

AS ITS CHANGING

Typical Viewpoint September 2026



IMPULSE

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N.B:

- ⊗ A detailed comprehensive discussion has been projected in this study material from the viewpoint of **INTEGRATED UPSC CSE (PrIm+Mains)** preparation.
- ⊗ If any topic has been skipped here from the events of this respective month, it had been already duly discussed in the previous editions. So, please check the previous editions.
- ⊗ We are indebted to the different authenticated published news sources for the compilation of this study material

01.09.2026

Disinformation and Migration Crisis in Ceuta

Spanish PM blames Russia, Israel for disinformation in Ceuta crisis

Brief

- The Ceuta migration crisis highlights how **disinformation, social-media manipulation and geopolitical competition** can interact with migration to create a security and humanitarian challenge.

Ceuta is a Spanish territory in North Africa and one of the EU's two land borders with Africa.

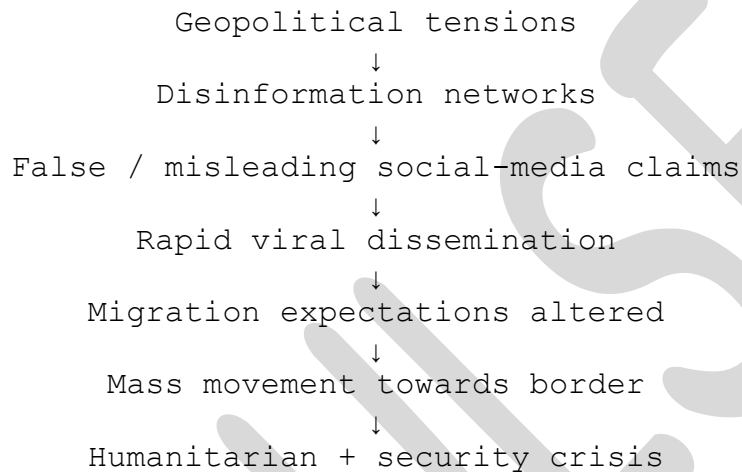


→ What Happened?

- A large number of migrants attempted to enter **Ceuta** from **Morocco** during the reported surge.
- Misleading posts circulated on **Instagram, TikTok and other social-media platforms**, claiming that migrants reaching Ceuta by sea could remain in Spain.

- Spanish PM **Pedro Sánchez** stated that there were indications of **Russian and Israeli networks**, allegedly working with far-right networks, being involved in spreading disinformation.
- Sánchez **denied Moroccan involvement**, while Morocco rejected allegations of responsibility for the crisis.
- The episode also resulted in significant **humanitarian casualties**.

How Disinformation Amplifies Migration Crises



Why Social Media Matters

- **Algorithmic amplification** can rapidly spread sensational claims.
- **Short-form videos** can remove context and encourage emotional reactions.
- **Echo chambers** reinforce existing political beliefs.
- Foreign actors can exploit **migration and identity issues** to deepen social polarisation.

Geopolitical Significance

1. Hybrid warfare

- Disinformation can function as a **non-military instrument** to exploit social and political vulnerabilities.

2. Migration as a security issue

- Migration can become intertwined with:
 - Border security
 - Human trafficking
 - Human rights
 - Domestic politics
 - Foreign-policy tensions

3. Information warfare

- The episode demonstrates that modern geopolitical competition increasingly extends into the **digital information domain**.

4. EU–North Africa relations

- Ceuta and Melilla make migration management an important component of **EU–Morocco relations**.

Relevance for India

- ❑ India also faces the possibility of **misinformation-driven mobilisation**, particularly around:
 - Border management
 - Migration
 - Communal tensions
 - Refugee movements
 - Elections
 - Internal security
- ❑ India therefore needs to balance **counter-disinformation measures with freedom of speech and privacy**.

Way Forward

- ⊗ **Government**
 - Rapid fact-checking + transparent communication
- ⊗ **Social-media platforms**
 - Algorithmic transparency + coordinated inauthentic-behaviour detection
- ⊗ **Citizens**
 - Media and digital literacy
- ⊗ **International cooperation**
 - Intelligence sharing + tracking transnational disinformation networks

🎯 UPSC Prelims Pointers

- **Ceuta** → Spanish territory in North Africa.
- It shares a **land border with Morocco**.
- Ceuta and **Melilla** are Spain's two major territories bordering Morocco.
- The crisis demonstrates the intersection of **migration, information warfare and geopolitics**.
- **Disinformation** = deliberately false or misleading information spread to deceive or manipulate.
- **Misinformation** = false information spread without necessarily having an intention to deceive.
- **Hybrid warfare** can combine conventional and non-conventional tools, including cyber and information operations.



Possible UPSC Mains Question

Q. “Disinformation has emerged as an important instrument of hybrid warfare, capable of aggravating migration, social and security crises.” Discuss the challenges it poses to democratic societies and suggest suitable measures. **(150 words)**

Keywords:

Information warfare | Hybrid warfare | Disinformation | Algorithmic amplification | Migration security | Digital literacy | Platform accountability | Strategic communication | Freedom of expression

Ramon Magsaysay Awards

Brief

- ❑ The **Ramon Magsaysay Award**, often regarded as **Asia's equivalent of the Nobel Prize**, has honoured three individuals for their contributions to **international cooperation, human rights and social development**.

2026 Awardees

<i>Awardee</i>	<i>Country</i>	<i>Contribution</i>
Tommy Koh	 Singapore	International law, diplomacy and UNCLOS
Bo Kyi	 Myanmar	Human rights, democracy and documentation of political persecution
Runa Khan	 Bangladesh	Poverty alleviation, climate resilience and empowerment of disadvantaged communities

1 **Tommy Koh – Singapore**

- Lawyer and diplomat.
- Presided over the **UN Conference on the Law of the Sea** involving more than 150 countries.
- The conference adopted the **United Nations Convention on the Law of the Sea (UNCLOS) in 1982**.
- Recognised for promoting:
 - *International dialogue*
 - *Rule of law*
 - *International cooperation*

- Peaceful resolution of disputes

UPSC Link: UNCLOS

UNCLOS → Maritime legal framework

It provides rules concerning:

- Territorial sea
- Exclusive Economic Zone (**EEZ**)
- Continental shelf
- High seas
- Marine resource rights
- Settlement of maritime disputes

Importance: UNCLOS is particularly relevant to disputes in the **South China Sea**.

