JUNE 2025

CHAHAL ACADEMY

SUMMARY OF

YOJANA

OPERATION SINDOOR TARGETS

SERIAL	TERRORIST CAMPS	AREA
1.	SAWAI NALA, MUZAFFARABAD	POJK
2.	SYEDNA BILAL, MUZAFFARABAD	
3.	GULPUR, KOTLI	
4.	BARNALA, BHIMBER	
5.	ABBAS, KOTLI	
6.	BAHAWALPUR	PAKISTAN
7.	MURIDKE	
8.	SARJAL	
9.	MEHMOONA JOYA	

Nine Targets prioritised as per the existing presence of terrorist

OPERATION SINDOOR

A Decade of International Day of Yoga

NEW DELHI | AHMEDABAD | BHAVNAGAR | CHANDIGARH | DEHRADUN | GANDHINAGAR | HYDERABAD | JAIPUR | KANPUR | KOLKATA | LUCKNOW | MUMBAI | PATNA | RAIPUR | RAJKOT | SURAT | THANE | VADODARA |
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TOPIC 1: OPERATION SINDOOR - INDIA'S STRATEGIC CLARITY AND CALCULATED FORCE

I. Background and Trigger for Operation SINDOOR

- **The Pahalgam Attack – April 22, 2025**
  - Pakistan-backed terrorists stormed a village in Pahalgam.
  - Attackers asked villagers their religion and killed 26 people.
  - The goal was to incite **communal violence**, marking a shift from typical cross-border terrorism to **internal destabilization**.
- **Religious Site Attacks**
  - Pakistan escalated through drone and artillery attacks on religious sites:
    - **Shambhu Temple** in Jammu
    - **Gurdwara** in Poonch
    - **Christian convents**
  - These were deliberate, coordinated attempts to **fracture India's communal harmony**.

II. India's Response – Operation SINDOOR Launched

- **Nature of Operation**
  - Declared on May 7 as a **measured, non-escalatory, focused** military response.
  - Targeted **terror infrastructure**, not civilian or unrelated military assets.
  - Reiterated that any attack on Indian military targets would invite **decisive response**.
- **Retaliatory Air Strikes**
  - **Key targets destroyed:**
    - Radar installations in Lahore
    - Radar facilities near Gujranwala
- **Ceasefire Announcement – May 10, 2025**
  - Pakistan's DGMO requested a ceasefire.
  - Both sides agreed to halt firing across land, air, and sea from **1700 hrs IST**.
- **Post-Ceasefire Drone Incursions**
  - Despite the ceasefire, Pakistan sent UAVs into Indian civilian/military areas.
  - Indian defence systems **intercepted all intrusions**.
  - Field commanders were authorised to respond to **any violations**.

III. The Information Warfare Dimension

- **Pakistan's Propaganda Offensive**
  - Aggressive misinformation campaign launched by Pakistan post-attack.
  - **Intent:** Mislead international community, shift narrative, and justify aggression.
- **India's Digital Response**
  - Transparent communication of facts.
  - Exposed **manipulative social media accounts** from Pakistan.
  - Launched **media literacy campaigns** to help citizens identify fake news.
  - Maintained strategic calm and **digital vigilance**.

IV. Non-Military Measures and Strategic Diplomacy

(i) Water as Leverage – Suspension of Indus Waters Treaty

- **Termination of Treaty Signed in 1960**
  - Suspended until Pakistan irrevocably stops supporting cross-border terrorism.
- **Impact on Pakistan**
  - **Indus basin critical for:**
    - **80%** of cultivated land
    - **93%** of water use
    - Supports **237 million people**, 25% of GDP
  - **Vulnerabilities:**
    - **Mangla & Tarbela dams** have only 10% live storage.
    - Disruption could lead to **food shortages**, **power cuts**, and **industrial paralysis**.
- **Benefits for India**
  - Removes restrictions on **Jhelum & Chenab.**
  - Enables **dam and reservoir construction** in J&K, Ladakh, Punjab, and Haryana.
  - Boosts irrigation and hydroelectricity.
  - **Reinforces the national message:** "Blood and water cannot flow together."

(ii) Trade and Mobility Restrictions

- **Closure of Attari-Wagah Border**
  - Check post shut; crossovers allowed only until May 1.
- **Trade Suspension**
  - Exports like **onions** stopped.

- Imports of **cement, textiles were banned**.
- Severely disrupted Pakistan's fragile economy.

- **Deportation and Visa Revocation**
  - All Pakistani nationals deported.
  - **SVES (SAARC Visa Exemption Scheme)** suspended for Pakistanis.
- **Cultural Isolation**
  - Ban on Pakistani artists and content.
  - Streaming platforms barred from hosting Pakistani media.

(iii) Diplomatic and Intelligence Pressure

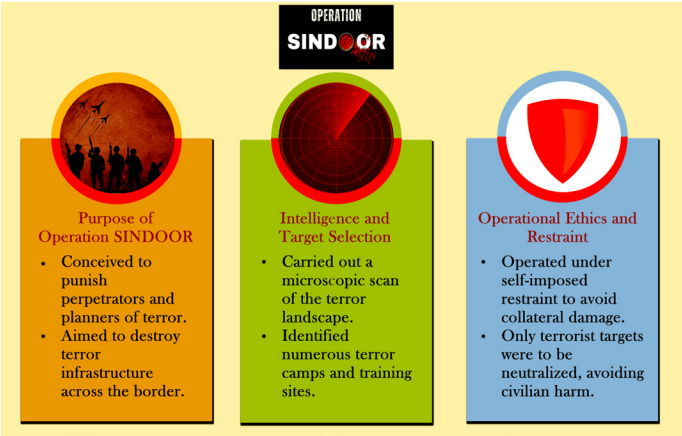
- **Pakistan's Isolation on Global Forums**
  - Terror links publicly exposed.
  - Support gained from several countries.
- **Reduction of Diplomatic Presence**
  - Pakistan's military advisors in India declared **Persona Non Grata**.
  - Embassy staff reduced from **55 to 30.**

V. Strategic Leadership and Doctrine Shift

(i) Prime Minister Modi's Leadership

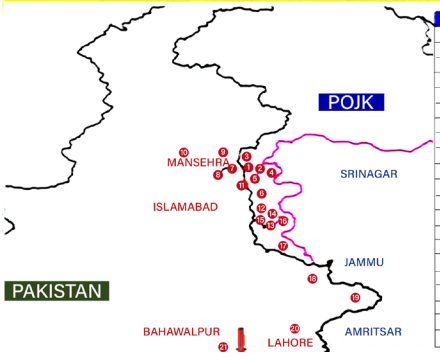
- **Swift, Composed Decision-Making**
  - PM Modi, on a foreign visit, took immediate control.
  - Avoided emotional retaliation; emphasized **strategic unpredictability**.
- **Clarity of Objective**
  - **Terrorism = war.** No separation between **terror groups and their state sponsors**.
  - Decisive, ethical, and **India-centric doctrine** adopted.
- **Doctrine of Response**
  - **Terror attack = Act of war**
  - **Nuclear blackmail** won't deter response
  - No distinction between **state** and **non-state actors**
  - Terror & talks / Terror & trade / Water & blood — **cannot coexist**
- **Public Address – May 12**
  - Operation SINDOOR represents **justice and unity**.
  - "**We have always defeated Pakistan; this operation adds a new dimension.**"

VI. Achievements of Operation SINDOOR



- **Nine Terror Camps Destroyed**
  - In PoJK and Pakistan; over **100 terrorists were eliminated**.

TERRORIST CAMPS IN POJK & PAKISTAN



SERIAL	CAMPS
1.	SAWAI NALA
2.	SYED NA BILAL
3.	MASKAR-E-AQSA
4.	CHELABANDI
5.	ABDULLAH BIN MASOOD
6.	DULAI
7.	GARHI HABIBULLAH
8.	BATRASI
9.	BALAKOT
10.	OGHI
11.	BOI
12.	SENSA
13.	GULPUR
14.	KOTLI
15.	BARALI
16.	DUNGI
17.	BARNALA
18.	MAHMOONA JOYA
19.	SARJAL
20.	MURIDKE
21.	BAHAWALPUR

- **Deep Cross-Border Strikes**
  - Targets hit in **Lahore, Bahawalpur, Punjab**, etc.
- **New Strategic Red Line**
  - Terror as state policy = invites **direct and forceful retaliation**.
- **Dual Targeting**
  - Both terrorists and their **sponsors** neutralised.
- **Exposed Pakistan's Air Defence Flaws**
  - Indian Rafale jets, **SCALP** and **HAMMER missiles** dodged **Chinese-supplied defences**.
- **India's Air Defence Superiority**
  - Hundreds of drones neutralised by the **Akashteer system** and other indigenous technologies.
- **Surgical Precision without Escalation**
  - Avoided civilian and non-terror targets.

- **Elimination of High-Value Terror Commanders**
  - ➢ **Targets included:**
    - ♦ Yusuf Azhar (IC-814 hijack)
    - ♦ **Abdul Malik Rauf**
    - ♦ **Mudassir Ahmad** (Pulwama links)
- **Airstrikes on 11 Pakistani Military Bases**
  - ➢ Destroyed **20% of Pakistan's air assets** in 23 minutes.
  - ➢ **Bholari Air Base** suffered major losses.
- **Tri-Service Coordination**
  - ➢ Army, Navy, and Air Force functioned in synchronised strikes.
- **Strategic Autonomy**
  - ➢ India did not seek international approval; asserted right to **self-defence**.
- **Global Support**
  - ➢ Widespread international backing – a shift from usual calls for restraint.
- **Narrative Shift on Kashmir**
  - ➢ Global framing focused solely on **counter-terrorism**, **not Kashmir** politics.

