town Gas" to Integrated Gasification Combined Cycle (IGCC) in collaboration with BHEL.

**IGCC Process:** Coal is gasified to produce Syngas, which runs gas turbines, while waste heat drives steam turbines, significantly increasing thermal efficiency.

**4. Related Static Concepts**

| Concept | Significance to the Topic |
|---|---|
| **Coal Gasification** | Converting coal into syngas ($CO, H_2, CO_2, CH_4$, and water vapour). It is considered "Cleaner Coal" technology as it allows for easier carbon capture. |
| **Syngas (Synthesis Gas)** | A mixture used to produce electricity, methanol, ammonia, and synthetic natural gas (SNG). |
| **National Coal Gasification** | Aims to gasify **100 million tonnes of coal by 2030** with an investment of ₹85,000 crore. |

| Concept | Significance to the Topic |
|---|---|
| **Mission (2021)** | |
| **Energy Mix of India** | Coal still accounts for over 50% of India's installed power capacity, making "clean coal" vital for transition. |

**5. The Modern Context: National Coal Gasification Mission**

The mission aims to revolutionize the coal sector and reduce reliance on imports of:

**Natural Gas & Methanol:** For energy and transport.

**Ammonia:** For the fertilizer sector (reducing the subsidy burden).

**Chemical Feedstock:** Building a domestic chemical industry not solely dependent on expensive oil.

**Conclusion**

The story of Syed Husain Zaheer's gas grid is a reminder that strategic foresight in science and technology is often hampered by short-term economic considerations. As India faces new disruptions in West Asia, the "second wind" provided by the National Coal Gasification Mission is a necessary step to decouple India's growth from volatile global oil markets. Realizing this 70-year-old vision is now a matter of both economic necessity and climate responsibility.



**UPSC Prelims Exam Practice Question**

**Ques: Integrated Gasification Combined Cycle (IGCC) technology is significant because:**

(a) It reduces dependence on coal

(b) It uses only renewable energy

(c) It eliminates need for turbines

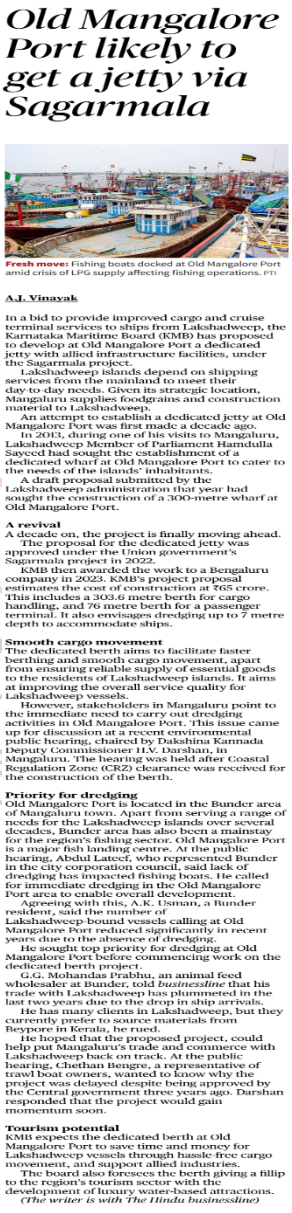
(d) It increases efficiency by combining gas and steam turbines

**Ans: d)**

**UPSC Mains Exam Practice Question**

**Ques:** Discuss the role of coal gasification in enhancing India's energy security and reducing import dependence. **(250 Words)**

The proposal by the Karnataka Maritime Board (KMB) to develop a dedicated jetty at Old Mangalore Port under the Sagarmala Project marks a strategic shift in strengthening the mainland-island connectivity between Mangaluru and Lakshadweep. Budgeted at ₹65 crore, the project aims to move beyond a decade of delays to establish a robust cargo and passenger terminal, addressing both economic trade and the daily subsistence needs of the archipelago.



Old Mangalore Port likely to get a jetty via Sagarmala

Fresh move: Fishing boats docked at Old Mangalore Port amid crisis of LPG supply affecting fishing operations. PTI

A.J. Vinayak

In a bid to provide improved cargo and cruise terminal services to ships from Lakshadweep, the Karnataka Maritime Board (KMB) has proposed to develop at Old Mangalore Port a dedicated jetty with allied infrastructure facilities, under the Sagarmala project.