2 **Bo Kyi – Myanmar**

- Human-rights activist and former political prisoner.
- Has been arrested twice and spent **seven years in prison**.
- Co-founded the **Assistance Association for Political Prisoners (AAPP)** in 2000.
- His organisation documents:
 - Political imprisonment
 - Human-rights violations
 - Conditions of detainees
- Also supports political prisoners and their families.

UPSC Link

- ⊗ Democracy + Human Rights + Civil Society
- ⊗ His work demonstrates the role of civil-society organisations in documenting violations and preserving accountability during political crises.

3 **Runa Khan – Bangladesh**

- Began working as a teacher for poor children.
- Founded **Friendship**, an organisation working with vulnerable communities.
- Her work focuses on:
 - Poverty reduction
 - Climate adaptation
 - Education
 - Women's empowerment

- Livelihood creation
- Social justice

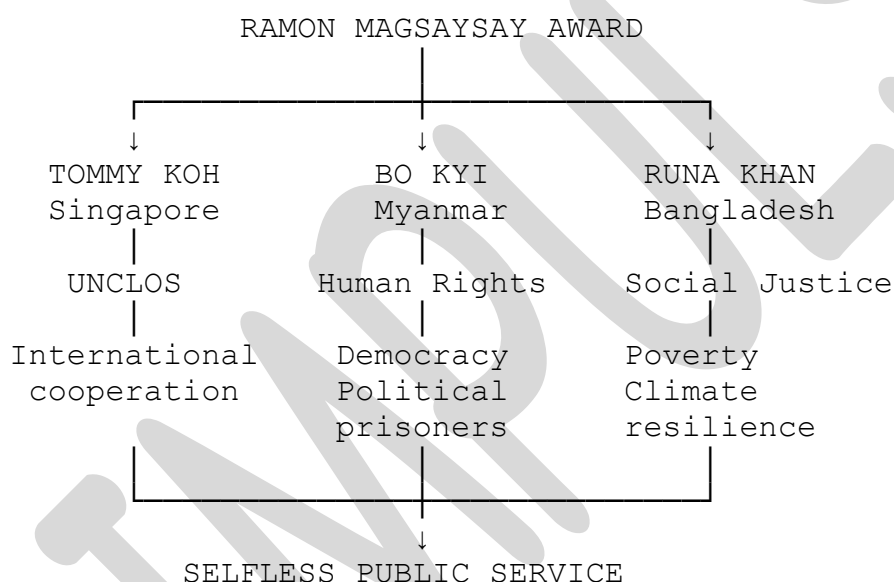
UPSC Link: Climate Vulnerability

Bangladesh is highly vulnerable to:

- Sea-level rise
- Flooding
- Cyclones
- Salinity intrusion
- Climate-induced displacement

Therefore, **climate adaptation + livelihood security** becomes crucial for vulnerable communities.

Mind Map



Prelims Pointers

- Ramon Magsaysay Award → Named after former President of the Philippines Ramon Magsaysay.
- First awarded in 1958.
- The award recognises individuals/organisations demonstrating **exemplary service and transformative leadership in Asia**.
- Tommy Koh → UNCLOS and international diplomacy.
- Bo Kyi → Human rights and political prisoners in Myanmar.
- Runa Khan → Poverty alleviation, climate resilience and empowerment in Bangladesh.

- UNCLOS was adopted in 1982.

Important Conceptual Link

UNCLOS → Maritime zones → EEZ → Marine resources → South China Sea disputes → International law

Possible UPSC Mains Question

Q. “International cooperation, human rights and inclusive development are essential pillars of sustainable peace in Asia.” Discuss with reference to recent Ramon Magsaysay Award winners. (150 words)

Keywords

UNCLOS | Rule of Law | Human Rights | Civil Society | Climate Resilience | Inclusive Development | Women's Empowerment | International Cooperation

One-line takeaway:

The three awardees collectively represent three critical dimensions of contemporary Asian challenges—international law, protection of human rights and inclusive climate-resilient development.

Ramon Magsaysay Award

- Asia's highest honor and premier prize,
- widely known as the "**Nobel Prize of Asia**".

Overview & History

- **Established:** April 1957 by the trustees of the Rockefeller Brothers Fund in New York City with the concurrence of the Philippine government.
- **Namesake:** Honors **Ramon Magsaysay, the third president of the Philippines,** celebrating his example of integrity in
 - governance,
 - courageous service, and
 - pragmatic idealism.
- **Administrator:** Managed by the Ramon Magsaysay Award Foundation based in Manila, Philippines.
-
- **First Awarded:** August 31, 1958.

Purpose & Recognition

- **Core Aim:** Recognizes individuals and organizations in Asia that demonstrate greatness of spirit, selfless service, and transformative leadership without regard to race, gender, religion, or nationality.
 - **Categories:** While it historically recognized specific fields like public service, community leadership, and journalism, it now broadly honors systemic, impactful change and emergent leadership.
 - **The Laureates:** As of 2026, over 350 outstanding individuals and organizations have received the prize. Notable historical recipients include Vinoba Bhave (first Indian recipient in 1958) and Ravish Kumar (2019)
-

Indian Economy

Strong Quarter Quickens Pace, but Risks Remain

Brief

- The **Indian economy grew by 7.8% in Q1** of the current financial year, exceeding the RBI's earlier expectation of **7%** for the quarter.
- The strong performance has raised expectations that the **full-year growth forecast of 6.7%** may be revised upwards.