Conclusion: A Paradigm Shift in India's National Security Posture

- **Operation SINDOOR** was not just retaliation—it was a **redefinition** of India's strategic clarity.
- Showed **zero tolerance**, yet **measured restraint**.
- Combined military, diplomatic, economic, digital, and informational tools.
- **Sent an unambiguous message:**
  - ♦ "India will hit back – swiftly, surgically, and with complete moral clarity."
- The operation established **a new deterrence doctrine**, aligning India's internal unity with global leadership.

TOPIC 2: RISE OF ATMA NIRBHAR INNOVATION IN NATIONAL SECURITY

I. Context and Background: Operation SINDOOR as a Turning Point

- **Nature of Threat:**
  - ♦ A **new pattern of asymmetric warfare** is emerging, where **terrorists now target civilians** along with the military.
  - ➢ The **Pahalgam attack in April 2025**, which killed 26 people, marked a shift from cross-border attacks to **communal destabilization** tactics.
- **India's Strategic Response:**
  - ➢ Operation SINDOOR was a **precise and calculated retaliation** without crossing the **LoC or international borders**.
  - ➢ Emphasis was placed not just on **tactical superiority**, but also on **self-reliant technological warfare capabilities**.
- **Significance of the Operation:**
  - ➢ A **landmark in indigenous defence capabilities**, integrating **advanced tech systems** like drones, air defence networks, and electronic warfare.

II. Air Defence Capabilities: First Layer of Protection

- **Attack and Defence (May 7–8, 2025):**
  - ♦ Pakistan launched drones and missiles at **key Indian military locations**: **Awantipora, Jammu, Srinagar, Amritsar, Chandigarh, Phalodi, Bhuj**, and more.
  - ♦ These attacks were **neutralised by India's Integrated Counter-UAS Grid and Air Defence systems**.
- **Air Defence Mechanisms:**
  - ➢ Involved use of **radars, control centres, artillery**, and **missile systems** – both airborne and ground-based.
  - ➢ Indian forces retaliated by **neutralising Pakistani Air Defence systems**, including one in **Lahore**.

III. Performance of Air Defence Systems: Indigenous + Legacy Mix

- **Systems in Action:**
  - ➢ **Battle-proven weapons:** Pechora, OSA-AK, and LLAD guns.
  - ➢ **Indigenous highlight:** Akash Missile System:
    - ♦ Short Range Surface-to-Air Missile (SAM).
    - ♦ Engages **multiple targets** in **autonomous/group mode**.
    - ♦ Equipped with **Electronic Counter-CounterMeasures (ECCM)**.
    - ♦ Fully **mobile weapon platform**.

- **Synergized Operations:**
  - **Army, Navy, and primarily Air Force** integrated systems created a **multi-domain, impenetrable defence shield**.
  - Supported by **IACCS (Integrated Air Command and Control System)** for net-centric warfare.

IV. Offensive Precision: Surgical, Calibrated, and Indigenous

- **Targeted Strikes:**
  - **Hit Pakistani air bases:** Noor Khan and Rahim Yar Khan.
  - Used **loitering munitions ('kamikaze drones')** to destroy high-value assets.
- **Effectiveness of Offensive Measures:**
  - No loss of Indian assets.
  - Operation was completed in **just 23 minutes**.
  - **Bypassed Chinese-origin air defence systems** in Pakistan using advanced **jamming and surveillance** systems.

V. Evidence of Neutralised Enemy Technology

- **Technologies Recovered:**
  - **Chinese-origin PL-15 missiles**
  - **Turkish-origin UAVs (Yiha/YEEHAW)**
  - **Long-range rockets, quadcopters, commercial drones**
- **Implication:**
  - India successfully countered **foreign-origin advanced weaponry** through **homegrown systems**.

VI. Multi-Layered Defence: Coordination and Preparedness

- **Anticipated Retaliation:**
  - India expected Pakistan's reaction and activated **layered defence systems** across the border.
- **Defensive Configuration:**
  - **A mix of:**
    - **Counter Unmanned Aerial Systems (CUAS)**
    - **Shoulder-fired weapons**
    - **Legacy and modern Air Defence Systems**
- **Outcome:**
  - Pakistan's attempts to strike **logistic installations and airfields on May 9-10** failed.
  - **No significant civilian/military infrastructure damage** occurred in India.
- **Government's Role:**
  - These systems were developed over **a decade of sustained investment** in defence indigenisation.

VII. ISRO's Strategic Role in National Security

- **Satellite Surveillance:**
  - ISRO operates at least **10 satellites for 24x7 monitoring** of national security zones.
- **Geospatial Monitoring:**
  - Coverage of **7,000 km coastal areas** and the **entire northern region**.
  - **Satellites and drones** are now **essential to national defence and surveillance**.

VIII. Rise of India's Indigenous Drone Industry

- **Drone Federation of India (DFI):**
  - Represents over **550 drone firms and 5,500 pilots**.
  - Aims to make **India a global drone hub by 2030**.
- **Market Size:**
  - The Indian drone market is projected to reach **$11 billion by 2030**, comprising **12.2% of the global market**.
- **Government Incentives:**
  - **PLI scheme launched in Sept 2021** for drones and components.
  - Budget of **₹120 crore**, covering **FY 2021–22 to FY 2023–24**.
- **Future Direction:**
  - Focus on **AI-driven autonomous drones**.
  - Integration of **AI-based decision-making into drone warfare**.

IX. India's Defence Manufacturing Revolution

- **Export and Production Growth:**
  - Defence exports in FY 2024–25 reached ₹24,000 crore.
  - **Target:** ₹50,000 crore by 2029.
  - **Indigenous production in FY 2023–24:** ₹1.27 lakh crore.
- **'Make in India' Success Stories:**
  - **Platforms developed:**
    - **Artillery:** Dhanush, ATAGS
    - **Armour:** Arjun MBT
    - **Aircraft & UAVs:** LCA Tejas, ALH, LUH
    - **Missile Systems:** Akash

- ♦ **Naval Vessels:** Destroyers, Submarines, IACs, OPVs

- **Government Backing:**
  - ➢ iDEX (Innovations for Defence Excellence)
  - ➢ SRIJAN initiative (Indigenisation)
  - ➢ Defence Industrial Corridors (Uttar Pradesh & Tamil Nadu)
  - ➢ Major procurements like **LCH Prachand** and **ATAGS**.
- **Vision 2047:**
  - ➢ **Goal:** World's largest defence exporter by 2047.
  - ➢ **Intermediate target:** ₹3 lakh crore production and ₹50,000 crore exports by 2029.

Conclusion: From Tactical Strike to Strategic Transformation

- **Operation SINDOOR as a Milestone:**
  - ➢ Not just a **military success**, but a **validation of India's defence innovation and Atma Nirbhar Bharat policies**.
- **Technology at Core of National Security:**
  - ➢ Indigenous systems in **air defence, drones, counter-UAS**, and **net-centric operations** played a **decisive role**.
- **Fusion of Sectors:**
  - ➢ Collaboration between **private innovation, public execution**, and **military leadership** formed the backbone of this operation.
- **India's Future-Ready Posture:**
  - ➢ Operation SINDOOR demonstrates that **India is prepared** for modern warfare.
  - ➢ Equipped with **homegrown technology**, **political will**, and **a vision for global leadership in defence**.

TOPIC 3: SYNERGY OF INDIA'S ARMED FORCES – TOWARDS JOINTNESS IN MULTI-DOMAIN WARFARE

I. Introduction: Evolving Security Paradigm

- **Context of Modern Warfare**
  - ➢ Warfare is no longer limited to land battles; it is now multi-domain—encompassing land, air, sea, space, and cyberspace.
  - ➢ The threats evolve faster than geographical shifts, requiring faster coordination among military forces.
- **India's Response to Hybrid Threats**
  - ➢ India has moved from single-force response to integrated, tri-service operations.
  - ➢ **Operation SINDOOR** exemplifies this shift —a strategic military response post-Pahalgam terror attack **(May 7, 2025)**.

II. Operation SINDOOR: Case Study in Joint Military Precision

- **Triggering Event: Pahalgam Terror Attack**
  - ➢ Terrorist attack killed 26 civilians—clearly aimed at communal polarisation.
  - ➢ **India's retaliatory action:** Operation SINDOOR launched to dismantle terror infrastructure across LoC and inside Pakistan.
- **Intelligence and Planning**
  - ➢ Based on multi-agency intel confirming 9 terror camps.
  - ➢ Operations planned for **minimal collateral damage**, stressing operational ethics and civilian safety.
- **Enemy Retaliation and India's Defence**
  - ➢ Pakistan responded with drone and UCAV attacks on Indian airbases and logistics points.
  - ➢ India successfully neutralised these using a **layered air defence grid** supported by real-time monitoring systems.

III. Tri-Services Role in Operation SINDOOR

- **Indian Air Force (IAF)**
  - ➢ Executed precision strikes on targets like **Nur Khan and Rahim Yar Khan Air Bases**.
  - ➢ **Deployed platforms like:**
    - ♦ Akash Missile System
    - ♦ Pechora and OSA-AK Systems
  - ➢ Used **Integrated Air Command and Control System (IACCS)** for seamless net-centric warfare.
- **Indian Army**
  - ➢ Acted in both defensive and offensive roles.
  - ➢ **Air Defence Units deployed:**
    - ♦ Shoulder-fired MANPADS
    - ♦ LLAD guns
    - ♦ SAMs
  - ➢ Successfully thwarted Pakistani drone waves and protected military-civil infrastructure.