Lakshadweep islands depend on shipping services from the mainland to meet their day-to-day needs. Given its strategic location, Mangaluru supplies foodgrains and construction material to Lakshadweep.

An attempt to establish a dedicated jetty at Old Mangalore Port was first made a decade ago.

In 2013, during one of his visits to Mangaluru, Lakshadweep Member of Parliament Hamdulla Sayeed had sought the establishment of a dedicated wharf at Old Mangalore Port to cater to the needs of the islands' inhabitants.

A draft proposal submitted by the Lakshadweep administration that year had sought the construction of a 300-metre wharf at Old Mangalore Port.

**A revival**

A decade on, the project is finally moving ahead.

The proposal for the dedicated jetty was approved under the Union government's Sagarmala project in 2022.

KMB then awarded the work to a Bengaluru company in 2023. KMB's project proposal estimates the cost of construction at ₹65 crore. This includes a 303.6 metre berth for cargo handling, and 76 metre berth for a passenger terminal. It also envisages dredging up to 7 metre depth to accommodate ships.

**Smooth cargo movement**

The dedicated berth aims to facilitate faster berthing and smooth cargo movement, apart from ensuring reliable supply of essential goods to the residents of Lakshadweep islands. It aims at improving the overall service quality for Lakshadweep vessels.

However, stakeholders in Mangaluru point to the immediate need to carry out dredging activities in Old Mangalore Port. This issue came up for discussion at a recent environmental public hearing, chaired by Dakshina Kannada Deputy Commissioner H.V. Darshan, in Mangaluru. The hearing was held after Coastal Regulation Zone (CRZ) clearance was received for the construction of the berth.

**Priority for dredging**

Old Mangalore Port is located in the Bunder area of Mangaluru town. Apart from serving a range of needs for the Lakshadweep islands over several decades, Bunder area has also been a mainstay for the region's fishing sector. Old Mangalore Port is a major fish landing centre. At the public hearing, Abdulrauf, who represented Bunder in the city corporation council, said lack of dredging has impacted fishing boats. He called for immediate dredging in the Old Mangalore Port area to enable overall development.

Agreeing with this, A.K. Usman, a Bunder resident, said the number of Lakshadweep-bound vessels calling at Old Mangalore Port reduced significantly in recent years due to the absence of dredging.

He sought top priority for dredging at Old Mangalore Port before commencing work on the dedicated berth project.

G.G. Mohandas Prabhu, an animal feed wholesaler at Bunder, told *businessline* that his trade with Lakshadweep has plummeted in the last two years due to the drop in ship arrivals.

He has many clients in Lakshadweep, but they currently prefer to source materials from Beypore in Kerala, he rued.

He hoped that the proposed project, could help put Mangaluru's trade and commerce with Lakshadweep back on track. At the public hearing, Chethan Bengre, a representative of trawl boat owners, wanted to know why the project was delayed despite being approved by the Central government three years ago. Darshan responded that the project would gain momentum soon.

**Tourism potential**

KMB expects the dedicated berth at Old Mangalore Port to save time and money for Lakshadweep vessels through hassle-free cargo movement, and support allied industries.

The board also foresees the berth giving a fillip to the region's tourism sector with the development of luxury water-based attractions.

*(The writer is with The Hindu businessline)*

### 1. Strategic Significance of the Project

**Life-line for Lakshadweep:** The islands are heavily dependent on the mainland for food grains, construction materials, and essential services. Mangaluru's geographical proximity makes it a natural logistics hub for the islands.

**Dual-Purpose Infrastructure: Cargo:** A 303.6-metre berth for efficient handling of essential goods.

**Passenger/Cruise:** A 76-metre berth to boost tourism and facilitate easier travel for islanders.

**Economic Revival:** The project seeks to reclaim trade lost to other ports (like Beypore in Kerala) by reducing turnaround times and improving service quality for Lakshadweep-bound vessels.

### 2. Critical Challenges: The Dredging Dilemma

The success of the new jetty is inherently tied to the depth of the channel.

**Siltation Issues:** Stakeholders have noted a significant drop in vessel arrivals due to a lack of maintenance dredging.

