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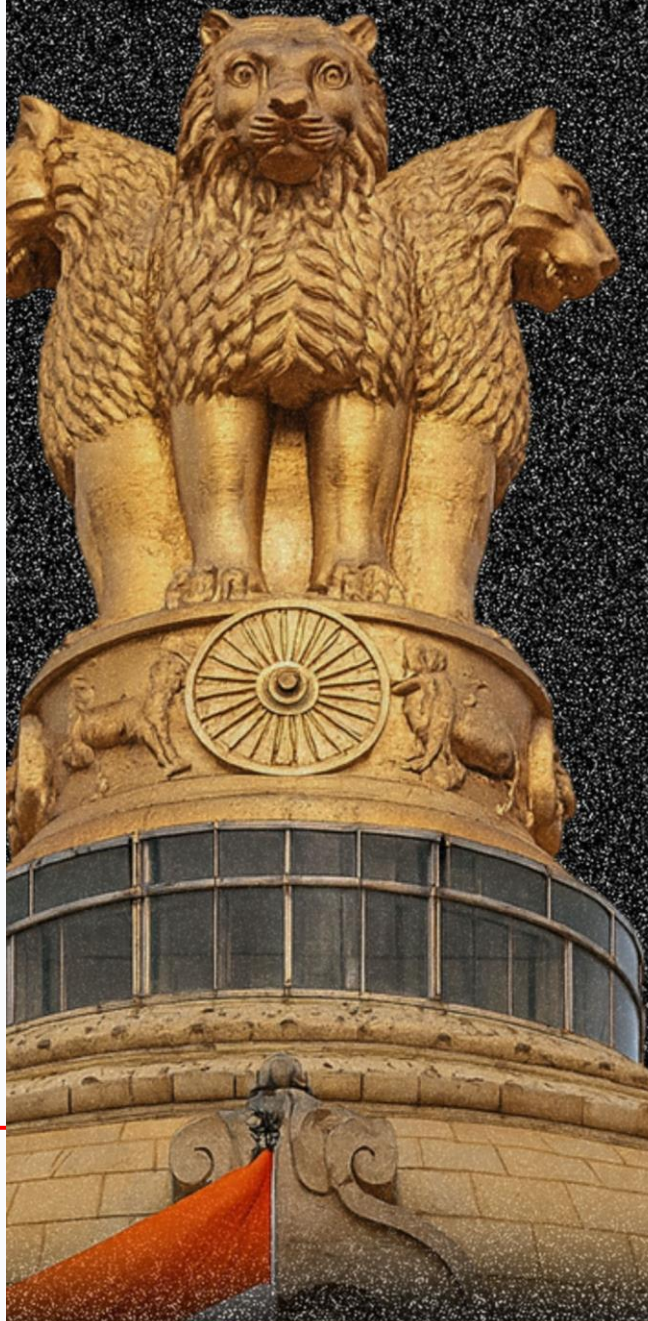
DEEP ANALYSIS

for

**IAS MAINS
EXAMINATION**

From

9th to 14th Feb 2026



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GENERAL STUDIES 2

1.1. POLITY & GOVERNANCE

1.1.1. 16TH FINANCE COMMISSION

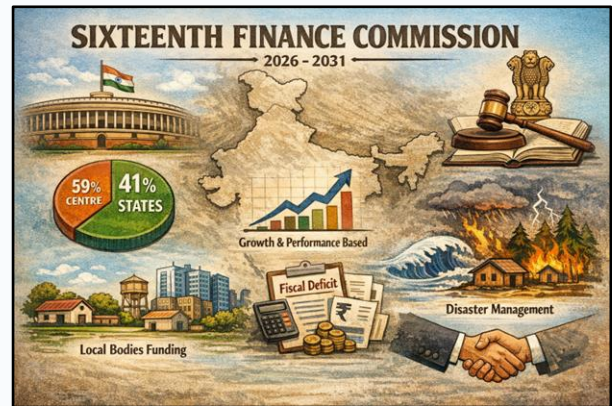
Context:

The 16th Finance Commission (FC) has submitted its report to the President on **November 17, 2025**, marking a pivotal moment in India's fiscal federalism for the award period of **2026–31**.

About the Finance Commission (FC)

The FC is a **Constitutional Body** acting as the "balancing wheel" of fiscal federalism in India.

- **Article 280:** Mandates the President to constitute an FC every five years.
- **Composition: Chairman:** Dr. Arvind Panagariya.
 - **Full-time Members:** Shri Ajay Narayan Jha, Smt. Annie George Mathew, and Dr. Manoj Panda.
 - **Part-time Member:** Dr. Soumya Kanti Ghosh.
- **Key Functions:**
 - **Vertical Devolution:** Distribution of net proceeds of taxes between the Union and States.
 - **Horizontal Devolution:** Allocation of these proceeds among the States.
 - **Grants-in-aid:** Principles governing grants to States from the Consolidated Fund of India (Article 275).
 - **Local Bodies:** Measures to augment the State Consolidated Fund for Panchayats and Municipalities.



Key Recommendations of the 16th FC (2026–31)

1. Vertical Devolution (Union to States)

- Despite strong demands from several states (especially from the South) to increase the share to 45–50%, the 16th FC has maintained the status quo.
- **Share Retained at 41%:** The states' share in the "net proceeds" (divisible pool) of Union taxes remains at 41%.
- **The "Cess" Concern:** The Commission flagged the shrinking divisible pool due to the Centre's increased reliance on **cesses and surcharges** (which are not shared), though it did not recommend their inclusion in the pool.

2. Horizontal Devolution (Inter-state Allocation)

- The formula to divide the 41% among the 28 states has been redesigned to reward economic output and ecological preservation.

Criterion	Weight (%)	Significance
Income Distance	42.5%	Ensures equity for lower-income states.

Population (2011)	17.5%	Reflects the scale of service delivery requirements.
Demographic Performance	10.0%	Redefined to measure population growth between 1971–2011.
Area	10.0%	Accounts for higher costs in geographically large / sparse states.
Forest & Ecology	10.0%	Now includes " Open Forests " to reward ecological maintenance.
Contribution to GDP	10.0%	New Criterion. Replaces "Tax Effort" to reward economic efficiency.

3. Grants-in-Aid (₹9.47 Lakh Crore Total)

- A major shift in the 16th FC is the **discontinuation of Revenue Deficit Grants**, Sector-specific grants, and State-specific grants. Funding is now concentrated on two pillars:

A. Local Body Grants (₹7.91 Lakh Crore)

- **Rural-Urban Split:** Allocated in a **60:40 ratio** between Rural (RLBs) and Urban Local Bodies (ULBs).
- **Performance Linkage:** 80% as Basic Grants and 20% as Performance-based.
- **Conditions:** Grants are **only** released if states:
 - Timely constitute **State Finance Commissions (SFCs)**.
 - Publicly disclose **audited accounts** of local bodies.
- **Urbanization Premium:** A one-time grant of **₹10,000 crore** to states that successfully merge peri-urban villages into larger cities.

B. Disaster Management (₹2.04 Lakh Crore)

- **SDRF & SDMF:** Funds split between Response (SDRF) and Mitigation (SDMF) to prioritize prevention.
- **Cost Sharing:** Maintained at **75:25** for general states and **90:10** for North-Eastern and Himalayan states.