- **Indian Navy**
  - Operated through **Carrier Battle Group (CBG)** with **MiG-29K** jets and airborne surveillance.
  - Maintained air defence shields, especially along the **Makran coast**.
  - Asserted maritime dominance and established **uncontested sea control**.
- **Border Security Force (BSF)**
  - Foiled infiltration along **Samba border sector**.
  - Neutralised infiltrators and recovered arms, reaffirming border vigilance.

IV. Role of Chief of Defence Staff (CDS)

- **Institutional Role**
  - Created on **24 December 2019** to unify command across Army, Navy, Air Force, and Territorial Army.
  - Acts as **Principal Military Adviser** to the Defence Minister.
- **Key Responsibilities**
  - Tri-service coordination in procurement, training, staffing.
  - Leads cyber and space commands.
  - Advises Nuclear Command Authority.
  - Drives reforms to boost **jointness**, combat readiness, and efficiency.

V. Institutional and Legislative Reforms for Synergy

- **Integrated Theatre Commands (ITCs)**
  - Aimed at restructuring military organizations for **geographic/function-based synergy**.
  - Prepares for multi-domain warfare (including cyber and space).
  - Separates **operational command** from **administrative RTS (Raise, Train, Sustain)** functions.
- **Department of Military Affairs (DMA)**
  - Created in **2020** under **CDS.**
  - Oversees joint procurement, training, restructuring of commands.
  - Streamlines military works and ensures joint planning.
- **Inter-Services Organisations (Command, Control & Discipline) Act, 2023**
  - **Legal framework for:**
    - Unified command and discipline across services.
    - Faster tri-service decision-making.
    - Preservation of individual service identity.
    - Promotes operational cohesion and legal readiness for integrated commands.
- **Joint Logistics Nodes (JLNs)**
  - Operational at **Mumbai, Guwahati, and Port Blair** since **2021**.
  - **Provide integrated logistics for all three services:** fuel, ammo, stores, clothing, spares.
  - **Benefits:**
    - Manpower savings
    - Cost efficiency
    - Enhanced operational speed

VI. Joint Training, Seminars, and Exercises

- **Joint Training Courses**
  - **Tri-Services Future Warfare Course**
    - Rank-agnostic course on new warfare domains (AI, cyber, multi-domain).
    - Held in New Delhi (2024 & 2025 editions).
  - **Defence Services Technical Staff Course (DSTSC)**
    - First conducted jointly in **2024** at **MILIT, Pune**.
    - Covered tech, geo-strategy, defence R&D, and live drills.
- **Seminars**
  - **Parivartan Chintan Conference (April 2024)**
    - Brainstorming for reforms and future joint force structure.
  - **Seminar on Air-Naval Synergy in IOR (Feb 2025)**
    - Focused on joint maritime-air operations and enhanced combat capability.
- **Joint Military Exercises**
  - **Exercise Prachand Prahar (March 2025)**
    - Multi-domain tri-service drill in high-altitude terrain of Arunachal Pradesh.
    - Validated integrated surveillance and firepower.
  - **Exercise Desert Hunt (Feb 2025)**
    - Special Forces drill by Para SF, MARCOS, and GARUD units.
    - Focused on interoperability and rapid response.

VII. Technology Integration and Network-Centric Warfare

- **Defence Communication Network (DCN)**
  - Indigenous secure platform for converged voice-data-video across services.
  - Major step toward self-reliance and cyber-secure military communications.
- **Integrated Air Command and Control System (IACCS)**
  - Real-time, AI-assisted threat tracking system.
  - Played a vital role in neutralising Pakistan's retaliatory UAV strikes during Operation SINDOOR.

VIII. 2025 – Declared as the 'Year of Defence Reforms'

- **Vision by Ministry of Defence**
  - Unanimous resolution led by Defence Minister Rajnath Singh.
  - **2025 dedicated to reforms for:**
    - Technology-led force transformation
    - Establishment of ITCs
    - Strengthened joint training & cooperation
    - Integrated procurement and defence planning
- **Outcomes Anticipated**
  - Technologically capable, combat-ready joint force.
  - Seamless cooperation across domains: land, air, sea, space, cyber.

Conclusion: India's Joint War Doctrine – Future Ready

- **Strategic Maturity & Synergy**
  - India's military operations are no longer fragmented.
  - The Armed Forces now operate as a **cohesive national force**.
- **Lessons from Operation SINDOOR**
  - Demonstrated **precision**, **preparedness**, and **inter-service unity**.
  - Message conveyed: India will respond **decisively** to aggression.
- **Future of Warfare**
  - Multi-domain integration is not optional—it's inevitable.
  - India's path toward **jointness**, **digitisation**, and **strategic autonomy** is clear and irreversible.

TOPIC 4: RURAL PROSPERITY THROUGH WAREHOUSING

1. India's Rural Backbone and Agricultural Landscape

- **Rural Demographics**
  - India has **6.65 lakh villages** governed by **2.68 lakh Gram Panchayats** and rural local bodies.
  - As per **Census 2011**, **68.85%** of India's population lives in rural areas.
  - **NITI Aayog** projects that this rural population will remain **above 50% even by 2045**.
- **Agricultural Dependency**
  - **~58.4% of rural workers** are employed in agriculture.
  - Although there has been a **decline in agriculture's share in rural employment since 1991**, agriculture remains central to rural livelihoods.
- **National Agricultural Output Trends**
- India's **foodgrain production target for 2025–26** is **354.64 MMT**.
- **2023–24 (Final Estimates by Ministry of Agriculture & Farmers Welfare)**:
  - **Total Foodgrains:** 3322.98 LMT
  - **Total Oilseeds:** 396.69 LMT
  - **Sugarcane:** 4531.58 LMT
  - **Cotton:** 325.22 lakh bales (170 kg each)
  - **Jute & Mesta:** 96.92 lakh bales (180 kg each)

2. The Rural Income Dilemma: Post-Harvest Issues

- **Distress Sales**
  - Despite record production, farmers are **forced to sell produce at low prices**.
  - **This is due to post-harvest issues such as:**
    - Inadequate infrastructure,
    - Poor marketing avenues,
    - Lack of liquidity and credit options.
- **Consequence**
  - Leads to **non-remunerative prices** and **low income** for farmers — the economic majority in rural India.

3. Warehousing: An Enabler of Rural Prosperity

- **Multifunctional Role of Warehouses**
  - **Not just storage:** Offers scientific storage, price discovery, market linkage, and financial services.
  - **Warehouses registered with WDRA can issue e-NWRs:**
    - These receipts can be traded on **e-NAM**.
    - They enable farmers to **secure credit**.
- **Credit Enablement**
  - **Post-harvest credit** bridges liquidity needs and avoids distress sale.
  - **FY 2023–24 Credit Snapshot**:
    - **Total agricultural credit:** ₹25 lakh crores
    - **Short-term credit:** ₹14.8 lakh crores
    - **Post-harvest loans:** Only ₹0.35 lakh crores (~1.4% of total agri-credit).
- **Price Realization & Deferred Sales**
  - **Agmarknet data** shows higher prices if commodities like **paddy, chilli, jeera, turmeric** are sold after a few months.
  - **Storage empowers farmers** to defer sale and fetch better returns.

4. Research Evidence: Warehousing's Impact on Price Stability

- **Findings from IIM Bangalore Study**
  - **Wheat:** 1% rise in warehouse capacity ~2% decrease in price variability.
  - **Masur:** 1% rise ~2.7% decrease in variability.
  - **Conclusion:** Warehousing reduces price volatility and **narrows wholesale-retail price gaps**, benefiting both consumers and producers.
- **Inflation and Household Spending**
  - **Food & beverages** contribute **54.18% weight** to India's CPI (Consumer Price Index).
  - A **steady supply of staples (like onion, tomato)**—enabled by warehousing—can:
    - Prevent inflation spikes
    - **Reduce household expenditure**, increasing disposable income in rural areas.

5. Core Challenges in Agricultural Warehousing

- **Storage Capacity Deficit**
  - **Installed warehouse capacity (March 2024):** 239.70 MMT
  - **Foodgrain production:** 328.85 MMT
  - Indicates a **capacity shortfall** which threatens agricultural sustainability.
- **Stagnation in Post-Harvest Credit**
  - **Kisan Credit Cards** have grown, but **post-harvest finance hasn't**.
  - **Banks hesitate** to lend against warehoused goods due to:
    - Stock misappropriation
    - Loan recovery issues
    - Reduced interest from public sector banks.
- **Skewed Distribution**
  - **Southern states and Gangetic belt** are **underserved in warehousing**.
  - The Gangetic region (rich in cereals, pulses, oilseeds) lacks adequate storage—impacting value chains.
- **Small & Fragmented Warehouses**
  - **Of 51,307 warehouses:**
    - **Over 35,000 (68%)** have **<500 tonnes** capacity.
  - Smaller units lack **professional management**, leading to **quality loss** and **inefficiency**.
- **Poor Farmer Awareness**
  - **As per MANAGE study, farmers lack:**
    - Understanding of **pledge finance**
    - Insights into **price trends**
    - Awareness of **policy frameworks** around storage.
  - Needs to be addressed through **agri-extension services**.
- **Regulatory Gaps**
  - **Warehousing (Development & Regulation) Act, 2007:**
    - Mandates registration only for warehouses issuing **e-NWRs**.
    - **Non-WDRA registered warehouses** can still operate, issuing **non-negotiable receipts**, undermining trust.

6. Government Schemes and Interventions

- **Warehousing Infrastructure Support**
  - **Agri Marketing Infrastructure** scheme.
  - **PEG (Private Entrepreneurs Guarantee)** scheme via PPP.
  - **Construction of silos** in PPP mode.
  - Warehousing Infrastructure Fund to boost capacity.