Major Growth Drivers

<i>Sector/Indicator</i>	<i>Performance</i>
Overall GDP growth	7.8%
Manufacturing	9.2%
Construction	7.7%
Services	10%
Private consumption	7.1%
Capital goods in IIP	15%
Centre's capital expenditure	~24% rise
Capex of 17 major States	6.8% rise



Manufacturing

- Strong manufacturing growth was supported by indicators such as **cement production and steel consumption.**

Services

- Services grew by **10%**, led particularly by:
 - Financial services
 - Real estate
 - Professional services

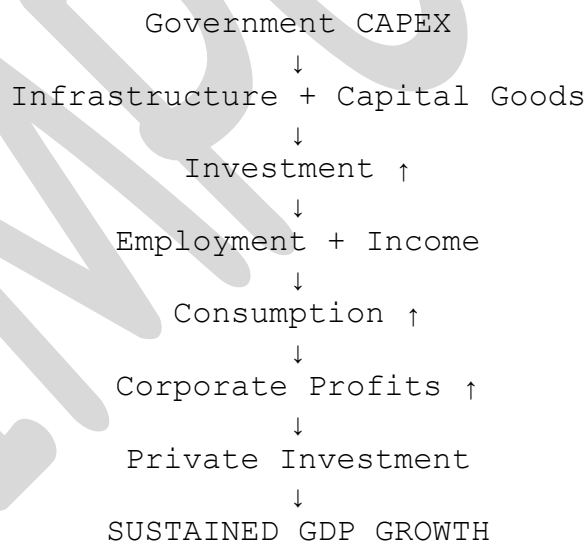
Private Consumption

- Consumption grew **7.1%**, reflected in buoyant sales of:
 - Passenger vehicles
 - Two-wheelers
 - Tractors
- This indicates relatively healthy **urban as well as rural demand**.

Investment

- Investment momentum remained strong due to:
 - Government capital expenditure
 - Capital-goods production
 - State-level capex
 - Healthy bank credit
- The recovery in the **monsoon and kharif sowing** also provides support to rural demand.

Growth Cycle



Risks to Growth

External Risks

Geopolitical tensions

→ Oil-price volatility

- Higher import bill
- Inflationary pressure
- Pressure on current account
- Possible slowdown in growth

✂ The **West Asia conflict** and tensions involving the US and Iran have pushed up Brent crude prices.

Domestic Risk

Strengthening El Niño

- Potentially weaker/erratic monsoon
 - Lower kharif output
 - Rural income pressure
 - Food inflation
- Weaker private consumption

UPSC Prelims Pointers

- **GDP growth** measures the change in the value of final goods and services produced within an economy.
- **Private Final Consumption Expenditure (PFCE)** is an important component of expenditure-side GDP.
- **Capital expenditure** creates assets or reduces liabilities and can have a stronger long-term multiplier effect than revenue expenditure.
- **Manufacturing + construction** belong to the broad **industry sector**.
- Financial, real estate and professional services form part of the **services sector**.
- **El Niño** refers to abnormal warming of the central/eastern tropical Pacific Ocean and can influence India's monsoon.

Economy Interlinkages

Oil-price rise

- Import bill ↑
- Current Account pressure ↑
- Inflation ↑
- Real purchasing power ↓
- Consumption/investment may weaken

El Niño

- Monsoon uncertainty
- Agricultural output ↓

- Rural income ↓
- Food inflation ↑
- Consumption pressure

👉 Possible UPSC Mains Question

Q. “India's recent economic growth demonstrates considerable resilience, but external geopolitical shocks and climate-related risks may affect its sustainability.” Examine the major drivers of India's growth and the challenges to sustaining it. **(250 words)**

★ Keywords for Mains

GDP growth | Domestic demand | Private consumption | Capex-led growth | Manufacturing | Services | Investment cycle | Oil-price shock | El Niño | Inflation | External sector | Growth sustainability

🔑 Conclusion

India's strong quarterly growth reflects the resilience of domestic demand, services and investment. However, sustaining high growth requires strengthening private investment, protecting purchasing power and building resilience against geopolitical and climate-related shocks.

Why the US Wants Greater Control Over Venezuelan Crude

Brief

- The US is seeking greater control over Venezuela's oil-producing assets and plans to use **American private capital and technology** to revive Venezuela's severely underdeveloped petroleum sector.
- This is significant because **Venezuela possesses the world's largest proven crude-oil reserves**, yet its actual production remains very low.

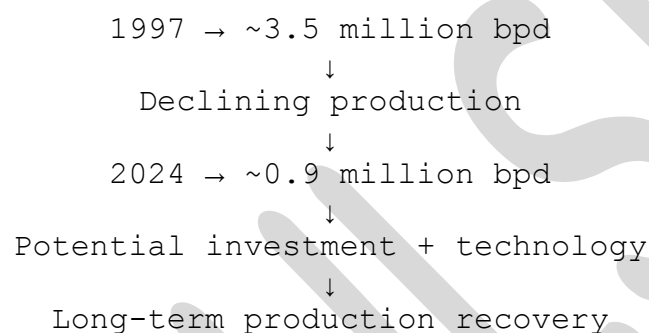
Venezuela: Oil Paradox

Huge reserves + Low production

- Proven reserves: ~300 billion barrels

- Around **20% of global proven reserves**
- Production has fallen sharply from about **3.5 million barrels/day in 1997** to roughly **0.9 million bpd in 2024**.
- Major reasons for low production include:
 - Underinvestment
 - Sanctions
 - Ageing infrastructure
 - Poor maintenance
 - State control and management problems

Production Trend



Why Does the US Want Venezuelan Oil?

1. Heavy Sour Crude

Most Venezuelan crude is **heavy and sour**:

- **Heavy** → high density/viscosity; more difficult to process.
- **Sour** → relatively high sulphur content.

By contrast, much US crude is **light and sweet**.

Therefore:

Venezuelan heavy crude → US Gulf Coast refineries

Many Gulf Coast refineries were specifically designed to process **heavy crude from Latin America and Canada**.

2. Energy Security

The US wants a **reliable and geographically close source of crude**, particularly amid instability affecting major oil-producing regions.

Greater access to Venezuelan crude could:

Diversify supply → reduce vulnerability to disruptions → strengthen US energy security

3. Geopolitical Competition

Venezuela has historically developed close economic relationships with **China and Russia**.

Greater US involvement could therefore:

US investment → greater American influence → reduced Chinese/Russian influence in the Western Hemisphere

This gives the issue significance beyond energy economics.

4. Influence over Global Oil Markets

Greater Venezuelan production could potentially add substantial crude to global markets.

Production ↑ → Global supply ↑ → Price pressure ↓

This could be strategically valuable for Washington, particularly during periods of geopolitical disruption.

5. Utilisation of Existing Refinery Infrastructure

The US Gulf Coast possesses substantial refining capacity suited to **heavy sour crude**.

Thus, Venezuelan oil is not simply about *how much oil exists*; it is also about **whether the crude matches existing refinery configurations**.