4. Fiscal Roadmap and Reforms

- The Commission has set strict targets to ensure long-term debt sustainability.
- **Fiscal Deficit Targets:**
 - **Centre:** Reduce to **3.5% of GDP** by 2030–31.
 - **States:** Cap at **3% of GSDP**.
- **Off-Budget Borrowing:** Recommended a **total ban** on off-budget borrowings; all liabilities must be transparently included in the budget.
- **Power Sector:** States are "cautiously nudged" to **privatize DISCOMs** to reduce the massive debt burden on state exchequers.
- **Subsidy Rationalization:** Advised states to review "unconditional cash transfers" and implement strict exclusion criteria for welfare schemes.

5. Public Sector Enterprise (PSE) Reforms

- **Exit Strategy:** Recommended the **closure of 308 inactive State PSEs**.
- **Performance Review:** State PSEs incurring losses for 3 out of 4 consecutive years must be reviewed by the State Cabinet for privatization or closure.

Criteria for Horizontal Devolution

The formula determines how the 41% share is divided among the 28 states. The 16th FC has introduced a landmark "Contribution to GDP" criterion.

Criterion	Weight (%)	Description
Income Distance	42.5%	Distance of a state's per capita income from the state with the highest income.
Population (2011)	17.5%	Shifted weight slightly higher to account for current service delivery needs.
Demographic Performance	10.0%	Rewards states with lower fertility rates (population control).
Area	10.0%	Accounts for the higher cost of service delivery in larger states.
Forest & Ecology	10.0%	Based on share of dense and open forest (new inclusion).
Contribution to GDP	10.0%	New Criterion. Replaces "Tax Effort." Rewards states contributing more to national economic output.

Note: The "Tax and Fiscal Effort" criterion used by the 15th FC has been subsumed/replaced by the **Contribution to GDP** metric.

Concerns Regarding the 16th FC

1. **Cesses and Surcharges:** The "Divisible Pool" is shrinking. The Centre collects nearly 18-20% of its gross revenue through cesses/surcharges, which are **not shared** with states. This reduces the effective devolution to ~31-32%.
2. **Southern State Paradox:** States like Tamil Nadu and Kerala argue that the "Income Distance" and "Population" criteria penalize them for being economically successful and controlling population growth.
3. **Conditional Grants:** Increasing the "Performance-linked" component (20% for local bodies) is seen by some as an infringement on the fiscal autonomy of states.
4. **Discontinuation of Revenue Deficit Grants:** The 16th FC has phased out many specific grants, forcing states to rely strictly on their own tax efforts and the devolution formula.

6. Suggested Measures & Way Forward

- **Cap on Cesses:** There is a growing demand to amend the Constitution or set a ceiling on cesses and surcharges to protect the divisible pool.

- **State Finance Commissions (SFCs):** States must ensure regular constitution of SFCs. The 16th FC recommended that Central grants be linked to the timely submission of SFC reports.
- **Accrual-based Accounting:** Moving toward better transparency in state finances to accurately reflect debt levels.
- **Incentivizing Urbanization:** The Commission introduced an "**Urbanization Premium**" (₹10,000 cr) to encourage the merger of peri-urban villages into larger cities for better planning.

Conclusion

The 16th Finance Commission marks a shift from "Equity-only" to "**Equity + Efficiency.**" While it addresses the needs of poorer states through high weightage on Income Distance, the introduction of the **GDP Contribution** criterion signals a new era where economic performance and fiscal discipline are rewarded. However, the true success of these recommendations will depend on how the Centre addresses the "Cess and Surcharge" loophole that continues to strain Centre-State relations.

Q. How have the recommendations of the 14th Finance Commission of India enabled the States to improve their fiscal position? 150 Words (GS-2, Polity)

1.2. INTERNATIONAL RELATION

1.2.1 INDIA-BANGLADESH RELATIONS

Context:

Following the **BNP's February 2026 landslide victory**, India has pivoted toward a pragmatic "reset." PM Modi's early outreach to **Tarique Rahman** aims to stabilize ties amid demands for **Sheikh Hasina's extradition** and growing Chinese influence.

Historical Background of India-Bangladesh Relations:

1. The Liberation Phase (1971–1975)

- **Birth of a Nation:** India played a decisive role in the **1971 Liberation War**, providing refuge to 10 million people and military support to the **Mukti Bahini**.
- **Early Framework:** Relations were defined by the **1972 Treaty of Friendship** and the **1974 Land Boundary Agreement (LBA)** signed by Indira Gandhi and Sheikh Mujibur Rahman.
- **Sudden Halt:** The 1975 assassination of Sheikh Mujibur Rahman marked a tragic end to this "Golden Start."

2. Strategic Divergence & Military Rule (1975–1996)

- **Tilted Neutrality:** Military regimes (Ziaur Rahman and Gen. Ershad) shifted away from secularism and moved closer to China and Pakistan to counterbalance India.



- **Security Friction:** This era saw the rise of anti-India rhetoric and the use of Bangladeshi soil by **Northeast insurgent groups** (like ULFA).

3. The "Golden Chapter" / Shonali Adhyay (1996–2024)

- **Water & Security:** The 1996 **Ganges Water Sharing Treaty** was a breakthrough.
- **Hasina Era (2009-2024):** Relations peaked.

Key achievements included:

- **2015 LBA Implementation:** Exchange of 162 enclaves, settling the land border.
- **Connectivity Revolution:** Revival of pre-1965 rail links and use of Chattogram/Mongla ports.
- **Zero Tolerance to Terror:** Dhaka's crackdown on Indian insurgents transformed regional security.

4. The Current Crisis & Political Realignment (2024–2026)

The fall of the Sheikh Hasina government has introduced new variables:

- **The 2026 Election Outcome:** With **Tarique Rahman's BNP** securing a two-thirds majority in February 2026, New Delhi has moved quickly to establish ties. PM Modi was among the first to congratulate Rahman, signaling a shift from "party-specific" to "state-specific" diplomacy.
- **The Extradition Dilemma:** A major irritant is the presence of Sheikh Hasina in India. The new Dhaka administration has signaled that her extradition and legal accountability for 2024 events are priorities for "national healing."
- **Rise of New Actors:** The emergence of the **National Citizen Party (NCP)** and the consolidation of **Jamaat-e-Islami** in border districts present fresh security challenges regarding radicalization and "anti-India" sentiment.

Area of Cooperation Between India Bangladesh Relations:

1. Connectivity: The "Land Bridge" to Northeast

- **Rail Links:** Six out of eight pre-1965 rail links have been restored. The **Akhaura-Agartala** link (Tripura) and the **Haldibari-Chilahati** route are key for reducing the "Chicken's Neck" bottleneck.
- **Port Access:** Under the 2023 agreement, India now uses **Chattogram and Mongla ports** to transport goods to Northeast states, cutting transit time by 60%.
- **Inland Waterways:** The **Protocol on Inland Water Transit and Trade (PIWTT)** allows cargo movement through the Ganga-Brahmaputra-Meghna river systems.