- **Agriculture Infrastructure Fund (AIF)**
  - ₹**1 lakh crore corpus** for post-harvest agri-infrastructure.
  - Creation of **godowns at PACS** level – closest to the farmer.
- **World's Largest Cooperative Grain Storage Plan**
  - Implemented at **PACS level**, aimed at **farm-gate storage** development.
- **Credit Guarantee Scheme for e-NWR (CGS-NPF)**
  - ₹**1000 crore outlay**.
  - Provides **loan guarantees** for banks lending against **e-NWRs**.
  - **Especially focused on:**
    - Small and marginal farmers
    - Higher guarantee coverage
    - Lower fee structure
- **e-Kisan Upaj Nidhi Portal**
  - **Reduces loan processing time** for farmers.
  - **Integrated with:**
    - Credit bureaus
    - Banking platforms
  - **Enables:**
  - In-principle loan approvals
  - Bank selection freedom for farmers
- **Interest Subvention Scheme**
  - **1.5% interest subvention** on loans issued against e-NWRs.
  - Applicable to **small & marginal farmers with KCC accounts**.

7. Strategic Vision: A Roadmap to Rural Prosperity

- **Infrastructure and Credit Synergy**
  - Building **commensurate warehousing infrastructure** across rural India is essential.
  - Ensuring **credit linkage** to stored produce is equally important.
- **Regulatory Measures**
  - **Bring all warehouses under WDRA regulation to:**
    - Build **fiduciary trust**
    - Ensure **accountability**
    - Improve **lender confidence**
- **Policy Recommendations**
  - Formulate a **multi-pronged national warehousing policy** with focus on:
    - Awareness generation
    - Extension education
    - Private participation
    - Regulatory standardisation
    - Digital transparency

Conclusion

Warehousing, when seen as a strategic post-harvest tool rather than a passive storage function, holds immense potential to transform India's rural economy. It connects production with prosperity, reduces market distress, enables better price realization, and stabilizes inflation. However, success hinges on capacity expansion, regulatory cohesion, credit linkage, and most importantly, farmer awareness. If these elements are aligned through sustained policy action and institutional coordination, warehousing could become the bedrock of rural prosperity in India.

TOPIC 5: SAFE FOOD FOR A HEALTHY INDIA

I. Introduction

- **Core Concern:** Food safety in Indian agriculture is a vital but often neglected issue.
  - Contamination risks are present at every stage—from farm to fork.
  - These include pesticide residues, post-harvest fungal growth, bacterial contamination, and adulteration.
- **Major Problems:**
  - Heavy pesticide usage (India ranks 4th globally) causes residue accumulation.
  - Poor post-harvest infrastructure leads to **aflatoxins** and **microbial spoilage.**
  - Rampant adulteration in milk, spices, and oils.
  - Weak enforcement of the **Food Safety and Standards Act (FSSAI).**
- **Implications:**
  - Health hazards like cancer, diarrhea, and liver damage.
  - Export rejections due to global safety non-compliance.
  - Loss of farmer income and consumer trust.

II. Understanding Food Safety

- **Definition:**
  - Scientific discipline and regulatory framework ensuring safe handling, storage, processing, and distribution of food.
- **Types of Hazards:**
  - **Biological Hazards:** Bacteria (E. coli, Salmonella), viruses (Hepatitis A), fungi (aflatoxins), and parasites.
  - **Chemical Hazards:** Pesticide residues, heavy metals (lead, arsenic), artificial additives.
  - **Physical Hazards:** Foreign objects like metal shards, glass pieces, or plastic fragments.
- **Need for a Holistic Approach:**
  - Organic farming to reduce chemical usage.
  - Investment in infrastructure (cold chains, testing labs).
  - Blockchain-based traceability systems.
  - Strengthening FSSAI's rural monitoring.
  - Farmer education and consumer awareness campaigns.

III. Importance of Food Safety

- **Public Health Protection:**
  - **WHO:** 600 million global illnesses and 420,000 deaths per year from unsafe food.
  - **In India:** Diarrhea, cholera, and pesticide poisoning are widespread, especially among children.
- **Economic Impact:**
  - Increases healthcare costs, reduces productivity.
  - Rejections of Indian exports like spices, seafood, and basmati rice due to pesticide residues cause economic losses.
- **Farmer Livelihoods:**
  - Unsafe produce gets rejected, resulting in income loss.
  - Safe practices help access premium markets.
- **Consumer Trust:**
  - Scandals around adulterated milk and toxic fruits have lowered public trust.
  - Reliable food safety fosters brand credibility and loyalty.

IV. Critical Issues in Food Safety

A. Excessive Pesticide Use

- **India's Ranking:**
  - One of the top global consumers of pesticides.
- **Health Hazards:**
  - Linked to cancer, neurological disorders.
  - Banned pesticides like **Monocrotophos** are still used.
- **Solutions:**
  - Farmer education on safe application.
  - Organic farming promotion.
  - Stricter regulation enforcement.

B. Poor Post-Harvest Handling

- **Statistics:**
  - Around **30%** of produce is lost due to inadequate storage.
- **Problems:**
  - Grains stored in open areas develop aflatoxins.
  - Lack of cold storage degrades food quality.
- **Impact:**
  - Threat to food availability and public health.
- **Solutions:**
  - Investment in storage solutions.
  - Modernization of supply chains.
  - Training small-scale farmers.

C. Rampant Food Adulteration

- **Extent:**
  - 68% of milk samples are non-compliant with standards (FSSAI, 2018).
- **Common Adulterants:**
  - Detergents, urea (in milk).
  - **Metanil yellow** (in turmeric), **argemone oil** (in mustard oil).
- **Health Impact:**
  - Cancer, organ damage.
- **Remedies:**
  - Strengthen food testing labs.
  - Harsher penalties.
  - Widespread consumer education.

D. Poor Hygiene and Awareness

- **Street Vendors and Informal Markets:**
  - Unhygienic food preparation.

- **Consumer Vulnerability:**
  - Limited awareness about safety standards.
- **Solutions:**
  - Public campaigns.
  - Training programmes for food handlers.
  - Hygiene enforcement.

V. Agriculture and Public Health Linkages

- **Foodborne Diseases:**
  - Caused by contaminated food (diarrhea, hepatitis, cancer).
  - Aflatoxins cause liver damage.
- **Economic Losses:**
  - Export bans impact national revenue.
  - Farmers bear financial brunt.
- **Chronic Health Effects:**
  - Antibiotic resistance.
  - Kidney failure, neurological disorders from heavy metals.

VI. Regulatory Framework for Food Safety

A. Institutional Role

- **FSSAI:**
  - Sets food safety standards.
  - Lacks enforcement in rural areas.
- **APMCs:**
  - Regulate markets but often neglect safety.
- **BIS (Bureau of Indian Standards):**
  - Standards exist, low adoption in informal sectors.

B. Existing Laws

- **Food Safety and Standards Act, 2006:**
  - Comprehensive, but poorly implemented.
- **Insecticides Act, 1968:**
  - Ineffective in curbing illegal pesticide sales.
- **Enforcement Challenges:**
  - Only **2,000** food inspectors for **1.3 billion people.**
  - Corruption, slow processes, delayed penalties.

VII. Major Challenges in Ensuring Food Safety

- **Fragmented Supply Chains:**
  - Multi-layered intermediaries increase risk.
  - No traceability in traditional mandis.
  - Long transport times without cold storage.
- **Economic Constraints of Farmers:**
  - Cannot afford safe storage or quality inputs.
  - Exploitation by middlemen.
- **Infrastructure Gaps:**
  - Only **150+** accredited food labs; **500+** needed.
  - Less than **10%** of perishables have cold storage access.
- **Export Rejections:**
  - Frequent bans by **EU** and **US.**
  - **Estimated loss:** $15–20 billion annually.

VIII. Solutions and the Way Forward

- **Farmer Education:**
  - Use of **KVKs** and **NGOs** for **GAP** training.
  - Safe pesticide use and hygiene awareness.
- **Promoting Organic Farming:**
  - **Schemes:** PKVY, Bhartiya Prakritik Krishi Paddhati.
  - Subsidies and certification assistance.
- **Strengthening Infrastructure:**
  - Expand cold chains, labs, and APMC upgrades.
  - Ensure quality control checkpoints.
- **Technology for Traceability:**
  - Blockchain for farm-to-fork tracking.
  - AI-based advisory apps.
- **Policy Reforms:**
  - Expand **FSSAI** reach.
  - Harsher penalties and faster legal action.
- **Consumer Awareness:**
  - Expand '**Eat Right India**'.
  - Mandatory food safety labelling.

IX. Conclusion

- **Food safety is essential for national well-being:**
  - Ensures public health, economic prosperity, and sustainable farming.
- **Integrated Approach Needed:**
  - Combine policy reform, infrastructure investment, farmer training, technology, and public awareness.
- **Future Outlook:**
  - A robust food safety ecosystem can build trust, empower farmers, boost exports, and create a healthy India.

TOPIC 6: OPPORTUNITIES AND CHALLENGES IN INDIA'S FOOD EXPORT

Introduction

- Agriculture is India's largest source of livelihood and the country is among the world's top producers of food and agricultural commodities.
- India produces a wide variety of crops across **two main seasons – Kharif** and **Rabi**.
- **Exporting food products:**
  - Enhances **foreign exchange earnings**.
  - Narrows the **trade deficit** and strengthens the **Balance of Payments**.
  - Generates **employment** and boosts **rural development**.
  - Helps uplift **farmers' income**, reduces **poverty**, and supports **inclusive growth**.

Food and Agricultural Export Scenario in India

- India ranks among the **top 10 global exporters** of agricultural products.
- Yet, India's **global market share is only 2.4%**, indicating massive untapped potential.
- The **Agriculture Export Policy (AEP) 2018** aimed for **$60 billion** in exports by 2022.
- However, in **2023-24**, India exported only **$48.8 billion** (a decline from **$53.2 billion** in 2022-23).
- This **8% decline** signifies a pressing need for policy overhaul and stronger export promotion.