**Draft Requirements:** The proposal envisages dredging up to 7 metres to accommodate larger ships. Without immediate dredging, the "dedicated jetty" remains inaccessible to the very vessels it aims to serve.

**Impact on Fishing:** Old Mangalore Port is a major fish landing center. Poor depth affects the navigation of trawl boats, impacting the local artisanal and commercial fishing economy.

### 3. Related Static Concepts

| Concept | Relevance to the Article |
|---|---|
| **Sagarmala Programme** | The Union Government's flagship program for port-led development, focusing on modernization, connectivity, and coastal community development. |

| Concept | Relevance to the Article |
|---|---|
| **CRZ (Coastal Regulation Zone)** | Mandatory environmental clearance required for any construction near the shoreline to protect the fragile coastal ecosystem. |
| **Dredging** | The removal of sediments and debris from the bottom of water bodies. Essential for maintaining the "draft" (depth) required for ships. |
| **Internal Security** | Developing infrastructure in Mangaluru strengthens the strategic "back-end" support for the sensitive Lakshadweep islands near international shipping lanes. |

**4. Infrastructure Specifications & Potential**

**Cost & Construction:** ₹65 crore investment for specialized berths.

**Tourism Fillip:** Potential for "luxury water-based attractions" and cruise tourism, aligning with India's goal to develop the Blue Economy.

**Value Chain:** Support for allied industries such as animal feed, wholesale trade, and food processing in the Bunder area of Mangaluru.

**Conclusion**

The development of a dedicated jetty at Old Mangalore Port is a quintessential example of Port-led Prosperity. While the Sagarmala funding provides the financial backbone, the project's operational success hinges on local environmental management—specifically regular dredging and CRZ compliance. By bridging the infrastructure gap, India can ensure the socio-economic integration of Lakshadweep while revitalizing Mangaluru as a premier maritime gateway on the West Coast.

## UPSC Prelims Exam Practice Question

**Ques: With reference to the Sagarmala Programme, consider the following statements:**

1. It aims at port-led development in India.

2. It focuses only on cargo transportation and excludes passenger movement.

3. It includes coastal community development as one of its pillars.

**Which of the statements given above is/are correct?**

(a) 1 and 3 only

(b) 1 only

(c) 2 and 3 only

(d) 1, 2 and 3

**Ans: a)**

## UPSC Mains Exam Practice Question

**Ques:** "Port-led development is central to India's Blue Economy strategy." Discuss in the context of the Sagarmala Programme and recent initiatives like the Mangaluru–Lakshadweep connectivity project. **(250 Words)**

# 'Double engine' — cute slogan, a serious federal question

**S.Y. Quraishi**

is a former Chief Election Commissioner of India

Every election season produces memorable slogans. Most fade once the votes are counted, but some linger and begin to shape how citizens think about governance itself. One such phrase is the "double-engine *sarkar*". At first hearing, it sounds harmless, even cute: two governments working in tandem to accelerate development. Yet, behind the metaphor lies a serious constitutional question about India's federal compact.

The idea is simple: if the same party governs both the Union and the State, development will move faster because the two governments will work in harmony. Taken at face value, this is unexceptionable. Of course governments at different levels should coordinate. That is indeed cooperative federalism. The real question is what happens when they do not share the same political ideology. But the "double-engine" slogan carries a deeper implication. It suggests that development flows preferentially to States governed by the same party as the Union government.

**'Aligned States' benefit**

During election campaigns the message is often made quite explicit: elect the party ruling at the Centre so that your State can benefit from faster development. If you do not, you will be starved of funds. This is where the constitutional difficulty begins.

India's Constitution does not envisage a system where State governments depend on the goodwill, or charity, of the ruling party at the Centre. It creates a federal structure in which the Union and the States are partners within their respective spheres. The Union government represents the Republic as a whole, not merely those States governed by the party in power in New Delhi.

Public money collected through national taxation belongs to the Union of India, not to the ruling party. Taxes are collected in the name of the Republic, from citizens of every State regardless of how they vote. The distribution of these resources cannot depend on which party governs a State. A citizen in Kerala or Tamil Nadu pays the same taxes as a citizen in Uttar Pradesh or Madhya Pradesh. The constitutional promise is that both will receive their fair share in return.