2. Economic Cooperation: Moving Toward CEPA

- **Trade Volume:** Bangladesh is India's largest trade partner in South Asia (~\$14bn).
- **CEPA 2026:** Both nations are fast-tracking the **Comprehensive Economic Partnership Agreement (CEPA)**, set to be finalized by late 2026. This is crucial as Bangladesh "graduates" from Least Developed Country (LDC) status, losing its duty-free access to Indian markets under SAFTA.
- **Border Haats:** These local markets (e.g., Kamalasagar-Tarapur) bolster the border economy and reduce smuggling.

3. Energy & Digital Partnership: The New Frontier

- **Maitree Thermal Power Plant:** This 1320 MW project (a joint venture between India's NTPC and BPDB) became fully operational in early 2026, providing base-load power to Bangladesh.
- **Energy Pipelines:** The **India-Bangladesh Friendship Pipeline** delivers high-speed diesel from Siliguri to Parbatipur, ensuring fuel security for northern Bangladesh.
- **Space & Tech:** Cooperation now includes the **Maitri Satellite** and the integration of India's UPI with Bangladesh's digital payment systems.

4. Security & Water Management

- **Border Security:** Implementation of "Smart Fencing" and AI-driven surveillance on the 4,096 km border to curb illegal infiltration and cattle smuggling.
- **Water Sharing: Ganga Water Treaty:** Set to expire in **December 2026**; technical negotiations for renewal are the top priority.
 - **Teesta Dispute:** India is considering a technical team visit to assist in the conservation and management of the Teesta River within Bangladesh as a "middle-path" solution.

Issues Between India Bangladesh Relations:

1. The "Hasina Factor" & Extradition

- **The Dilemma:** Following the **BNP's February 2026 victory**, Dhaka has formally requested the **extradition of Sheikh Hasina** to face trial for "crimes against humanity" (2024 unrest).
- **India's Stand:** New Delhi is in a legal and diplomatic bind, balancing the **Extradition Treaty** obligations against the "political offense" exception and the risk of setting a precedent for former allies.

2. Water Diplomacy: The 2026 Deadlines

- **Ganga Water Treaty:** This landmark 30-year treaty expires in **December 2026**. Negotiations are critical as Bangladesh reports failing to receive its guaranteed share 65% of the time during dry seasons.
- **Teesta Standoff:** Still stalled due to West Bengal's objections. China's proposal for a **\$1 billion Teesta Management Project** near the Indian border is a major strategic "red flag" for India.

3. Border Friction & "Zero Killings"

- **BSF Firing:** Deaths along the 4,096 km border remain a highly emotive issue in Dhaka. The new BNP government has prioritized a "humane border" and the cessation of "shoot-on-sight" policies to cool domestic anti-India sentiment.
- **Illegal Migration:** Continues to be a domestic political flashpoint in India, especially with the upcoming **Assam and West Bengal state elections** in May 2026.

4. The China-Pakistan Strategic Tilt

- **Defense Shift:** Bangladesh is exploring the procurement of **JF-17 fighter jets** (China-Pakistan joint venture) and has established a **direct sea link between Karachi and Chattogram** (Nov 2024).
- **Infrastructure:** China remains Bangladesh's largest trading partner (\$18bn+), using the current diplomatic vacuum to deepen its "Belt and Road" footprint.

5. Minority Safety & Identity Politics

- **Communal Tensions:** India remains concerned about the security of the **Hindu minority** in Bangladesh. Dhaka views India's vocal stance as "interference," leading to a "cool" diplomatic atmosphere

Way Forward:

- **Pragmatic De-hyphenation:** Decouple bilateral ties from the fate of individual leaders. Engaging with the **BNP government (2026)** on equal terms while managing the **Sheikh Hasina extradition** request through a "purely legal and judicial" channel will prevent political fallout.
- **Water Management 2.0:** Prioritize the renewal of the **Ganga Water Treaty (expiring Dec 2026)** and adopt a **basin-wide management** approach for the Teesta, shifting focus from "sharing" to "joint conservation and dredging."
- **Economic Moats (CEPA):** Fast-track the **Comprehensive Economic Partnership Agreement** to protect trade volumes as Bangladesh graduates from LDC status. Integrating UPI and digital payment systems will deepen the "people-to-people" economic bond.
- **Security & "Smart Borders":** Shift from "lethal" to **"Smart Fencing"** and AI-surveillance to reduce border killings—a major emotive issue in Dhaka—while maintaining zero tolerance for insurgency.
- **Competitive Partnership:** Counter China's influence not by demanding exclusivity, but by offering **faster, high-quality, and transparent delivery** of Indian Lines of Credit (LoCs).

Conclusion:

India's "Neighborhood First" success depends on a **resilient, party-agnostic partnership**. By prioritizing **CEPA 2026** and **"Smart Borders,"** New Delhi can transform volatile political shifts into a stable, connectivity-led alliance, ensuring a secure, integrated, and prosperous **Bay of Bengal** region.

Q. Critically examine the compulsions which prompted India to play a decisive role in the emergence of Bangladesh. 250 Words

1.2.2. INDIA AND MALAYSIA RELATIONS

Context:

India and Malaysia have recently elevated their relationship to a **Comprehensive Strategic Partnership**, reflecting a shared vision for a stable Indo-Pacific. This partnership is a cornerstone of **India's Act East Policy**.

Historical Background of the India and Malaysia Relations:

- **Ancient Ties:** Links date back to the 1st century AD through maritime trade, influenced by Buddhism, Hinduism, and later Islam.



- **Colonial Era:** Large-scale migration of Indians (mostly Tamils) occurred during British rule to work in rubber plantations.
- **Diplomatic Launch:** Relations were formally established in 1957 following Malaysia's independence.
- **The "Mahathir" Friction:** Relations faced a diplomatic chill under **PM Mahathir Mohamad (around 2019)** due to his comments on **Article 370** and the **Citizenship Amendment Act (CAA)**, leading to a brief boycott of Malaysian palm oil by Indian traders.

Areas of Cooperation of the India and Malaysia Relations:

1. Economic and Trade Cooperation

- **Trade Volume:** Bilateral trade has reached approximately **\$20 billion** in recent years. Malaysia is **India's 3rd largest trading partner in ASEAN**.
- **Currency Settlement:** In a move to "de-dollarize" bilateral trade, both nations have operationalized a mechanism to settle trade in **Indian Rupees (INR)** through Special Rupee Vostro Accounts (SRVA).
- **Key Commodities:**
 - **India's Imports:** Dominated by **Palm Oil** (India is the **largest buyer**), Mineral Oils, and Electrical machinery.
 - **India's Exports:** Primarily Mineral fuels, Aluminum, Meat products, and Organic chemicals.
- **Investment:** Major Malaysian investments in India include infrastructure (highways/airports) and telecommunications, while Indian IT giants (TCS, HCL, Infosys) have large hubs in Cyberjaya.

2. Defense and Security

- **Hardware & LCA Tejas:** Malaysia has emerged as a top prospective buyer for India's **LCA Tejas** fighter jets. India has also offered to set up a Maintenance, Repair, and Overhaul (MRO) facility in Malaysia.
- **Joint Exercises:**
 - **Harimau Shakti:** Annual military exercise focused on counter-insurgency and jungle warfare.
 - **Samudra Laksamana:** Naval exercise focused on maritime security in the Indo-Pacific.
- **Maritime Security:** Both nations collaborate on patrolling the **Strait of Malacca**, one of the world's most critical maritime "chokepoints."