Government Initiatives to Promote Agricultural Exports

- **Agriculture Export Policy (AEP) 2018**
  - **Objectives:**
    - Diversify the export basket and destinations.
    - Focus on high-value, organic, traditional, and non-traditional products.
  - **Vision:**
    - Enhance **farmers' incomes**.
    - Integrate farmers into **global value chains**.
    - Shift from **staples (rice, sugar)** to **high-margin, branded exports**.
- **Supporting Schemes:**
  - **Financial Assistance Schemes (FAS):**
    - Funds for infrastructure, quality improvement, and market development.
  - **Trade Infrastructure for Export Scheme (TIES):**
    - Provides grants for developing export infrastructure.
  - **Market Access Initiative (MAI):**
    - Supports market exploration and promotion activities.
  - **APEDA (Agricultural and Processed Food Products Export Development Authority):**
    - Facilitates export promotion, certification, market intelligence.
    - Special focus on promoting **millets** and other niche products.

Framework of the Agriculture Export Policy (AEP)

- **Strategic Recommendations:**
  - Stable trade policy avoiding abrupt bans.
  - **Infrastructure development:**
    - Cold chains, logistics, post-harvest management.
  - Align agri-policy with export strategy.
  - Promote **state-level involvement** through monitoring committees.
- **Operational Recommendations:**
  - Create **agriculture export clusters**.
  - Brand Indian agricultural exports (e.g., **Basmati rice**, **Indian spices**).
  - Focus on **value addition** and **food processing**.
  - Encourage **private investment**. Promote **international certifications** for global compliance.
  - Support **R&D** to improve quality and reduce costs.

Key Challenges in India's Food Export Sector

- **Unpredictable Export Policy:**
  - Frequent bans (e.g., rice, sugar, wheat) create uncertainty.

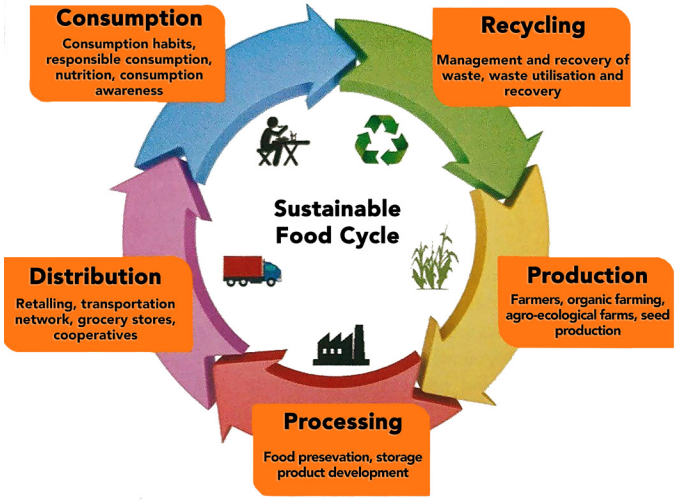
- **Export Concentration:**
  - ➢ Overdependence on staples increases vulnerability.
- **Inadequate Infrastructure:**
  - ➢ Poor cold chains, transportation, high post-harvest losses.
- **Non-Compliance with Global Standards:**
  - ➢ Issues with hygiene, pests, and safety norms.
- **Global Competition:**
  - ➢ **Brazil** (sugar), **Vietnam** (rice), **Thailand** (processed food) offer better prices/ infrastructure.

Opportunities and Strategies for 2025 and Beyond

- **Product and Market Diversification:**
  - ➢ Focus on **high-value** and **niche products**.
  - ➢ Rise in demand for **chemical-free, organic foods** globally.
  - ➢ Export of **value-added products**: RTS meals, spices, concentrates.
  - ➢ **Pulses and oilseeds:**
    - ♦ Water-efficient, sustainable, globally demanded.
- **Market-Specific Strategies:**
  - ➢ **Middle East & Africa:** Demand for staples (rice, wheat) growing due to population rise.
  - ➢ **European Union:** High demand for organic and specialty products.
  - ➢ **East Asia:** Demand for marine, spices, and processed foods.
- **Technological Advancements:**
  - ➢ **Blockchain:** Enhances traceability and food safety.
  - ➢ **Precision Farming:** Optimizes input use and yield.
  - ➢ **Digital Platforms:** Simplify trade, track logistics, and manage documents.
- **Branding and Positioning**
  - ➢ Market Indian food exports as **premium** products globally.
  - ➢ Invest in **certifications**, **branding**, and **quality assurance**.

Advantages of Processed Food Export Over Staple Exports

- **Longer Shelf Life:** Minimizes spoilage, stabilizes prices.
- **Higher Value Addition:** Better profit margins, by-product marketing opportunities.
- **Global Acceptance:** Processed foods are culturally adaptable, have broader market appeal.
- **Brand Building:** Creates brand loyalty and demand.
- **MSME Participation:** Boosts employment and investment in rural/semi-urban areas.
- **Innovation Opportunities:** Packaging, product development, and marketing innovations thrive in processed food.



Status of Processed Food Exports from India

- ➢ Processed food exports showed **13% growth in 2023-24**, totaling **USD 7.7 billion**.
- ➢ **Key products:**
  - ♦ Mango pulp, processed vegetables, cereal preparations.
- ➢ **Export markets:**
  - ♦ Middle East, Far East, USA, UK.
- ➢ **Geographical advantage:**
  - ♦ India is strategically located to serve Europe, the Middle East, and Asia.
- **Make in India & Food Processing**
  - ➢ **Promotes:**
    - ♦ Investment, innovation, skill development.
  - ➢ **Enhances:**
    - ♦ Manufacturing infrastructure and GDP contribution.

Circular Economy Practices in India's Food Exports

- **Need for Circular Economy (CE)**
  - Food wastage at every supply chain stage causes:
    - Economic loss, environmental damage, and poverty.
  - The **UN Sustainable Development Goals (SDGs)** aim to halve food waste by 2030.
  - CE can boost India's sustainability edge in exports.
- **Key Strategies of CE in Food Export**
  - **Sustainable Production:**
    - Organic, regenerative agriculture aligns with global trends.
  - **By-product Utilization:**
    - Adds revenue streams, reduces waste.
  - **Closed-Loop Systems:**
    - Reuses resources, minimizes environmental impact.
  - **Innovative Packaging:**
    - Biodegradable and compostable packaging reduces plastic waste.
  - **Efficient Supply Chain:**
    - Reduces food loss, transport costs, and energy usage.
  - **Stakeholder Collaboration:**
    - Involves farmers, processors, and retailers for shared sustainability goals.
- **Benefits of CE Integration**
  - Lowers production costs and enhances **competitiveness**.
  - Promotes **eco-friendly brand image**.
  - Opens access to **green-conscious global markets**.
  - Reduces **carbon footprint**, creating a sustainable and future-ready sector.
- **Policy and Institutional Support Required**
  - **Government needs to:**
    - Provide financial incentives and policy framework.
    - Raise stakeholder awareness.
    - Support training and capacity-building.

Conclusion

India's food export potential remains massive but underutilized due to policy inconsistencies, infrastructure gaps, and lack of diversification. With the right mix of policy support, technological intervention, and market expansion strategies, India can significantly increase its agricultural and processed food exports. Integration of **circular economy practices** and tapping into high-value, sustainable, and branded food segments can elevate India's global food export profile while ensuring environmental and economic resilience.

TOPIC 7: INFRASTRUCTURE DEVELOPMENT AND URBANISATION

Introduction:

- **India's Economic Aspiration:** Set to become the **third-largest global economy by 2027**, India's rise will be underpinned by **robust infrastructure development** and **sustainable urbanisation**.
- **PRAGATI platform:** Acts as a **coordinated governance model** to accelerate infrastructure growth and address the **implementation gap** in mega-projects.
- Urban development is becoming a **strategic priority**, necessitating **new paradigms** in planning, sustainability, and digitisation.

Landmark Infrastructure Projects Driving India's Growth

- **New-age Infrastructure Projects:**
  - **New Pamban Railway Bridge:** India's first vertical lift bridge inaugurated at Rameshwaram on 6 April 2025.

  - **Z Morh Tunnel (J&K):** Opened on 13 January 2025, enhancing connectivity to Sonamarg.
  - **Other iconic projects:**
    - **Chenab Railway Bridge** (J&K) – world's highest railway bridge.

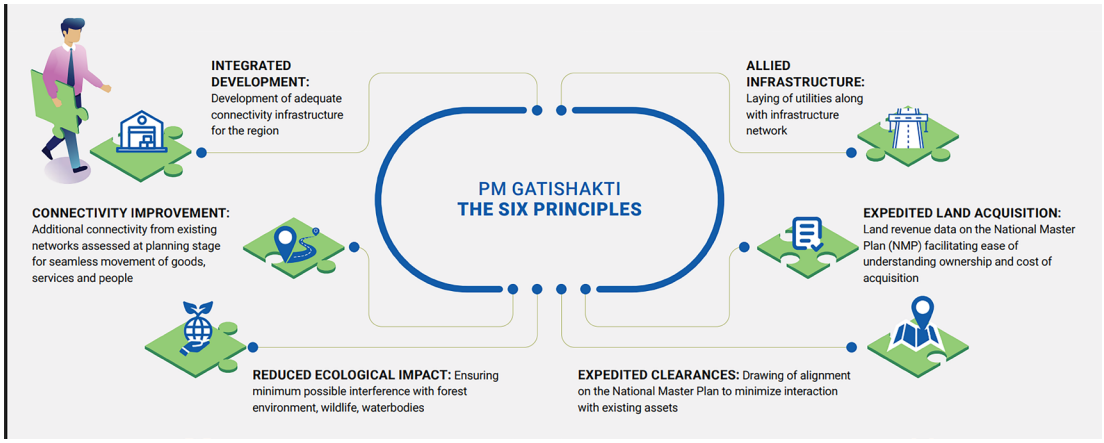
- ♦ **Bogibeel Bridge** (Assam) – India's **longest rail-road bridge.**
- ♦ **Mumbai Trans Harbour Link (Atal Setu)** – a **21.5 km** sea bridge connecting Mumbai and Navi Mumbai.