! Major Challenges

1. Dilapidated infrastructure

- Reviving Venezuela's oil industry requires massive investment in:
 - Oil fields
 - Pipelines
 - Refineries
 - Ports
 - Extraction technology

2. Huge investment requirement

- Rystad estimates that **more than \$180 billion** could be required over 15 years to restore production towards late-1990s levels.

3. Political & legal uncertainty

- Questions remain over:
 - Ownership
 - Operational control
 - Long-term contracts
 - Authority of Venezuela's interim administration

4. Domestic opposition

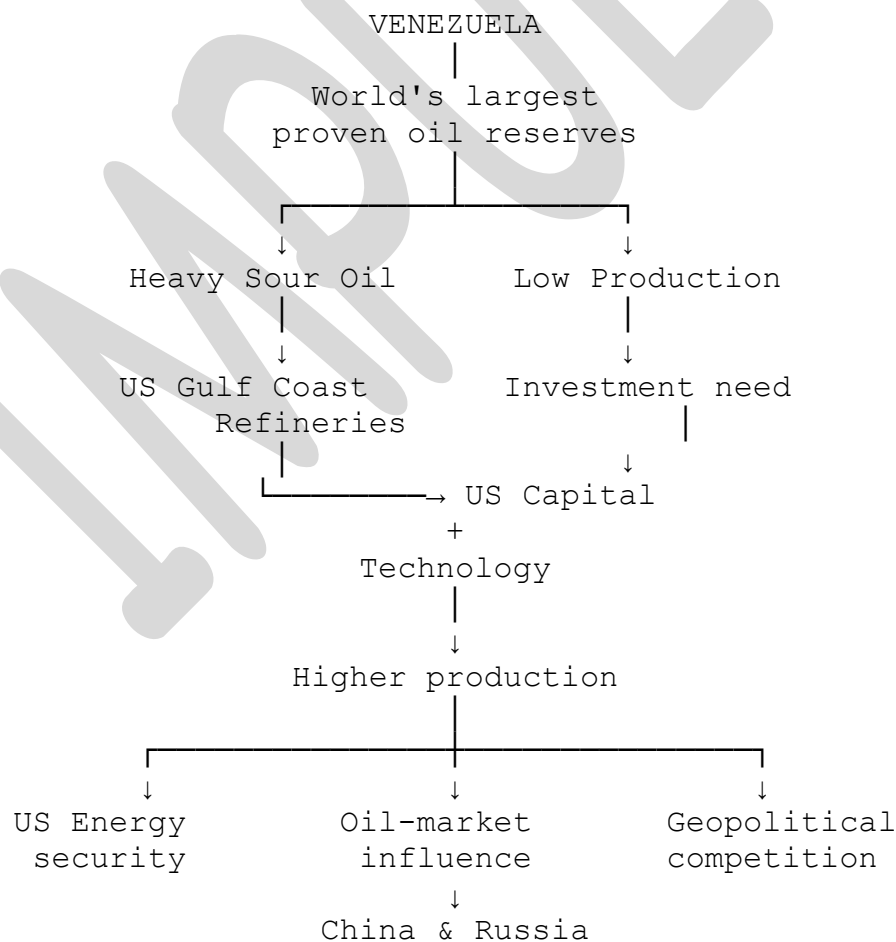
- Greater foreign control over strategic oil assets can generate political resistance within Venezuela.

5. Sanctions

- US sanctions have historically constrained Venezuelan oil exports, making the legal framework of any new arrangement crucial.



Geopolitical-Energy Nexus



Heavy vs Light Crude

- **Heavy crude:** Higher density and viscosity.
- **Light crude:** Lower density and easier to refine.
- Heavy crude generally requires more complex refining.

Sour vs Sweet Crude

- **Sour:** Higher sulphur content.
- **Sweet:** Lower sulphur content.
- Sweet crude generally requires less desulphurisation.

Venezuela

- Located in **northern South America**.
- Has the **world's largest proven crude-oil reserves**.
- Much of its oil is **extra-heavy/heavy sour crude**.
- The **Orinoco Belt** is particularly important for its petroleum resources.

Possible UPSC Mains Question

Q. “Control over energy resources increasingly serves both economic and geopolitical objectives.” Examine the strategic significance of US efforts to gain greater access to Venezuelan crude in the context of energy security and great-power competition. **(250 words)**

Keywords

Energy security | Heavy sour crude | Refinery configuration | Strategic reserves | Oil geopolitics | Sanctions | Energy diversification | Western Hemisphere | China-Russia influence | Resource diplomacy

Conclusion

The US interest in Venezuela is not simply about acquiring more oil. It combines refinery economics, energy security, control over supply chains and geopolitical competition. Venezuela's enormous reserves can become strategically valuable only if political stability, investment, technology and a credible legal framework allow its production capacity to be restored.

V2V Communication: Transforming Road Safety

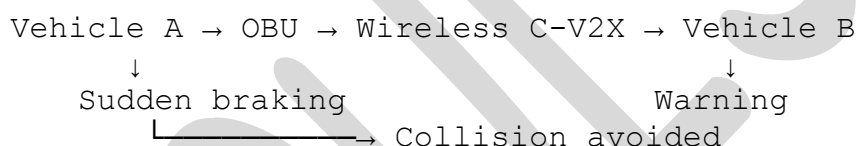
Brief

- The **Ministry of Road Transport & Highways (MoRTH)** has proposed mandatory **Vehicle-to-Vehicle (V2V) communication** in new vehicles through the draft **Central Motor Vehicles (Amendment) Rules, 2026**.

Key Provisions

- Vehicles manufactured from **October 1, 2027**, if fitted with V2V, must comply with **AIS-230**.
- From **October 1, 2028**, specified new vehicles must be fitted with V2V meeting AIS-230 standards.
- Covers **2/3-wheelers, cars, buses and goods vehicles**.
- Estimated **OBU cost: ₹5,000–7,000**.

How V2V Works



- Vehicles continuously exchange **speed, position, direction and acceleration**. V2V can warn about **sudden braking, unsafe lane changes, obstacles, black spots, fog and collision risks**.
- The proposed system uses **C-V2X** in the **5.875–5.925 GHz** band, **with an approximate range of 300 metres**.