India's constitutional framers understood this danger. That is why they built institutional safeguards into the system. The most important is the Finance Commission. Under Article 280, the Finance Commission is appointed every five years to recommend how Union revenues should be shared with the States. Its purpose is vital: fiscal transfers must be rule-based, not politically negotiated. The Commission evaluates States on objective criteria – how far their incomes lag behind the national average, their population, geographic size, and fiscal capacity – so that politics cannot determine who gets what.

Fairness, not political alignment, must guide India's federal balance

**Issues raised by States, federal friction**

Recent debates around fiscal federalism show how sensitive this issue remains. Southern States have expressed concern that the use of more recent population data in allocation formulas may penalise them for having successfully controlled population growth. Another issue is the increasing resort of the Union government to cesses and surcharges, which fall outside the divisible pool and are not shared with States. This effectively reduces the quantum of resources available for constitutionally mandated sharing, concentrating more fiscal power in Union hands and weakening the financial autonomy of States. The Sixteenth Finance Commission, which is currently deliberating, will have to grapple seriously with these concerns if it is to restore confidence in the fairness of the fiscal federal arrangement

Governments in Tamil Nadu, Kerala, Karnataka, Andhra Pradesh and Telangana have argued that States which acted early to stabilise population should not be penalised in the distribution of national resources. Senior Ministers from these States have at times remarked, in visible frustration, that they feel reduced to "beggars", pleading for funds that constitutionally belong to them. This is not the language of political theatre. It reflects a genuine structural grievance about the terms on which States participate in the Indian Union.

Federal friction is visible not only in financial matters but also in the legislative process. In recent years, Governors in some States have sat for long periods over Bills passed by elected legislatures, effectively using the constitutional office as an instrument of political sabotage. Tamil Nadu and Kerala have witnessed particularly prolonged delays. The pattern is difficult to ignore: the delays have been in States that are governed by parties opposed to the ruling dispensation at the Centre. A Governor who withholds assent to legislation passed by an elected Assembly is, in effect, a second engine running in reverse.

Such delays have drawn judicial attention. In *State of Punjab vs Principal Secretary to the Governor of Punjab* (2023), the Supreme Court of India made it clear that a Governor cannot use inaction to stall the legislative process. The Court emphasised that the Governor's office is not meant to function as a parallel political authority over an elected legislature.

More recently, in *State of Tamil Nadu vs Governor of Tamil Nadu* (2025), the Court observed that prolonged inaction by a Governor in assenting to Bills is constitutionally impermissible. These rulings together signal a firm judicial commitment to protecting the legislative sovereignty of elected State assemblies.

The experience of Delhi over the past decade provides a further illustration. Many initiatives of the elected government became entangled in disputes with the Lieutenant-Governor and the Union government. Courts eventually had to intervene. The lesson is not merely about one city; it is about what happens when the machinery of federal governance is used to punish a political opponent rather than serve the public.

Seen together – fiscal transfers, gubernatorial delays, and the Delhi impasse – these developments form a coherent pattern. The "double-engine" slogan is not merely a campaign metaphor. It is a description of how governance actually functions when political alignment is absent. And that is precisely the constitutional problem. The form of federalism survives; its spirit is quietly hollowed out.

India's federal system has faced similar tensions before. In earlier decades, Article 356 was frequently misused to dismiss elected State governments. The Court's landmark judgment in *S.R. Bommai vs Union of India* placed important limits on that practice. The challenge today is subtler: governments may remain in office, yet, governance itself may become hostage to political alignment.

**Structural reform needed**

What is needed is not merely judicial intervention, but structural reform. The Finance Commission's recommendations could be made more binding. A fixed statutory timeline, say, three months, could be prescribed for Governors to act on Bills, failing which assent would be deemed granted. Inter-State/governmental councils, already provided for under Article 263, could be revitalised as genuine forums for cooperative federalism rather than ceremonial gatherings. These are not radical proposals; they are logical completions of the constitutional architecture that the framers intended.

Political slogans will continue to animate election campaigns. But a slogan that implicitly threatens citizens with slower development if they choose the "wrong" party at the State level does not merely distort electoral choice; it corrodes the constitutional promise of equal citizenship. Development cannot depend on political alignment. It must rest on rules and institutions that treat every State, and every citizen, with equal fairness. That constitutional balance, not the number of engines pulling the same train, is the only engine India's federal democracy truly needs.