3. Technology and Digital Economy

- **Semiconductors:** Malaysia is a global leader in **Assembly, Testing, and Packaging (ATP)** of chips. Under the new partnership, India seeks to link its "India Semiconductor Mission" with Malaysia's established ecosystem.
- **Fintech & UPI:** Following the success of UPI in India, both countries are working to integrate **UPI with Malaysia's PayNet** to allow seamless cross-border QR code payments.
- **Digital Public Infrastructure (DPI):** India is sharing its "India Stack" (Aadhar, UPI, DigiLocker) expertise to help Malaysia enhance its digital governance.

4. Energy and Sustainability

- **Green Hydrogen:** With Malaysia's Petronas investing heavily in Indian renewables, both countries are exploring a **Green Hydrogen corridor**.
- **Carbon Capture:** In line with global climate goals, there is emerging cooperation in **Direct Air Capture (DAC)** technology for carbon sequestration and synthetic fuel production.

5. Cultural and People-to-People Ties

- **The Diaspora:** Home to over **2.7 million** People of Indian Origin (PIOs), Malaysia hosts one of the largest Indian diasporas in the world.
- **Education:** Recognition of medical and engineering degrees is a key agenda item to facilitate the movement of professionals.
- **Tourism:** India is one of the top source markets for Malaysian tourism, aided by recent **visa-free entry** initiatives for Indian citizens.

Significance of the India and Malaysia Relations:

1. Strategic and Geopolitical Significance

Malaysia is the "central pillar" of India's **Act East Policy** and the **Indo-Pacific Vision**.

- **Chokepoint Control:** Malaysia sits astride the **Strait of Malacca**, through which nearly **60% of India's trade** to the East passes. Stability here is vital for India's energy and economic security.
- **ASEAN Centrality:** As a founding member of ASEAN, Malaysia's support is crucial for India to balance regional dynamics and ensure a "rules-based order" in the South China Sea.
- **Multipolarity:** Both nations share a vision of a multipolar Asia where no single power (referencing China) dominates the maritime or economic landscape.

2. Economic and Technological Synergy

The relationship is moving "from Palm Oil to Microchips."

- **Semiconductor Value Chain:** Malaysia is the **world's 6th largest semiconductor exporter**, excelling in **Packaging and Testing**. This is critical for the **India Semiconductor Mission** as Indian firms seek to bridge the gap between chip design and the final product.
- **Digital Public Infrastructure (DPI):** Malaysia is a key partner for the internationalization of India's **UPI** and digital governance models.
- **Local Currency Trade:** By settling trade in **INR and Malaysian Ringgit**, both nations are insulating their economies from global dollar fluctuations, a model for the "Global South."

3. The Diaspora: The "Living Bridge"

- **Demographic Weight:** With **2.9 million people of Indian origin** (the **3rd largest** Indian diaspora globally), the community holds significant political and economic power in Malaysia.
- **Strategic Capital:** The diaspora serves as a reservoir of soft power, facilitating trade, cultural exchange, and high-level political trust.
- **Welfare & Mobility:** Recent moves like the extension of **OCI cards to the 6th generation** and **visa-free travel** have solidified this human connection.

4. Defense and Regional Security

- **Net Security Provider:** India's offer of advanced military hardware (LCA Tejas, BrahMos) and maintenance (MRO) facilities positions India as a credible security partner for Malaysia, reducing its dependence on Western or Chinese arms.
- **Counter-Terrorism:** Joint efforts in deradicalization and intelligence sharing are vital for regional stability, especially given the history of extremist movement across the maritime borders.

Challenges in the India and Malaysia Relations:

- **Internal Matters:** Past tensions arose from Malaysia's vocal stance on India's internal policies, specifically the **Abrogation of Article 370 (Kashmir)** and the **Citizenship Amendment Act (CAA)**.
- **The Zakir Naik Issue:** A major point of contention is the extradition of fugitive preacher Zakir Naik. India continues to push for his return, while Malaysia has historically been hesitant, citing the need for "compelling evidence" and legal procedures.
- **Palm Oil Diplomacy:** Trade has often been used as a tool of "economic signaling." India's fluctuating import duties and past unofficial boycotts (due to political statements) create market volatility.
- **Trade Deficit:** India faces a persistent trade deficit with Malaysia. Efforts are ongoing to review the **MICECA** (India-Malaysia Comprehensive Economic Cooperation Agreement) and the **AITIGA** (ASEAN-India Trade in Goods Agreement) to create a more balanced trade environment.
- **South China Sea (SCS):** While both nations favor a "rules-based order" and **UNCLOS**, their approaches differ. Malaysia maintains a cautious, non-confrontational "bureaucratic" approach toward China's incursions, whereas India has become more vocal about maritime security in the Indo-Pacific.
- **ASEAN Centrality:** India's challenge is to align its "Act East Policy" with Malaysia's regional priorities without getting caught in the US-China rivalry.
- **Labor Welfare:** Issues regarding the social security of Indian workers and visa facilitation (like the **2026 Social Security Agreement**) require constant diplomatic management to avoid becoming domestic political flashpoints in either country.

Way Forward

1. Strengthening the "Tech-Bridge"

- **Semiconductor Integration:** India should leverage Malaysia's 50-year expertise in **Outsourced Semiconductor Assembly and Test (OSAT)** to complement its own "India Semiconductor Mission." Creating a joint supply chain corridor can reduce dependence on East Asian giants.
- **Digital Sovereignty:** Scaling up the integration of **UPI and PayNet** will facilitate seamless remittances for the 3-million-strong diaspora and boost small-business trade.

2. Institutionalizing Economic Ties

- **MICECA Review:** Expediting the review of the Malaysia-India Comprehensive Economic Cooperation Agreement is essential to address the trade deficit and include modern chapters on E-commerce and Labor mobility.
- **Local Currency Expansion:** Encouraging more banks to adopt the **INR-Ringgit** settlement mechanism will provide a cushion against global currency volatility.

3. Defense and Maritime Security

- **From Buyer to Partner:** Transitioning from "exercises" to "co-production." If Malaysia selects the **LCA Tejas**, India should establish the proposed MRO (Maintenance, Repair, and Overhaul) hub in Malaysia, serving the wider ASEAN region.
- **Strait of Malacca Cooperation:** Enhanced coordinated patrols and sharing of "White Shipping" (commercial) data under the **SAGAR** initiative to ensure the safety of global sea lanes.

4. Navigating Diplomatic Sensitivities

- **Silent Diplomacy:** Creating a dedicated high-level mechanism to handle sensitive issues like the extradition of **Zakir Naik** or domestic political statements, ensuring they do not derail the broader economic and strategic agenda.
- **ASEAN Leadership:** As Malaysia takes on a leading role in ASEAN, India should use this opportunity to synchronize its **Act East Policy** with Malaysia's regional vision for the South China Sea.

Conclusion:

The India-Malaysia partnership is poised to transcend traditional trade, evolving into a **high-tech alliance**. By integrating **semiconductor supply chains**, digital public infrastructure, and **green energy**, both nations can lead the **Global South**. This synergy will secure the **Strait of Malacca** and anchor a stable, multipolar Indo-Pacific.