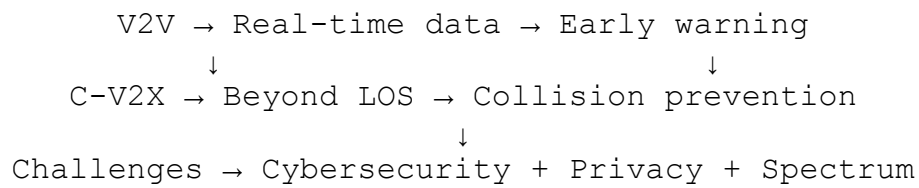
V2V vs ADAS

- ✂ **Camera-based ADAS** depends largely on **line of sight**, whereas V2V can operate **beyond line of sight**, such as around blind corners or behind large trucks. Thus, V2V **complements rather than replaces ADAS**.

Challenges

- **Cybersecurity:** Risk of hacking and data manipulation.
- **Privacy:** Vehicle data can reveal movement/location patterns.
- **Spectrum capacity:** Increasing vehicle density may strain available bandwidth.
- **Miscommunication:** False or inaccurate warnings could themselves create risks.
- **Network effect:** Benefits increase as more vehicles become V2V-enabled.

Mind Map



UPSC Mains Question

Q. “V2V communication can shift road safety from reactive to predictive and cooperative safety.” Discuss its potential and challenges in India. **(150 words)**

Keywords: V2V | C-V2X | AIS-230 | ADAS | Intelligent Transport | Cybersecurity | Data Privacy | Road Safety.

● **AERIAL PARALLELS**

● The V2V system is somewhat similar to technology used in aviation, where aircraft broadcast their position, speed, and altitude — and the nearby aircraft and ground station receive it.

● While this system is now common in the aviation sector globally, the road sector is still evolving.

MESSI MAGIC ENDS

Football loses part of its soul as legend calls time on Argentine career after failure to defend World Cup crown and death of his father Jorge



“ I leave with the peace and pride of having given you, along with my teammates, dream-like moments. It was incredible to have experienced it with you all. ”

LIONEL MESSI, IN HIS RETIREMENT POST



FIFA World Cup: 2022
Runners up: 2014, 2026



Copa América: 2021, 2024
Runners up: 2007, 2015, 2016



CONMEBOL–UEFA Finalissima: 2022



Ballon d'Or: 2009, 2010, 2011, 2012, 2015, 2019, 2021, 2023



Golden Ball x2 (FIFA World Cup 2014, 2022)
Silver Ball (FIFA World Cup 2026)

TRIBUTES POUR IN

“Your love for our country, your internal battles to never give up, your strength to always endure injustices, your leadership, the details with every worker of our team... Just thank you, the greatest of all time.”

RODRIGO DE PAUL,
ARGENTINA TEAMMATE

“Let’s be grateful all our lives for being Argentinian for having taken Argentina to the top of the world. For having chosen to be Argentine when you could have easily chosen something else. Thanks Captain”

ÁNGEL DI MARÍA,
FORMER ARGENTINA TEAMMATE

“I’m so proud to have been by your side on this journey and to see you fulfill all your dreams.”

ANTONELA ROCCUZZO,
MESSI’S WIFE

Football, before and after Messi

INTERNATIONAL FOOTBALL has lost its grandest experience, which was watching Lionel Messi. Time, grief and wear and tear took their inescapable toll on the Argentine, who announced his retirement on Monday through a post on Instagram. There is a sense of loss and mourning, because no one player has had such a vast impact on a major sport's footprint as Messi. He scored goals, hatched assists, won trophies and honours, conquered glory and immortality. But most poignantly, he embodied the beauty in the beautiful game.

In 21 years at the pinnacle of the sport, he saw the game transform from the preserve of artistes to that shaped by athletes, the game getting brutally physical, the movements predetermined in the board-room. But Messi remained as he was when he first burst through — a shapeshifting genius immune to the changes around him. Roles, positions, and hairdos changed, but the magnificence of Messi's game remained untarnished. He came closest to the sport's ideal as anyone ever has. His genius was simple and uncomplicated, football with a frictionless lightness, a complicated game made to look ridiculously simple, a task of merely finding angles and spaces, precision and perfection, of brush-stroking the ball with a swish of his left foot to the back of the net.

Whether he is the greatest of all time is a meaningless debate. Only Messi could measure Messi or gauge the true depth of his gifts. The two men who could have arguably judged his greatness are dead, Pele and Diego Maradona. The scale of measurable achievements would not capture the scale of immeasurable experience that was watching Messi. International football, after Messi's departure, will be a less pleasurable feast.

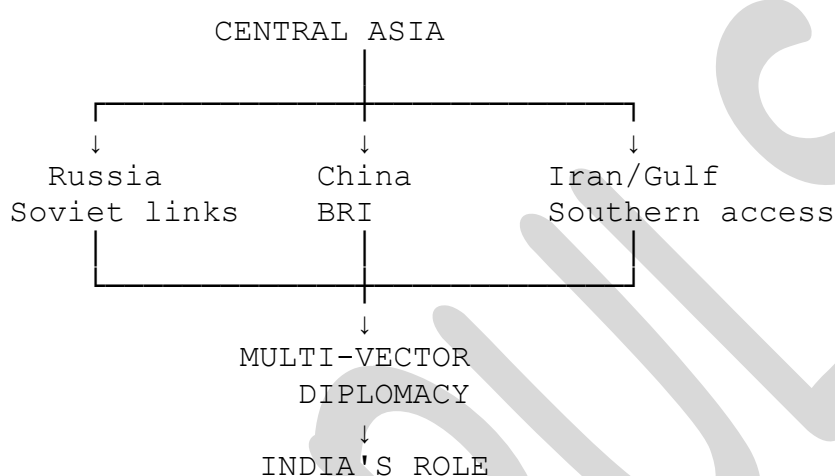
02.09.2026

Take Bishkek to BRICS

● Core Issue

- PM Narendra Modi's address at the **26th SCO Summit in Bishkek, Kyrgyzstan** highlights India's challenge of deepening engagement with **Central Asia** amid growing Chinese, Russian, Iranian and Gulf influence.

🌐 Central Asia's Changing Geopolitics



The five Central Asian republics are increasingly pursuing **multiple partnerships rather than choosing one major power**. India has strategic partnerships with all except **Turkmenistan**, which follows permanent neutrality.