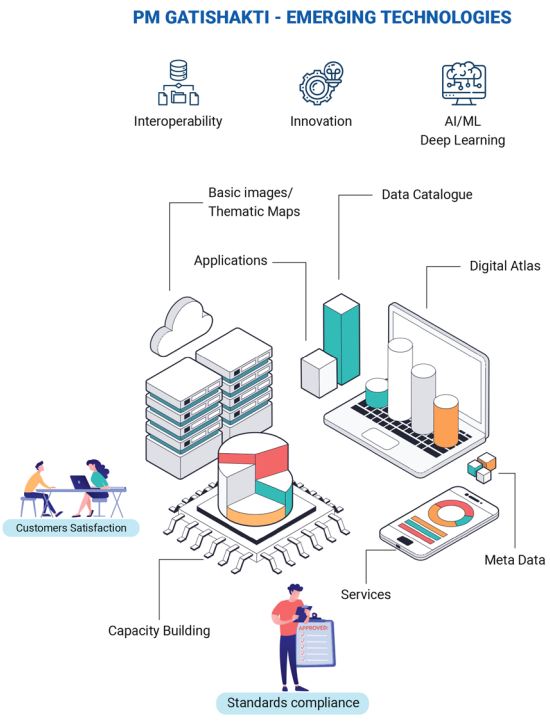
- **Digital Enablers for Timely Execution:**
  - ➢ **Technologies used:** AI, ML, Deep Learning, Big Data, GIS, GPS, Blockchain, DeepSeek.
  - ➢ Enables **real-time decision-making**, reduces delays and enhances efficiency in project delivery.

PRAGATI Platform: Pro-Active Governance Model

- ➢ **Launched in 2015** by the Prime Minister.
- ➢ **Achievements:**
  - ♦ Completion of **340+ major projects** worth **$205 billion**.
  - ♦ Promotes **accountability, transparency**, and **effective resource utilisation**.
- ➢ **Environmental Sustainability:**
  - ♦ Integrated into project planning and execution.
  - ♦ Aims to ensure **green and responsible infrastructure**.

PM Gati Shakti National Master Plan





- **Objective:**
  - ➢ Create **next-generation infrastructure** for **seamless mobility** of people, goods, and services.
- **Key Features:**
  - ➢ Breaks **siloed departmentalism**.
  - ➢ Collaborates with **ISRO and BISAG** for spatial planning.
  - ➢ Uses **geo-informatics** for precise design and **minimal ecological disruption**.
  - ➢ **Parivesh platform** streamlined environmental clearances:
    - ♦ Reduced approval time from **600 days to 70–75 days**.
- **Whole-of-Government Approach:**
  - ➢ Collaboration across **Central Ministries and States/UTs**.

- Over **1200 GIS data layers** from the Central Government and **755 from States/ UTs** integrated.

- **District-Level Implementation:**
  - Uses **drone surveys** and **on-ground surveys**.
  - Facilitates **micro-level infrastructure planning**.
- **Reduced Planning Horizon:**
  - Replaces conventional **20-year plans** with a **5-year actionable strategy** for dynamism.

Lessons for Urban Development

- **Urban Population Boom:**
  - From **500 million now** to **820 million by 2047**.
  - India needs to **double its urban infrastructure** in just 22 years.
- **Brownfield and Greenfield Development:**
  - Need to **retrofit old cities (brownfield)** and **build new ones (greenfield)** with **sustainable designs**.
  - A chance to **reimagine urban planning** for resilience and inclusivity.

Urban Sustainability Challenges

- **Environmental and Infrastructure Pressures:**
  - **Cities consume 2/3 of energy** and emit **over 60% of GHGs**.
  - **Urban Heat Island effect** makes cities 3.5 C hotter than rural areas.
- **Basic Infrastructure Deficits:**
  - Unplanned zones, slums, and informal settlements dominate urban spaces.
  - Air quality, water availability, and sanitation systems are severely stressed.
  - Transport inefficiencies – gridlocks, road accidents, lack of public transport.
- **Socio-Economic Vulnerabilities:**
  - **80% of urban workforce** in the informal **sector** face poor access to health, food, and security.
  - **Crimes, gender inequality**, and social divides further deteriorate the quality of urban life.

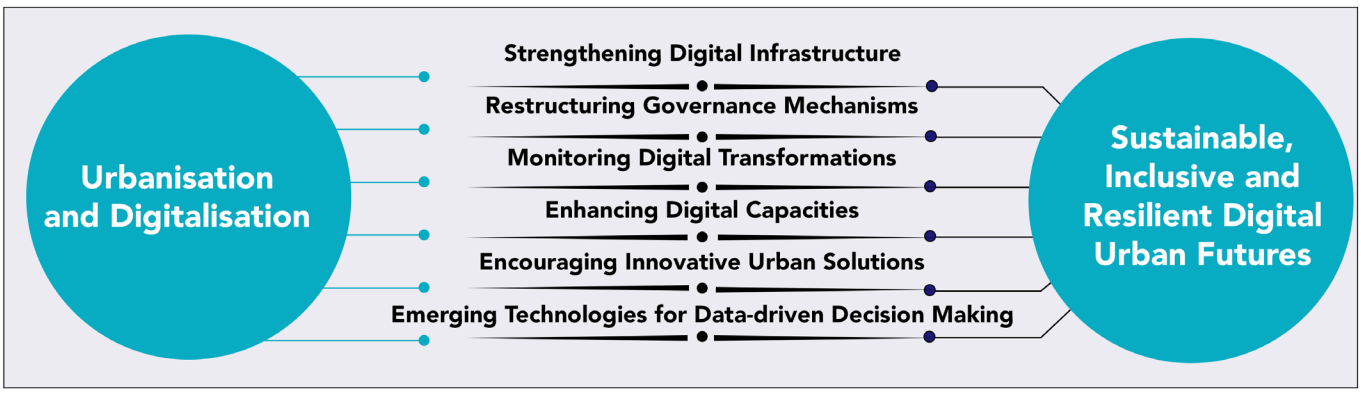
Global Urbanization Insights and Warnings

- **UN-Habitat World Cities Report 2024:**
  - **2 billion people** to face **0.5°C temperature rise by 2040**.
  - Over **4600 coastal cities are at flood risk** (those 5–10m above sea level).
  - Requires **$2.5–5.5 trillion/year** for urban climate resilience.
- **UNEP Reports:**
  - **Cities cause 70% of CO_2 emissions** (transport, buildings, energy).
  - Need **$252 billion investment** for proper waste management globally.

International and Scholarly Urban Planning Models

- **"Age of the City" by Ian Goldin and Tom Lee-Devlin (2023):**
  - Opposes **car-based urban sprawl**.
  - Advocates mass transit, bicycle infrastructure, walkability, and public space.
- **Carlos Moreno's "15-Minute City" (2024):**
  - Emphasises **localized access** to jobs, services, and amenities within 15 minutes.
  - Urban ecosystems rooted in **local biodiversity and culture**.
  - Use of **bio-morphic urbanism**, green roofs, and sustainable materials.
- **Smart Cities Mission Learning:**
  - Focus should be on **citizens, jobs, infrastructure, and sustainability**—not just technology.

Strategic Spatial Development Plan (SSDP): The New Urban Vision



- **From Master Plans to SSDPs:**
  - Replace **rigid 20-year plans** with **5-year actionable and participatory plans**.
  - Focus on four Es: **Economy, Engagement, Equality, Environment**.
- **Tools and Platforms:**
  - Leverage **PRAGATI**, **Gati Shakti**, and **Whole-of-Government Platform**.
  - Foster **data-driven planning and decision-making**.

SSDP: Interlinked Components for Urban Transformation

- **Core Urban Plans:**
  - Sustainability Plan
  - Climate Resilience Plan
  - Heat Mitigation Plan
  - Air Pollution Control Plan
  - Energy and Water Management Plans
  - Sanitation and Drainage Plans
  - Land Management and Housing Plan
  - Transport-Oriented Development (TOD), Mobility, and Node Redevelopment Plan
  - Heritage Conservation Plan
  - Health, Education, Recreation & Social Amenities Plan
  - Informal Settlement and Market Upgradation Plan
- **Operational Frameworks:**
  - Action Plan with **clear timelines**, **governance**, **legal**, and **regulatory backing**.
  - Unified planning and **building regulations**.
  - Clear **Financing and Investment Plan**.

Conclusion: A New Urban India

- India stands at the **cusp of an urban transformation**.
- **The path forward involves:**
  - **Cutting-edge technologies** for efficient governance.
  - **Sustainable, inclusive, and resilient planning**.
  - **People-centric development**, not technology-led solutions alone.
  - Replacing outdated paradigms with **agile, localised, and strategic planning frameworks**.
- With strong leadership, investment, and innovation, India can build **world-class cities** for a **climate-resilient, equitable future**.