Q. Discuss the strategic, economic, and people-to-people dimensions of relations between India and Malaysia. What are the major challenges in the relationship, and how can they be addressed? 250 words

1.2.3. INDIA GREECE RELATION

Context:

The relationship between India and Greece has undergone a paradigm shift, evolving from a historical and cultural association into a **Strategic Partnership**. As both nations sit at the crossroads of critical maritime corridors, their synergy is vital for the emerging Indo-Pacific and Mediterranean security architecture.



Historical Timeline: India-Greece Relations

1. Ancient Origins (4th – 1st Century BCE)

- **The Alexander Catalyst (326 BCE):** Alexander the Great's arrival at the Beas River marked the first formal contact. The established **Satraps (Provinces)** created a permanent Greek presence in Northwest India.
- **Mauryan Diplomacy:** The defeat of Seleucus Nicator by Chandragupta Maurya led to the first known international matrimonial alliance and the appointment of **Megasthenes**, whose work **Indica** remains a foundational text for Indian history.
- **Indo-Greek Synthesis:** The reign of **Menander I (Milinda)** saw the birth of the **Milinda Panha**, a philosophical dialogue merging Greek logic with Buddhist tenets.

2. Cultural & Intellectual Fusion

- **Gandhara School of Art:** A unique Greco-Buddhist artistic style where Indian spiritual themes were rendered with Greek physical realism (e.g., **Buddha portrayed with curly hair and muscular features like Apollo**).
- **Science & Astronomy:** Exchange of knowledge was profound; Indian astronomy (**Gargi Samhita**) openly acknowledges Greek mastery in the field.
- **Philosophy:** Parallel developments in **Stoicism (Greece)** and **Upanishadic thought (India)** suggest deep intellectual cross-pollination.

3. Trade & The Colonial Gap

- **Maritime Silk Route:** During the Roman/Byzantine eras, Greeks acted as primary intermediaries for Indian spices and silk.
- **Merchant Communities:** In the 1770s, Greek traders established a presence in **Kolkata and Dhaka**. The Greek Orthodox Church in Kolkata (1780) stands as a legacy of this era.

4. Modern Era (1947 – Present)

- **Establishment of Ties (1950):** Formally entered diplomatic relations post-independence.
- **Strategic Reliability (1998):** Greece stood out by **refusing to condemn India's nuclear tests** (Pokhran-II), reinforcing trust during a period of global isolation.
- **Diplomatic Reciprocity: India:** A "**quid pro quo**" of diplomatic support has defined the modern era. India supports Greece on the **Cyprus issue**, while Greece consistently supports India's position on **Kashmir** and its claim for a permanent seat at the UNSC.

Area of Cooperation of the India Greece Relations

1. Defense and Security Cooperation

Defense is the strongest pillar of the upgraded **Strategic Partnership** (2023).

- **Joint Exercises:** Regular participation in high-stakes drills like **Exercise Iniochos** (Air Force) and **Exercise Tarang Shakti**.
- **Maritime Security:** Both nations advocate for **UNCLOS** (United Nations Convention on the Law of the Sea) and a "Free and Open Indo-Pacific." They collaborate on anti-piracy and security in the Mediterranean and Indian Ocean.
- **Defense Industry:** Moving from buyer-seller relationships to **joint production** of defense equipment and maintenance of hardware (especially aircraft).

2. Connectivity and Infrastructure (IMEC)

Greece is India's "**Gateway to Europe**" via the Mediterranean Sea.

- **IMEC Corridor:** The **India-Middle East-Europe Economic Corridor** is a game-changer. Greece's **Port of Piraeus** is a leading candidate to be the primary European entry point for Indian goods.
- **Civil Aviation:** Increased focus on direct flight connectivity to boost tourism and business exchange.

3. Economic and Trade Relations

- **Trade Target:** Both nations have committed to **doubling bilateral trade by 2030** (currently ~\$2 billion).
- **Key Sectors:**
 - **Shipping:** Utilizing Greek expertise in global shipping (Greece owns roughly 20% of the world's merchant fleet).
 - **Agriculture:** Joint ventures in food processing and cold storage.
 - **Infrastructure:** Indian firms (like GMR) are actively building major infrastructure in Greece, such as the **Kastelli Airport** in Crete.

4. Energy and Climate Change

- **International Solar Alliance (ISA):** Greece joined the ISA in 2021, marking a shift toward renewable energy collaboration.
- **Green Hydrogen:** Both nations are exploring the production of green fuels for shipping.

5. Migration and Mobility

- **MMPA:** A **Migration and Mobility Partnership Agreement** is being finalized to facilitate the movement of skilled professionals, students, and workers while curbing illegal migration.

6. Science and Technology

- **Space Cooperation:** Discussions between **ISRO** and the **Hellenic Space Center** for satellite tracking and maritime surveillance.
- **Digital Economy:** Cooperation in **UPI** (Unified Payments Interface) integration and FinTech to ease transactions for Indian tourists and businesses in Greece

Significance of the India-Greece Relationship

1. Geopolitical Significance: The "Counter-Axis" Strategy

- **The Turkey Factor:** Turkey's growing "Triple Axis" with **Pakistan and Azerbaijan** (supporting each other on Kashmir and Nagorno-Karabakh) has pushed India to seek reliable partners in the Eastern Mediterranean. Greece, having its own tensions with Turkey, is a natural strategic counterweight.
- **Support on Core Issues:** Greece is a consistent supporter of India's stance on **Kashmir**, while India reciprocates by supporting Greece on the **Cyprus dispute**. This "sovereignty-based" mutual support is a bedrock of their diplomacy.

2. Geo-economic Significance: The Gateway to Europe

- **IMEC Terminal:** With the **India-Middle East-Europe Economic Corridor (IMEC)**, India needs a stable entry point into the European Single Market. The Greek **Port of Piraeus** (one of the largest in the Mediterranean) serves as the most logical logistical terminus for Indian goods.

- **Alternative to BRI:** Strengthening ties with Greece helps India provide an alternative to China's "Belt and Road Initiative" (BRI), as China currently holds a significant stake in Piraeus.

3. Maritime & Security Significance

- **Mediterranean Footprint:** As India expands its naval reach, Greece provides a "home base" in the Mediterranean. Joint exercises in these waters allow the **Indian Navy and Air Force** to project power far beyond the Indian Ocean.
- **Adherence to UNCLOS:** Both nations are vocal proponents of the **United Nations Convention on the Law of the Sea (UNCLOS)**, countering unilateral territorial claims by aggressive neighbors (China in the South China Sea and Turkey in the Aegean Sea).

4. Energy & Sustainability Significance

- **Green Shipping:** Greece owns nearly **20% of the world's merchant fleet**. Collaboration in **Green Hydrogen** is significant for decarbonizing global shipping routes.
- **Energy Transit:** Greece is positioning itself as an energy hub for Europe (via the EastMed pipeline). Partnering with Greece gives India a seat at the table in Mediterranean energy politics.

5. Demographic & Labor Significance

- **Migration Management:** Greece faces a labor shortage in agriculture and construction, while India has a surplus of skilled and semi-skilled labor. The **Migration and Mobility Partnership** ensures a legal, regulated flow of people, benefiting both economies and reducing illegal migration.