🔗 India's Connectivity Challenge

India lacks direct land access to Central Asia because of its geographical position and absence of overland connectivity through Pakistan.

Way Forward:

- **Chabahar Port & International North-South Transport Corridor (INSTC)**
- Digital connectivity
- IT and professional services
- Technology and investment
- Education and cultural exchanges

Thus, connectivity should mean **economic and digital integration**, not merely roads and railways.

Terrorism

India advocates dismantling the entire **terror ecosystem**:

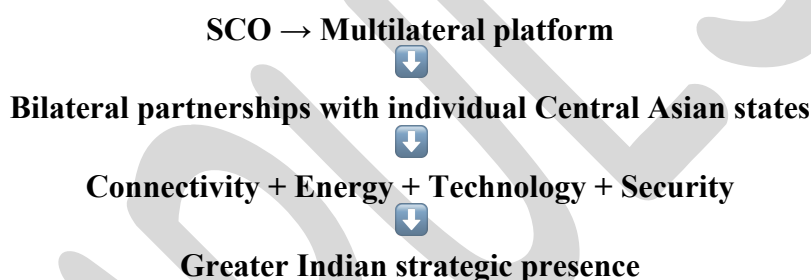
Financing → Recruitment → Radicalisation → Training → Terrorism

However, weakening international consensus and divergent positions within the **SCO** make collective action difficult.

China Factor

- China's enormous financial capacity and **Belt and Road Initiative (BRI)** investments give it significant influence in Central Asia.
- Therefore, India should emphasise **individual bilateral partnerships** alongside multilateral engagement.
- **Example:** India's agreement with **Uzbekistan** for long-term uranium supply strengthens strategic cooperation.

Strategic Approach



The same approach can be extended to **BRICS**, particularly as India prepares to host the **18th BRICS Summit**.

Possible Mains Question

Q. “Central Asian states are increasingly pursuing multi-vector foreign policies.” Examine how India can leverage bilateral and multilateral platforms such as the SCO and BRICS to strengthen its strategic presence in the region. **(250 words)**

Keywords: Multi-vector diplomacy | SCO | BRICS | Connectivity | INSTC | Chabahar | BRI | Energy security | Terrorism | Strategic autonomy

Specimen answer format

Introduction

Central Asia is emerging as a critical geopolitical space owing to its **strategic location, energy resources, connectivity potential and security concerns**. The region's “multi-

vector” diplomacy provides India an opportunity to deepen its engagement beyond traditional Russia-centric ties.

India’s Strategic Interests in Central Asia

1. Connectivity

- India lacks direct land access to Central Asia due to Pakistan’s geographical barrier.
- **Chabahar Port and International North-South Transport Corridor (INSTC)** can provide alternative connectivity.
- India should expand **digital connectivity, IT services, education and technological partnerships**, rather than focusing only on physical infrastructure.

2. Energy Security

- Central Asia possesses significant **uranium, hydrocarbons and critical minerals**.
- Long-term arrangements such as India-Uzbekistan cooperation on uranium can diversify India’s energy sources.

3. Security & Counter-terrorism

- Terrorism, radicalisation and drug trafficking affect regional stability.
- Through the **SCO**, India can push for action against terrorist financing, recruitment and safe havens.

4. Managing China’s Influence

- China’s **BRI investments** give it substantial economic influence.
- India should strengthen individual partnerships with Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan while respecting their strategic autonomy.

Role of SCO and BRICS

SCO → Security + Regional Dialogue + Connectivity

BRICS → Economic Cooperation + Global South Platform + Strategic Coordination

India can use these platforms to convert multilateral engagement into **stronger bilateral partnerships**.

Way Forward

- Strengthen Chabahar–INSTC connectivity.
- Expand trade, technology and investment partnerships.
- Promote Central Asian participation in Indian initiatives.
- Pursue **strategic autonomy and issue-based cooperation**.

Conclusion

India need not compete with China or Russia on every front. By becoming a **reliable and valuable strategic option** for Central Asian states, India can convert its civilisational links and strategic partnerships into sustained geopolitical influence.

INS Nipun: Boost to India's Deep-Sea Capabilities

Brief

- The Indian Navy commissioned **INS Nipun**, the second **Nistar-class Diving Support Vessel (DSV)**, at Mumbai. It strengthens India's **deep-sea diving, underwater intervention and submarine rescue** capabilities.

Prelims Pointers

- **DSV:** Specialised naval platform for prolonged underwater operations such as:
 - Deep-sea diving & inspection
 - Salvage/recovery
 - Underwater repairs
 - Submarine rescue
- **INS Nipun:** ~9,000-tonne indigenous DSV.
- Built by **Hindustan Shipyard Ltd. (HSL)**, **Visakhapatnam**.
- Contract for **two DSVs** signed in **2018**.
- First vessel: **INS Nistar**, commissioned in **July 2025**.
- *Equipped with:*
 - **Deep-sea saturation diving system** → divers work under pressure for extended periods.
 - **Side diving stage** → supports diving operations.
 - **Remotely Operated Vehicles (ROVs)** → monitoring, inspection and salvage.
 - **Self-propelled hyperbaric lifeboat** → pressurised evacuation of divers.
- Acts as a “**mother ship**” for **Deep Submergence Rescue Vehicles (DSRVs)** used for submarine personnel evacuation.
- India currently operates **two DSRVs**.



Operational Chain

DSV → Divers + ROVs + Medical/Pressure Systems → Underwater Intervention → Salvage / Submarine Rescue



Strategic Significance

Indian Ocean Region (IOR) → Large maritime area + growing submarine operations → Need for rapid underwater rescue → **Enhanced maritime preparedness**

Takeaway: INS Nipun strengthens India's **indigenous underwater rescue and deep-sea operational capacity**, while reducing dependence on shore-based support and enabling assistance to regional partners.

Distinguished Jurist: Unused Route to SC Judge

Brief

- **Justice Ujjal Bhuyan** highlighted **Article 124(3)(c)** as an “*unused mandate*”, allowing a **distinguished jurist** to be appointed directly as a Supreme Court judge during his speech at a convocation.