TOPIC 8: YOGA FOR ONE EARTH ONE HEALTH – A DECADE OF INTERNATIONAL DAY OF YOGA (IDY)

Introduction and Concept of Yoga

- **Definition and Origins:**
  - Yoga is derived from the Sanskrit root 'yuj', meaning to join or unite.
  - It symbolises harmony of body and mind, action and thought, restraint and fulfilment.
- **Philosophy:**
  - Emphasizes holistic health and well-being.
  - Promotes unity between humans and nature.
  - Recognised as a preventive, promotive, and curative health science.

Recognition by the United Nations

- **UN Proclamation:**
  - On 11 December 2014, the United Nations General Assembly (UNGA) passed Resolution 69/131, declaring 21 June as International Day of Yoga (IDY).
- **Global Significance:**
  - Acknowledged the universal appeal and applicability of yoga.
  - Became a tool for global public health and lifestyle awareness.

Growth of Yoga as a Global Movement

- **Public Health Importance:**
  - Especially significant in India with Yoga's increasing integration into public health policies.
- **Impact Over a Decade:**
  - Yoga has evolved into a **worldwide wellness movement**.
  - Celebrated globally through diverse activities and outreach efforts.

Theme for 2025: Yoga for One Earth, One Health

- **PM Modi's Vision:**
  - Highlighted in his **120th Mann Ki Baat** episode.
  - Envisions Yoga as a tool for global health and planetary well-being.
- **Core Objectives:**
  - Promote **physical, mental**, and **environmental** wellness.
  - Align with **sustainability**, **climate consciousness**, and **public unity**.

10 Signature Events for IDY 2025

A set of unique, large-scale initiatives marking the **11th year** of the IDY:

(i) Yoga Sangama:

- Mass synchronized Yoga demonstration at 1,00,000 locations.
- Aims to set a world record.

(ii) Yoga Bandhan: Partnering with 10 countries to host Yoga at iconic global landmarks.

(iii) Yoga Parks: Establishment of 1,000 community Yoga parks for daily engagement.

(iv) Yoga Samavesh: Inclusive Yoga programs for Divyangjan (disabled), senior citizens, children, and marginalised groups.

(v) Yoga Prabhava: Conducting a decadal impact assessment of Yoga in public health.

(vi) Yoga Connect: Hosting a Virtual Global Yoga Summit with Yoga gurus and medical experts.

(vii) Harit Yoga: Sustainability-oriented campaign combining Yoga with tree plantation and clean-up drives.

(viii) Yoga Unplugged: Youth-centric programs to popularize Yoga among younger demographics.

(ix) Yoga Maha Kumbha: A week-long Yoga festival in 10 cities, culminating in a grand celebration led by the Prime Minister.

(x) Samyogam: A 100-day campaign integrating Yoga with modern healthcare practices.

Key Milestones: 10-Year Journey of International Day of Yoga

Year	City/Event	Highlights
2015	New Delhi (Rajpath)	35,985 participants; two Guinness World Records.
2016	Chandigarh	30,000+ joined; 150 Divyangjan participated.
2017	Lucknow	51,000 participants; Yoga as affordable health insurance.
2018	Dehradun	Focus on Yoga for Public Health; BHUVAN Yoga App launched.
2019	Ranchi	Theme: Yoga for Heart Care; use of eco-friendly accessories.
2020	Virtual IDY (COVID-19)	12.06 crore participants; My Life, My Yoga contest with entries from 130 countries.
2021	Virtual	Reached 496.1 million people globally; events at Eiffel Tower, Times Square, and Tokyo Skytree.
2022	Mysuru	15,000 participants; Guardian Ring relay; VR digital exhibition.
2023	Jabalpur & UN HQ New York	23.44 crore participants; record in Surat with 1.53 lakh participants; Ocean Ring of Yoga covered 35,000 km.
2024	Srinagar (SKICC)	7,000 participants in rain; Yoga for Space with ISRO; 25.93 lakh pledged in Uttar Pradesh; 24.53 crore global participation.

Global and Scientific Context

- **Environmental and Health Relevance:**
  - Yoga helps in lifestyle disorder management, mental wellness, immune function, and community well-being.
- **Integrated with Global Themes:**
  - Aligns with **UN Sustainable Development Goals (SDGs)**.
  - Emphasizes interconnectivity between **planetary health** and **personal health**.

Strategic Takeaways

- **Public Health Integration:**
  - Yoga as a low-cost, high-impact public health measure.
  - Complementary to **modern medicine** in managing NCDs (non-communicable diseases).
- **Cultural Diplomacy:**
  - Enhances India's **soft power** and **global cultural leadership**.
  - Acts as a unifying platform across national, cultural, and social boundaries.
- **Sustainability and Youth Outreach:**
  - Merges **traditional wisdom with contemporary needs**.
  - Youth-focused programs help in long-term behavioural change and eco-consciousness.

Conclusion

Over a decade, the **International Day of Yoga** has grown from a symbolic event to a **global mass movement**. The 2025 theme *"Yoga for One Earth One Health"* signifies a leap towards **global health solidarity**, sustainability, and mindful living. By blending Yoga with public health, sustainability, and innovation, India continues to inspire the world in redefining wellness for both **people and the planet**.

TOPIC 9: COMMUNICATION MODELS IN THE NEW MEDIA AGE

Introduction and Historical Evolution of Communication Models

- **Origin in Classical Thought**
  - The study of communication models began with **Aristotle's Rhetoric**, developed over 2300 years ago.
  - **It is a simple linear model with three basic elements:**
    - Speaker
    - Speech
    - Listener
  - Aristotle emphasized the **persuasive** aspect of speech, advising speakers to tailor messages for different audiences to achieve specific effects.
- **20th Century Developments**
  - Significant efforts were made to build communication models that explained modern media dynamics:
    - **Harold D. Lasswell's Model (1948)** – Introduced a structured sequence: ***Who says what, in which channel, to whom, with what effect?***
    - **Shannon and Weaver's Model (1949)** – Also called the *mathematical model*, developed for **telephonic communication**, introduced '**noise**' but lacked feedback.
    - **David Berlo's SMCR Model (1960)** – Focused on the sender and receiver's-**shared skills and understanding** but remained linear and lacked feedback.
- **Denis McQuail's Criticism**
  - McQuail criticized these traditional models for **lacking an essential element – feedback**.
  - Without feedback, these models are no longer valid in the present **digital, online, new media** environment.
  - Today, the **audience is no longer passive**; they are **active content producers**, reshaping the communication process entirely.

Understanding New Media Communication

- **Definition and Attributes**
- According to **Logan (2010)**, *new media* refers to **interactive digital media** that uses **two-way communication** and involves **computing technologies**.
- It stands in contrast to traditional one-way media like **radio and television**.
- **Popularization and Features**
  - The term "**new media**" became widely used in the **mid-1990s**.
  - Over the last two decades, it has gained **mass popularity**, overtaking newspapers, radio, and TV globally.

- **Unique features of new media include:**
  - Interactivity
  - Immediacy
  - Convergence of technologies
  - Cross-linking between platforms
  - Massive storage capacity
- **New Media as a Game-Changer**
  - New media integrates **telecommunications, IT, and mass media industries**.
  - Hence, it is **not a luxury** but a **necessity** for traditional mass media to adopt.

Nature and Scope of New Media

- **What New Media Encompasses**
  - **It uses computerised digital technology and includes:**
    - Websites
    - Blogs and vlogs
    - Social media platforms
    - E-newspapers
    - Online news portals
    - E-content and online entertainment (TV/Radio)
    - Audio/video streaming platforms
    - Online gaming
- **Functional Characteristics**
  - **New media is:**
    - Dynamic
    - Affordable
    - Globally accessible
    - Delivers **instant, interactive, and multimedia feedback** (text, audio, video, graphics)

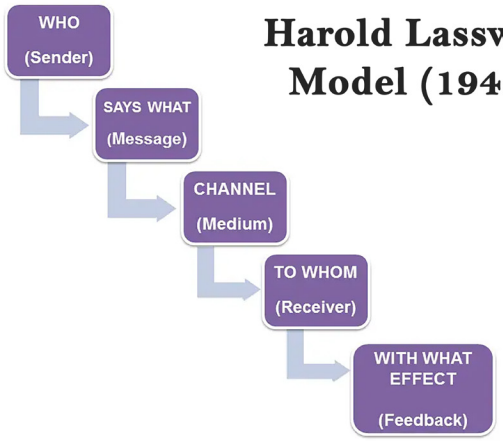
Detailed Overview of Traditional Communication Models

- **Communication Models: Role and Function**
  - These models **help explain the communication process** using diagrams or pictorial elements.
  - Common elements: *sender, message, channel, receiver*, etc.
  - Symbols like arrows and circles are used for better understanding.
  - These are **theorists' assumptions** to represent how communication functions and impacts society.
- **Key Traditional Models**

(i) Aristotle's Rhetoric:

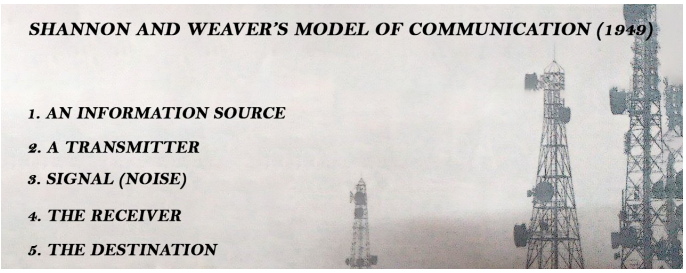
- Emphasized persuasion.
- Speakers must **adapt speeches** to various occasions and audiences for **maximum effect**.

(ii) Harold D. Lasswell's Model (1948)



- Explained communication using **five key questions:**
- **Who** (Speaker)
- **Says what** (Message content)
- **In which channel** (Medium of delivery)
- **To whom** (Receiver or audience)
- **With what effect** (Impact on the audience)
- Criticized by **Denis McQuail** for **assuming that messages always have an effect**, with no scope for feedback.