Challenges of the India Greece Relation

1. The "China Factor" in Greece

- **Port of Piraeus:** A major challenge is that the **COSCO Shipping** (a Chinese state-owned enterprise) owns a majority stake (67%) in the Port of Piraeus.
- **Strategic Conflict:** Since Piraeus is the intended terminal for the **IMEC**, China's control over the infrastructure could pose security and operational risks for Indian trade interests.
- **Investment Competition:** China has been a primary investor in Greece during its debt crisis, making it difficult for Greece to completely decouple from Beijing's economic influence.

2. Regional Volatility and IMEC Implementation

- **The Middle East Crisis:** The IMEC corridor (India-UAE-Saudi Arabia-Jordan-Israel-Greece) relies heavily on stability in West Asia. Ongoing conflicts (like the Israel-Hamas-Hezbollah situation) threaten the viability of the rail and sea links required to reach Greek shores.
- **Logistical Gaps:** There is still a lack of seamless rail-to-ship connectivity between the various transit points of the corridor.

3. The Turkey-Pakistan-Azerbaijan Axis

- **Security Pressures:** Turkey's aggressive stance in the Eastern Mediterranean and its military-political alignment with Pakistan forces Greece and India into a defensive posture.
- **Balancing Act:** While this brings India and Greece closer, it also complicates India's broader relations in the Islamic world, as Turkey remains an influential regional player.

4. Economic and Trade Bottlenecks

- **Low Bilateral Trade:** Despite the potential, trade stands at roughly **\$2 billion**, which is significantly lower than India's trade with other European partners like France or Germany.
- **Regulatory Hurdles:** Indian exporters often face stringent **EU sanitary and phytosanitary (SPS) standards**, which act as non-tariff barriers for agricultural and pharmaceutical products.
- **Limited Direct Connectivity:** The lack of frequent direct flights and shipping lines currently increases the "cost of doing business."

5. Technological and Environmental Costs

- **High Cost of Green Transition:** While both nations are keen on **Direct Air Capture (DAC)** and Green Hydrogen, these technologies are currently expensive.
- **R&D Gap:** Scaling DAC from a niche experiment to a mainstream source for **synthetic low-carbon fuels** in the shipping industry requires massive capital investment that neither nation has fully committed yet.

Way Forward

- **Diversifying Infrastructure:** To mitigate the "China Factor" at Piraeus, India should invest in and utilize alternative Greek ports such as **Thessaloniki** or **Alexandroupolis**, ensuring multiple gateways into Europe.
- **Operationalizing IMEC:** India must lead diplomatic efforts to stabilize the "Middle-East segment" of the corridor while fast-tracking the digital and physical integration of customs and rail links.
- **Defense Industrial Integration:** Shift from joint exercises to **joint manufacturing**. Establishing "Maintenance, Repair, and Overhaul" (MRO) hubs in Greece for Indian-made platforms can serve the broader Mediterranean and European markets.
- **Green Technology Leadership:** Leverage the **International Solar Alliance** to scale **Direct Air Capture (DAC)** technology. This can transform the Greek shipping fleet into a leader in **synthetic low-carbon fuels**, fulfilling both nations' **net-zero commitments**.
- **Institutionalizing Mobility:** Early implementation of the **Migration and Mobility Partnership Agreement (MMPA)** to provide Greece with skilled labor in sectors like IT, nursing, and agriculture, while protecting the rights of Indian workers.
- **Soft Power Synergy:** Utilize the shared **Greco-Buddhist heritage** (Gandhara Art) and the International Day of Yoga to increase people-to-people ties and boost the tourism circuit between Athens and Buddhist sites in India.

Conclusion

The India-Greece partnership is a cornerstone for **Viksit Bharat @2047**, transforming the Mediterranean into a "maritime bridge" for Indian aspirations. By integrating the **IMEC** with Greek logistics and pioneering **Green Hydrogen** technologies, both nations can lead the global energy transition, securing India's role as a **Vishwa Mitra** and an economic powerhouse.

Q. "In the context of India–Greece relations, critically examine the key drivers behind their recent transformation and analyse the strategic significance of this partnership for India's European and Indo-Pacific outreach." 250 words

2.1. SCIENCE & TECHNOLOGY

2.1.1. AMCA AND INDIA'S DEFENCE INDUSTRIAL ECOSYSTEM

Context:

The government is diversifying India's aerospace ecosystem by proposing to award the **AMCA prototype contract** to private players, bypassing HAL. This shift aims to end HAL's monopoly, address production delays, and foster a competitive **private defense industrial complex**.

AMCA as a National Strategic Project

The **Advanced Medium Combat Aircraft (AMCA)** is not merely another fighter programme; it represents:

- India's entry into **5th-generation air combat**
- Mastery over **stealth design, sensor fusion, avionics, AI-assisted warfare**
- Strategic autonomy in **high-end aerospace manufacturing**



Significance of Private Sector Participation in Fighter Aircraft Development

1. Breaking the Public Sector Monopoly

The most immediate significance is the creation of a **Second Aircraft Manufacturing Line**.

- **Commercial Discipline:** Introducing private players like Tata, L&T, or Bharat Forge brings market-driven benchmarks for cost, quality, and delivery—concepts often sidelined in PSU environments.
- **Avoiding "Bottlenecking":** With HAL currently overburdened by orders for 180+ Tejas Mk-1A and Mk-2 aircraft, a private line ensures the AMCA timeline is not cannibalized by existing production loads.

2. Deepening the "Atmanirbhar" Ecosystem

Privatization is the key to building a robust **Military-Industrial Complex (MIC)**:

- **IP Ownership:** Under the new model, the government retains the Intellectual Property (IP), but the private sector masters the **Lead System Integration (LSI)**—the most complex part of aerospace manufacturing.
- **Tier-2/3 Growth:** Private lead integrators are structurally more agile at fostering a network of MSME suppliers, creating a pyramid of domestic aerospace expertise.

3. Global Competitiveness and Exports

- **Agility in Innovation:** Private firms can more easily form Joint Ventures (JVs) with global giants (like Safran for engines or Boeing for airframes) to absorb technology.

- **Export Mindset:** Unlike PSUs, private entities are incentivized to design for the global market, potentially turning the AMCA into an exportable 5th-gen alternative for nations wary of US or Russian restrictions.

4. Risk Mitigation through Diversification

- **Financial Hedging:** Conglomerates can spread the high R&D risks of fighter development across their civilian portfolios, whereas HAL is entirely dependent on government budgetary cycles.
- **Competitive Bidding:** A multi-vendor environment forces companies to innovate on manufacturing processes (e.g., using **3D printing** or **AI-driven assembly**) to stay cost-competitive.

Challenges of Private Sector Participation in Fighter Aircraft Development

1. The Experience & Expertise Gap

- **"Start-up" Status:** India's private giants (Tata, L&T, Bharat Forge) are globally competitive in component manufacturing but have **zero experience** as Lead Integrators for a complete fighter aircraft.
- **Complexity:** Building a 5th-generation stealth prototype is vastly more complex than the aerospace parts or airframes they currently produce.
- **Institutional Memory:** HAL possesses 80 years of "hard-won" expertise in flight testing, weapon integration, and life-cycle support that private entities must now acquire or "poach" rapidly.