Constitutional Provisions

Article 124(3): A person is eligible to become an SC judge if they are a **citizen of India** and:

1.  **HC Judge Route** → Served as a High Court judge for **5 years**, OR
2.  **Advocate Route** → Practised as an advocate in a HC for **10 years**, OR
3.  **Distinguished Jurist Route** → Is, in the opinion of the President, a *distinguished jurist*.

➡ Third route has never been used.

What is a “Distinguished Jurist”?

Generally refers to a person with **outstanding legal/juristic learning**, including those engaged in:

- Legal teaching
- Research
- Legal scholarship
- Professional legal practice

Key point: Courtroom practice is **not necessarily essential**.

Historical Background

- Provision originated during **Constituent Assembly debates (1949)**.
- **H.V. Kamath** moved the amendment.
- **B.R. Ambedkar** supported the idea but questioned the term “distinguished”.
- A similar provision was later introduced for High Courts through the **42nd Amendment**, but was **repealed by the 44th Amendment**.

Prelims Mind Map



↓
Never used in India

🎯 Prelims Takeaway

- ✂ The **distinguished jurist provision is constitutionally valid but remains unused**, raising questions about **judicial diversity, legal academia and the scope of the collegium system**.

INDUS WATERS TREATY (IWT): THE ROAD AHEAD

Brief

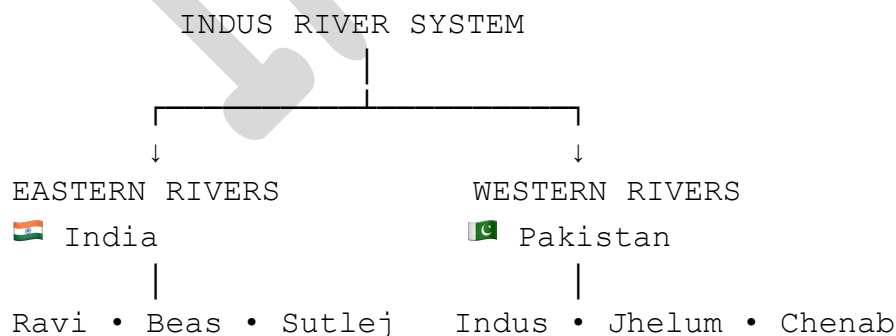
- The **Permanent Court of Arbitration (PCA)** has ruled that India's decision to keep the **Indus Waters Treaty (1960)** in "*abeyance*" is not permissible under the Treaty or applicable international law.
 - It also directed India to halt construction work on the **Ratle Hydroelectric Project** until the technical dispute is resolved.
- **India has rejected the proceedings**, maintaining that the Court was constituted in violation of the Treaty and that a parallel dispute-resolution process was impermissible.

🟢 **PRELIMS: KEY FACTS**

1. Indus Waters Treaty, 1960

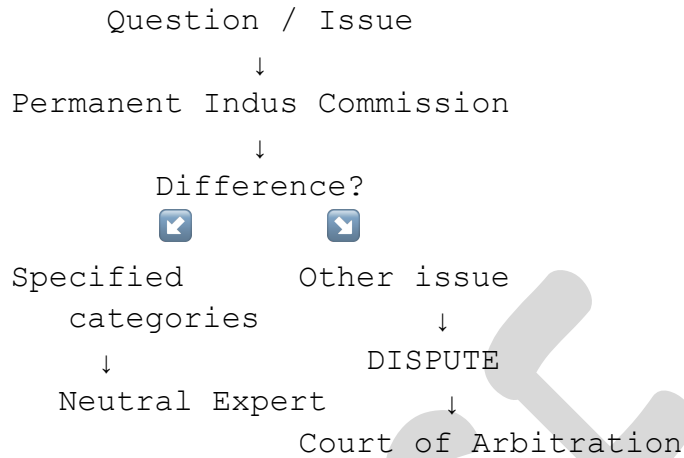
- Signed between **India and Pakistan in 1960**.
- **World Bank** played an important role in facilitating the Treaty.
- It governs six rivers of the **Indus river system**.

🌊 River-Water Allocation



📌 **Important:** India is allowed **limited uses of the Western Rivers**, including specified domestic, agricultural and hydroelectric uses.

2.



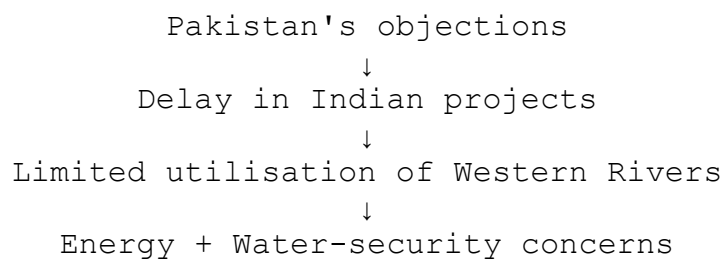
- A **neutral expert** mechanism was already dealing with the relevant issue.
- India argues that constituting a **Court of Arbitration on the same matter created parallel proceedings**.
- India therefore did not participate in the PCA process.

Why is IWT Important?

Water → Livelihoods → Agriculture → Energy → National Security

- The Treaty has survived **wars and prolonged bilateral tensions**.
- India wants greater utilisation of its permissible rights over the **Western Rivers**.
- Pakistan remains concerned about downstream implications of Indian hydroelectric projects.
- **Climate change, population growth and increasing water stress** are making transboundary water governance more complex.

A diagram of a crane lifting a load. The crane has a vertical mast and a horizontal jib. A cable is attached to the end of the jib and runs over a pulley to a winch on the mast. The winch is lifting a rectangular load from the ground. The load is shown with a red base and a yellow top.



✂ India is pursuing several infrastructure projects in **Jammu & Kashmir**, including the **Ratle Hydroelectric Project**.

● Key Challenges

- **Jurisdictional dispute** over PCA and neutral-expert mechanisms.
- Lack of **India-Pakistan trust**.
- Increasing politicisation of water.
- Climate-induced changes in river flows.
- Risk of internationalisation of a fundamentally bilateral issue.
- Absence of clarity over the future of the Treaty.

● Way Forward

"Cooperation + Rights + Sustainability"

- Pursue **bilateral dialogue** on water management.
- Protect India's legitimate rights under international law.
- Improve scientific **hydrological data-sharing mechanisms**.
- Develop **climate-resilient basin management**.
- Explore renegotiation/revision if both sides agree.
- Maintain technical cooperation wherever feasible to prevent water disputes from becoming humanitarian crises.