**GS Paper II & III : Indian Polity and Economy**

**UPSC Mains Exam Practice Question:** The 16th Finance Commission marks a shift from entitlement-based to compliance-driven fiscal federalism. Critically examine the implications of this shift for Centre–state relations. **(250 Words)**

**Context :** The metaphor of the "double-engine sarkar"—where the same party rules at both the Union and State levels—has become a central theme in Indian electoral politics. While framed as a tool for "cooperative federalism" and accelerated development, former CEC S.Y. Quraishi argues it poses a profound constitutional question. It suggests a shift toward a "aligned federalism" where development may become contingent on political loyalty, potentially undermining the constitutional guarantee of equality among States.

**1. The Constitutional Conflict**

**Resource Distribution:** Under Article 280, the Finance Commission ensures that tax devolution is based on objective criteria (e.g., fiscal capacity, population), not political alignment. The "double-engine" narrative risks implying that funds are a matter of "charity" or "goodwill" from the Centre rather than a constitutional right.

**Legislative Sovereignty:** The article highlights "Federal Friction" where Governors in non-aligned states (e.g., Tamil Nadu, Kerala) have delayed assent to Bills. The Supreme Court in State of Punjab vs. Governor (2023) and State of Tamil Nadu vs. Governor (2025) ruled that Governors cannot stall the legislative process indefinitely.

**The Delhi Impasse:** The ongoing jurisdictional conflict between the elected government of Delhi and the Lieutenant-Governor serves as a case study of how lack of political alignment can lead to administrative paralysis.

**2. Emerging Fiscal Strains**

**Performance vs. Allocation:** Southern States argue that using 2011 population data penalizes them for successful population control, leading to a sense of being "penalized for performing well."

**Cess and Surcharges:** The Union's increasing reliance on these (which are not part of the divisible pool shared with States) reduces the actual quantum of funds available to States, shrinking their fiscal autonomy.

**3. Related Static Concepts**

| Concept | Significance to the Article |
|---|---|
| **Article 280** | Mandates the Finance Commission to ensure rule-based fiscal transfers. |
| **Article 263** | Provides for the Inter-State Council to coordinate policy; currently underutilized. |
| **Article 163 & 200** | Relates to the Governor's powers; the "discretionary" power is being judicially narrowed to prevent "political sabotage." |
| **S.R. Bommai Case (1994)** | Established that Federalism is a Basic Structure of the Constitution and limited the misuse of |

| Concept | Significance to the Article |
|---|---|
| | Article 356. |
| **Cooperative vs. Competitive Federalism** | The shift from working together (Cooperative) to States competing for resources/investments (Competitive). |

**4. Proposed Structural Reforms**

To protect the spirit of federalism, the author suggests:

**Binding Recommendations:** Making Finance Commission awards more strictly binding.

**Statutory Timelines:** A fixed period (e.g., 3 months) for Governors to act on Bills, after which assent is "deemed granted."

**Revitalizing Article 263:** Transforming the Inter-State Council from a "ceremonial gathering" into a robust platform for dispute resolution and policy harmony.

**5. Finance Commission**

**About:** FC is constituted by the President of India under Article 280 of the Constitution every five years or earlier. It submits its report to the President, who places it before both Houses of Parliament.

**Composition:** A Chairperson and four members, all appointed by the President.

**Qualification:** The Constitution empowers Parliament to establish the qualifications for Finance Commission members. Under the Finance Commission Act, 1951, the Chairman must have experience in public affairs. The four other members are selected from those with expertise as a High Court judge, in government finance and accounts, financial administration, or economics.

**Term:** They hold office for the period specified by the President and are eligible for reappointment.

**Functions:** The Finance Commission advises the President on:

Distribution of tax proceeds between Centre and states, and among states.
Principles for grants-in-aid to states (Article 275).
Measures to augment state funds for Panchayats and Municipalities.
Other financial matters referred by the President.

**Conclusion**

The "double-engine" narrative, while effective as a political slogan, must not be allowed to hollow out the Federal Compact. In a diverse democracy like India, development must remain "politics-neutral." The true engine of India's progress is not political alignment, but the robust functioning of constitutional institutions that treat every State—regardless of its ruling party—as an equal partner in the Republic.