2. Infrastructure & Capital Risk

- **Bengaluru Hub Dependency:** The entire design-test ecosystem (DRDO labs, ASTE, National Flight Test Centre) is concentrated in Bengaluru.
- **Sunk Costs:** Private players may be hesitant to invest the massive capital required for specialized rigs and hangars when the initial contract is limited to **only five prototypes** without an ironclad "series production" guarantee.
- **The SPV Model:** The initial Special Purpose Vehicle (SPV) model faced hurdles because private firms were wary of the high financial risks and the "black hole" of R&D costs.

3. Fragmentation of the Design-Build Chain

- **Loss of Singular Control:** Historically (e.g., HF-24 Marut), having design and production under one roof ensured seamless resolution of technical differences.
- **Ownership Ambiguity:** With **ADA (Government)** as the designer and a **Private Firm** as the builder, accountability for flight-test failures or design-to-manufacturing friction becomes a potential legal and operational bottleneck.

4. Human Resource Bottlenecks

- **Test Aircrew:** India has only one school for test pilots. A private developer will struggle to find and fund the specialized crew needed to test a futuristic, unstable stealth platform from day one.

- **Skilled Workforce:** Private firms will likely need to recruit heavily from retired HAL and ADA personnel to bridge the skill gap, potentially just shifting the same talent pool rather than expanding it.

Way Forward

1. Collaborative Infrastructure Model

India should adopt a **Plug-and-Play** model for infrastructure:

- **Shared National Assets:** Grant private consortia (like the shortlisted Tata, L&T, or Bharat Forge) access to **HAL's Bengaluru airfield**, ADA's National Flight Test Centre, and DRDO's specialized labs.
- **Co-location:** Private design and engineering teams should be co-located with the **Aircraft and Systems Testing Establishment (ASTE)** to ensure continuous user (IAF) feedback during the prototype phase.

2. Refining the Industry Partnership Model

The shift from the initial "Special Purpose Vehicle" (SPV) to a more competitive **Industry Partnership Model** requires clear financial de-risking:

- **Assured Production Commitment:** The Ministry of Defence should provide a clear "buy back" guarantee or a firm commitment for the first two squadrons (Mk-1) to ensure private firms can justify the high R&D and capital expenditure.
- **Tier-2/Tier-3 Integration:** The lead private integrator must be encouraged to decentralize work packages to a broader **domestic vendor network** (including MSMEs) to prevent a single point of failure in the supply chain.

3. Addressing the Engine Bottleneck

The "heart" of the 5th-Gen fighter remains its propulsion. The Way Forward involves a dual-track approach:

- **Mk-1 (Short-term):** Ensure smooth integration of the **GE F414 engines** for the initial prototypes.
- **Mk-2 (Strategic):** Fast-track the **Safran-GTRE 120kN engine** joint venture. True strategic autonomy is only achieved once India owns the Intellectual Property (IP) for the engine, allowing for future upgrades without foreign clearance.

4. Human Capital and "Pilot-in-the-Loop" Design

- **Test Pilot Expansion:** India must scale up its only test pilot school or allow private-sector pilots to train alongside the IAF to build a larger pool of expertise for futuristic flight testing.
- **AI and Sensor Fusion:** Since the private sector leads in software and AI, they should focus on the **"Digital Backbone"** of the AMCA, allowing the aircraft to function as a command node for unmanned systems (Loyal Wingman).

Conclusion

The AMCA project marks a definitive pivot toward **Atmanirbhar Bharat**, transitioning from public-sector dependence to a private-led industrial base. By fostering a competitive ecosystem, India secures technological sovereignty, ensuring its 5th-generation air superiority is developed, manufactured, and sustained entirely within its borders.

3.2. ECONOMY

3.2.1. FOOD SECURITY IN INDIA

Context:

Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

- **Global Hunger Index (GHI) 2025-26:** India ranks **105th out of 127** countries, with a score of **27.3** (Serious category).
- **Economic Transition:** India has moved from being a food-aid recipient (PL-480 era) to the world's largest rice exporter (**20.2 million tonnes** in FY25).



The FAO defines food security through four pillars:

1. **Availability:** The "supply side" of food security. It refers to the **physical existence** of food in a country or area through:
 - Domestic agricultural production.
 - Commercial imports.
 - Food aid and national buffer stocks (e.g., FCI godowns in India).
2. **Accessibility:** The ability of individuals to actually **reach and acquire** food. It is not enough for food to be in the market; people must have:
 - **Economic Access:** Adequate income or purchasing power to buy food.
 - **Physical Access:** Adequate infrastructure (roads, PDS shops) to reach the food.
3. **Affordability / Utilization:** Often termed "utilization," this focuses on the **nutritional quality** and the body's ability to use it.
 - **Nutritional Value:** Access to clean water, sanitation, and healthcare to ensure the body absorbs nutrients.
 - **Food Safety:** Proper food preparation and dietary diversity to prevent "hidden hunger."
4. **Stability:** The **consistency** of the other three pillars over time. Food security must **not be threatened by:**
 - **Seasonal shocks** (e.g., crop failure or lean seasons).
 - **Economic shocks** (e.g., sudden price hikes or unemployment).
 - **Political/Climatic shocks** (e.g., wars, floods, or droughts).

Why India Needs Food Security?

1. High Malnutrition & "Hidden Hunger"

- Despite being a food-surplus nation, India faces a "**Nutrition Paradox.**"
- **Stunting & Wasting:** NFHS-5 data shows ~35% of children are stunted.

- **Anemia:** Over 50% of women and children suffer from iron deficiency. Food security ensures access to **fortified foods** to combat these micronutrient gaps.

2. Demographic Pressure

- With a population exceeding **1.4 billion**, India must ensure a consistent supply chain. Any disruption in food availability can lead to massive **social unrest** and inflation, as seen during global supply chain shocks in 2024-25.

3. Climate Vulnerability

- Indian agriculture is a "**gamble on the monsoons.**"
- **Extreme Weather:** Heatwaves and unseasonal rains threaten crop yields.
- **Resilience:** Food security systems (like buffer stocks) act as a shock absorber against climate-induced crop failures.

4. Economic Stability (Inflation Control)

- Food occupies a large weight in the **Consumer Price Index (CPI)**. Food price volatility directly impacts the disposable income of the poor.
- Securing the food supply prevents "Agflation" (Agricultural Inflation), which can destabilize the national economy.

5. Poverty-Hunger Trap

- Food security is a prerequisite for **Human Capital Development**. A hungry child cannot learn (impacts Education/SDG 4).
- A malnourished worker is less productive (impacts GDP/SDG 8).

6. Ethical & Constitutional Obligation

- **Article 21:** The Supreme Court has interpreted the "**Right to Life**" to include the **Right to Food**.
- **SDG 2:** India is committed to the Global Goal of "**Zero Hunger**" by 2030.

Government Initiatives

Pillar 1: Farm-Level Resilience & Storage

- **PM Dhan-Dhaanya Krishi Yojana (PM-DDKY):** Launched in Oct 2025, this 6-year scheme targets **100 low-productivity districts** to enhance yield through sustainable practices and crop diversification.
- **World's Largest Grain Storage Plan in Co-operative Sector:** Utilizing Primary Agricultural Credit Societies (PACS) to create decentralized storage, reducing post-harvest losses and preventing distress sales by farmers.
- **Digital Agriculture Mission:** Creating a "**Digital Public Infrastructure**" for farmers, including the **AgriStack** (identity/land records) to ensure subsidies like PM-KISAN reach the right hands without leakages.