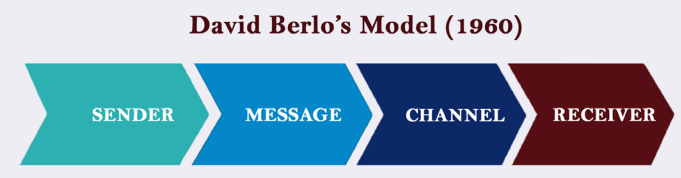
(iii) Shannon and Weaver's Model (1949)



- Developed for **telephonic communication** during **World War II.**
- A **linear system** consisting of:

- Source
- Transmitter
- Channel
- Receiver
- Destination
- Introduced the concept of **"noise"** — disturbances in the transmission process.
- However, **feedback was absent** in this model.

(iv) David Berlo's SMCR Model (1960)



- **Elements:** Sender, Message, Channel, Receiver.
- **Success depends on:**
  - Shared communication skills
  - Knowledge
  - Social system
  - Cultural background
- Channels include **human senses** — hearing, seeing, touching, smelling, tasting.
- But again, it is **linear**, ignoring **feedback, noise, or effects**.

New Audiences in the New Media Age

- **Transition from Passive to Active**
  - Traditional media (newspapers, radio, television) offered **limited or delayed feedback** mechanisms.
    - **Examples:** Letters to the editor, call-ins.
  - Audiences were **inactive and silent** receivers of content.
- **Empowerment Through New Media**
  - Today's audiences are **active, vocal, and dynamic**.
  - They can express views instantly via:
    - Tweets
    - Comments
    - Posts
    - Messages
  - They have the **power to influence** public discourse or even cyberbully others online.
- **Audience Engagement Features**
  - **Tools like:**
    - Rate us, Like, Comment, Share
  - **These options make users feel:**
    - Heard
    - Valued
    - Important
    - **As per e-gyankosh (Unit 10):** "This interactivity not only allows people to respond or react to the messages constructed by the media houses but also turns the consumer into a producer..."
- **Speed and Accessibility**
  - With just a **click**, any content can reach global audiences.
  - **Example:** Digital India Campaign—empowering people across caste, class, and geography with mobile phones and the internet.

Feedback and Customisation in the New Media Ecosystem

- **Feedback Then vs. Now**
  - **Earlier feedback systems were:**
    - Time-consuming
    - One-way
    - Rare
  - **New media enables:**
    - Instant feedback via likes, emojis, comments
    - Real-time chats, calls, video interactions
- **User Empowerment**
  - **Users can now:**
    - Read, watch, listen, comment
    - Save for later
    - Shop, order food, book tickets
  - Platforms support **Search Engine Optimisation (SEO)** to ensure better content visibility.
- **Customisation Capabilities**
  - **Audiences can:**
    - Swipe, scroll, skip, and personalize
    - Update apps
    - Filter what they consume
  - They are **highly selective and conscious participants**.

Evolving Communication Model for the New Media Age

- **Need for a Practical, Dynamic Model**
  - Inspired by **Wilber Schramm and Charles E. Osgood's Circular Model of Communication**.
  - Focuses on feedback, interactivity, and two-way communication.
- **Proposed New Media Communication Model**
  - **Core Elements:**
    - **Sender**
    - **Platform** – the medium (Internet, apps, social media)
    - **Message** – in diverse formats: text, audio, video, images
    - **Receiver**
    - **Effect** – expressive or non-expressive
    - **Feedback** – closes the communication loop
  - **Features:**
    - Sender ↔ Receiver roles are interchangeable
    - Feedback is **instant and measurable**
    - Message form is **dynamic and multimedia**
    - The model is **adaptable** to changes in technology
- **Flexibility and Evolution**
  - Additional elements can be **added or removed** as per context.
  - Recognises that **audiences are also producers**, often called **"prosumers."**

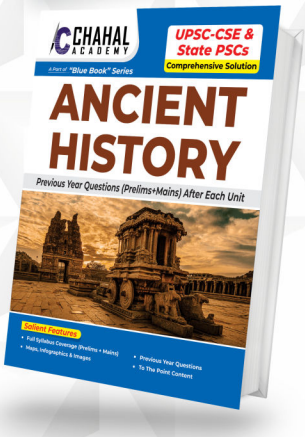
Conclusion: The Future of Communication in a New Media World

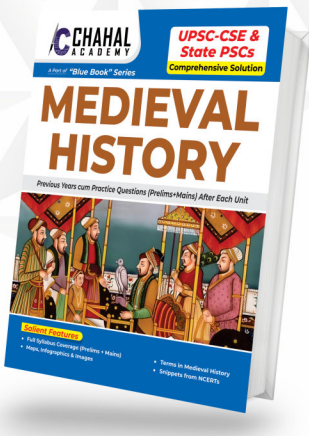
- **Transformation of Audiences**
  - Audiences have evolved from being **passive** to **active** communicators.
  - **They now engage by:**
    - Sharing views
    - Creating content
    - Building communities online
- **New Media Dependency**
  - From youth to elders and even children — everyone is part of this transformation.
  - People now **spend maximum time online**, and it's difficult to imagine life without digital media.
- **Impact of AI and Future Technologies**
  - New media, combined with **Artificial Intelligence**, will significantly shape:
    - How people communicate
    - How content is consumed
    - How audiences interact in the future
- **Relevance of Traditional Models**
  - Models like **Lasswell's, Shannon and Weaver's, Aristotle's, and Berlo's:**
    - **Fail to capture the feedback loop**, interactivity, and content dynamism.
  - In the new media age, these are largely **historical references**, not practical frameworks.

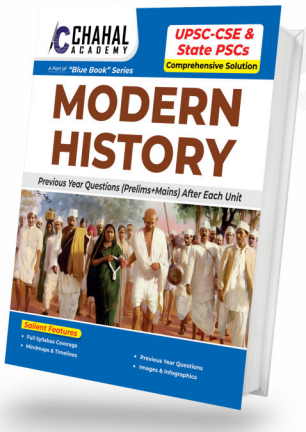
Blue Book Series

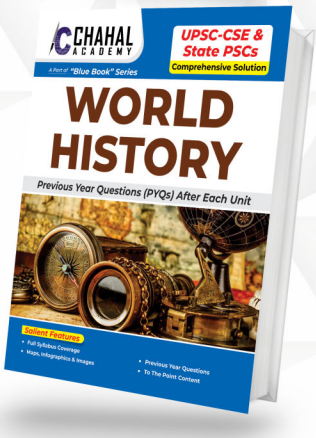
By Chahal Academy

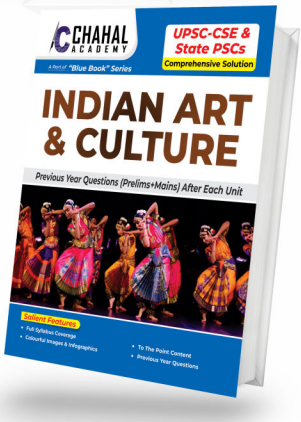
Books in Our "Blue Book" Series

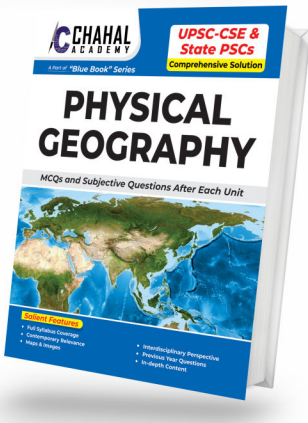


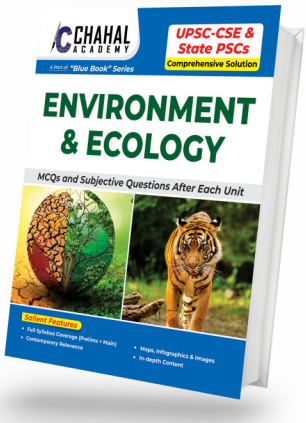


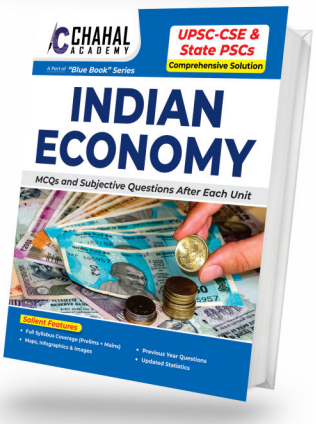


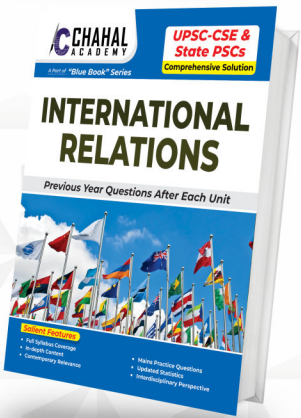


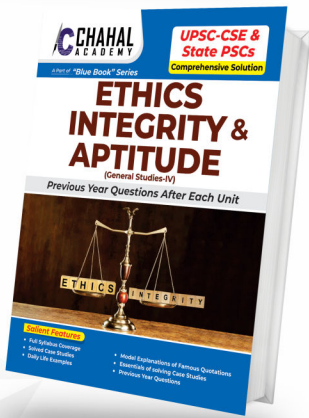


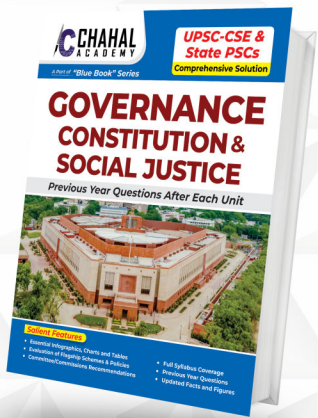












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