Pillar 2: Nutritional Security (Hidden Hunger)

- **Mission Saksham Anganwadi and Poshan 2.0:** Focuses on maternal and child nutrition.

- **Rice Fortification:** Mandatory supply of fortified rice (enriched with Iron, Folic Acid, and Vitamin B12) through PDS, Mid-Day Meals (PM-POSHAN), and ICDS.
- **Saksham Anganwadis:** Upgrading 2 lakh centres with better infrastructure (audio-visual aids, clean water) to improve early childhood nutrition.
- **National Food Security and Nutrition Mission (NFSNM):** Renamed from NFSM in 2025-26, adding a dedicated sub-mission for **Nutri-Cereals (Shree Anna/Milletts)**.

Pillar 3: Price & Stock Management

- **Wheat Stock Limits (2025-26):** Imposed on traders, wholesalers, and big chain retailers to prevent hoarding and unscrupulous speculation during the 2026 harvest season.
- **Mission for Aatmanirbharta in Pulses & Oilseeds:** Reducing import dependency to stabilize domestic prices of essential proteins and fats.

Pillar 4: Targeted Distribution & Subsidies

- **PM-Garib Kalyan Anna Yojana (PMGKAY):** Integrated with the National Food Security Act (NFSA), it provides **free foodgrains** to **81.35 crore** beneficiaries. In late 2025, it was extended for five years (until **December 2028**), with an outlay of **₹11.80 lakh crore**.
- **One Nation One Ration Card (ONORC):** Fully functional nationwide, allowing migrants to access their entitlements from any Fair Price Shop (FPS) using biometric authentication.
- **Open Market Sale Scheme (OMSS):** Used aggressively in early 2026 to offload wheat and rice stocks to curb retail inflation.

Global Initiatives

- **India-UAE Food Corridor:** Streamline supply chains and use India as a "**food bowl**" for **West Asia** while ensuring domestic price stability.
- **WFP Partnership:** India supplies **fortified rice** to global hunger hotspots, positioning itself as a "Solution Provider" rather than just a recipient.
- **International Year of Rangelands and Pastoralists (2026):** The UN has designated **2026** to highlight the role of **sustainable livestock and rangelands** in global food security, particularly for **indigenous communities and arid regions**.
- **G20 Global Alliance Against Hunger and Poverty (2025–2026):** Launched during Brazil's G20 Presidency. Aims to reach **500 million people** with cash transfers and empower **100 million smallholder farmers** by 2030.

Committees on Food Security in India

- **Shanta Kumar Committee (2015):** Recommended **restructuring FCI** to improve efficiency.
 - Suggested reducing NFSA coverage from 67% to 40%.
 - Advocated for **Direct Benefit Transfer (DBT)** in PDS.
- **Ashok Dalwai Committee:** Focused on **Doubling Farmers' Income**; emphasized that food security is impossible without "income security" for producers.
- **NITI Aayog Task Force (2025):** Proposed the "**Nutrition Basket**" approach—moving PDS beyond just wheat/rice to include millets, pulses, and oilseeds.

Challenges to Food Security in India

1. Structural & Supply Chain Issues

- **Leakages in PDS:** Despite massive digitalization, estimates in early 2026 suggest a **~20-28% leakage** in the Public Distribution System (PDS).
- **Infrastructure Deficit:** India lacks adequate **cold chain storage**, leading to a loss of approximately **40% of fresh produce** (fruits and vegetables) post-harvest.
- **Fragmented Landholdings:** Over 86% of Indian farmers are "small and marginal," making it difficult to achieve economies of scale and adopt modern, yield-boosting technologies.

2. The "Hidden Hunger" Challenge

- **Monoculture Focus:** The MSP-driven system incentivizes wheat and rice, discouraging the production of nutrient-dense **pulses and millets**.
- **Micronutrient Deficiency:** While people may have enough calories, they lack essential vitamins and minerals. **NFHS-5** and subsequent 2025 updates highlight that **over 50% of women** and children remain anemic.
- **Soil Health Decay:** Over-reliance on chemical fertilizers (Urea) has led to Zinc and Boron deficiencies in the soil, which translates directly into nutrient-deficient crops.

3. Climate & Environmental Risks

- **Extreme Weather Events:** The "2024-25 Heatwaves" and erratic 2026 monsoons have demonstrated that climate change can wipe out **10–15% of wheat yields** in a single season.
- **Groundwater Depletion:** Water-intensive crops like paddy in Punjab/Haryana are pushing water tables to "danger zones," making future production unsustainable.
- **Land Degradation:** FAO's 2025 reports indicate that nearly **30% of India's land** is undergoing degradation, threatening long-term food availability.

4. Economic & Global Pressures

- **Inflationary Pressures:** Global conflicts (e.g., in the Middle East or Eastern Europe) drive up **fertilizer and fuel prices**, directly increasing the "Economic Cost" of food for the government and consumers.
- **The Subsidy Burden:** The food subsidy bill (PMGKAY) now accounts for nearly **4-5% of the total budget**, limiting the fiscal space for long-term agricultural investments like irrigation.

5. Socio-Demographic Barriers

- **Exclusion Errors:** The 2011 Census is still the basis for NFSA coverage in 2026; missing a fresh census means nearly **10 crore needy people** remain outside the safety net.
- **Gender Bias:** Intra-household food distribution often favors men, leaving women and girls with lower nutritional intake even in food-secure households.

Way Forward

- **From Calories to Nutrition:** Shift PDS focus from a "Wheat-Rice" duopoly to a "**Nutrition Basket**" including pulses, oilseeds, and **Shree Anna (Millets)** to combat hidden hunger.
- **Update Beneficiary Data:** Fast-track the link between the **e-Shram portal** and NFSA to include nearly 10 crore citizens currently excluded due to the use of outdated 2011 Census data.

- **Digital Public Infrastructure (DPI):** Fully implement the "AgriStack" to provide farmers with end-to-end services, from soil testing to direct market access via e-NAM.
- **Reducing Post-Harvest Losses:** Execute the "World's Largest Grain Storage Plan" at the PACS (Primary Agricultural Credit Societies) level to create decentralized, modern silos and cold chains.
- **Precision Farming:** Use **AI-enabled monitoring** and drone technology for targeted fertilizer application (Nano-Urea) to restore soil health and optimize input costs.
- **Climate-Smart Agriculture:** Invest in **multi-stress tolerant crop varieties** (heat and flood-resistant) as a primary defense against the erratic weather patterns observed in early 2026.
- **Water Governance:** Expand "Per Drop More Crop" initiatives, specifically targeting "water-guilt" crops like sugarcane and paddy in arid regions through micro-irrigation.

Conclusion

Food security in 2026 is no longer a question of "production" but of "**management and nutrition.**" By transitioning from a cereal-centric PDS to a diversified "Nutrition Basket," and leveraging agritech, India can achieve **SDG 2 (Zero Hunger)** by 2030 while becoming a global reliable supplier.

Q. What are the salient features of the National Food Security Act, 2013? How has the Food Security Bill helped in eliminating hunger and malnutrition in India? 250 Words

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