🎯 PROBABLE PRELIMS QUESTION

Q. With reference to the Indus Waters Treaty, consider the following statements:

1. Ravi, Beas and Sutlej are classified as Eastern Rivers.
2. India has no permitted use whatsoever of the Western Rivers.
3. The Treaty provides mechanisms involving the Permanent Indus Commission, Neutral Expert and Court of Arbitration.

Which of the statements given above are correct?

Answer: 1 and 3 only.

🎯 PROBABLE MAINS QUESTION

Q. "The Indus Waters Treaty has demonstrated resilience, but growing water stress, climate change and India-Pakistan geopolitical tensions are challenging its existing framework." Discuss the issues and suggest a way forward. **(250 words)**

Introduction

The **Indus Waters Treaty (IWT), 1960**, brokered with World Bank assistance, is one of the world's important transboundary water agreements. Despite wars and prolonged tensions, it has largely endured. However, its future is increasingly contested.

Major Issues

1. **Dispute-resolution mechanism:** India has objected to the Permanent Court of Arbitration proceeding alongside the **Neutral Expert mechanism**, arguing that parallel proceedings violate the Treaty framework.
2. **Water-security concerns:** India seeks greater utilisation of its permitted rights over the **Western Rivers—Indus, Jhelum and Chenab**, particularly for hydropower. Pakistan frequently raises objections to Indian projects.
3. **Geopolitical tensions:** Water has increasingly become linked with national security, reducing space for technical cooperation.
4. **Institutional limitations:** The Treaty was designed in a different demographic and environmental context and has limited provisions for addressing emerging challenges such as climate resilience and basin-wide sustainability.

Way Forward

- Pursue **bilateral dialogue** and strengthen the Permanent Indus Commission.
- Ensure India's legitimate rights while adhering to agreed technical parameters.
- Promote **scientific and transparent hydrological data sharing**.
- Incorporate climate-change considerations into future water management.
- Explore **renegotiation or modernisation** of the Treaty through mutual consent.
- Keep humanitarian and ecological considerations above political confrontation.

Conclusion

- The IWT should not merely be viewed through the lens of India-Pakistan rivalry. A **rules-based, climate-resilient and cooperative approach** can protect India's legitimate interests while ensuring sustainable management of the Indus basin for both downstream populations.

India's GDP Growth: MoSPI Defends 7.8% Q1 Growth

Brief

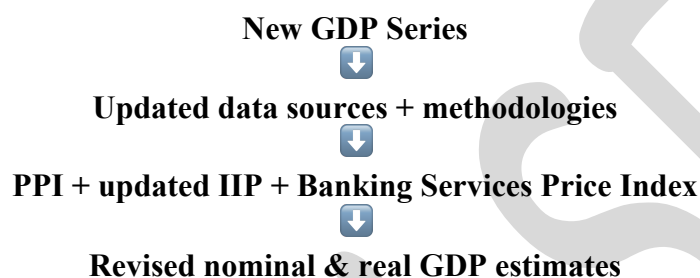
- **MoSPI defended India's 7.8% real GDP growth in Q1 (April–June)** after criticism over the unexpectedly high figure. The revision reflects the **new GDP series (2022–23 base year)** and methodological improvements, including **double deflation** and newer price/production indices.

● PRELIMS POINTERS

Key Data

- Q1 GDP growth: 7.8%
- RBI forecast: 7%
- Previous Q4 growth revised: 7.8% → 8.6%
- New GDP series: 2022–23 base year
- Earlier series: 2011–12 base year

🔄 Why were estimates revised?



★ Double Deflation — Important Prelims Concept

❑ **GVA in current prices** = value of output – value of intermediate inputs

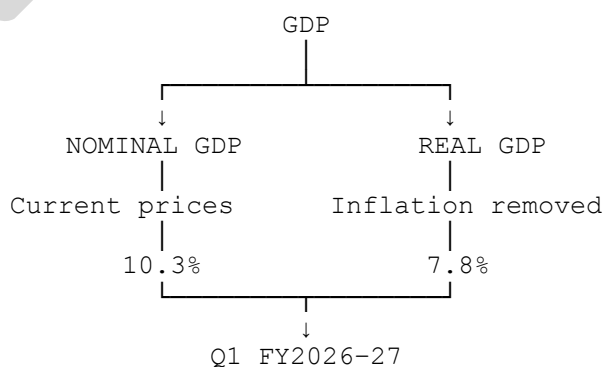
❑

❑ **To calculate real GVA:**

Output → Deflated using output-specific price index
+
Inputs → Deflated using input-specific price index
↓
REAL GVA

- Earlier, similar deflators were often applied to both inputs and outputs in several sectors.
- The new series applies **double deflation more comprehensively**, allowing input and output prices to change independently.

❑ **Nominal vs Real GDP**



- ✂ **Nominal GDP:** Measured at current prices; includes the effect of inflation.
- ✂ **Real GDP:** Inflation-adjusted measure; better reflects **actual change in output**.

Producer Price Index (PPI)

- New methodology uses **300+ deflators**, compared with around **180 earlier**.
- Helps capture sector/product-specific price movements more accurately.

What is a Base Year?

- The **base year** is the reference year used for comparing prices and measuring changes in the volume/value of economic activity.

Old series → 2011–12

↓ Revised GDP Series

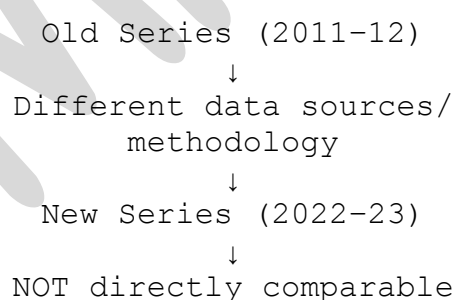
New series → 2022–23

Why revise the base year?

- Incorporate **new data sources**
- Update **methodology**
- Reflect structural changes in the economy
- Improve coverage and accuracy
- Capture changing consumption and production patterns

📌 Base-year revisions are undertaken periodically; India's latest revision was **long-pending**.

THE CORE ISSUE: COMPARABILITY



For example, comparing **Q1 FY2026–27 GDP under the new series** with **Q1 FY2025–26 GDP under the old series** can produce a **misleading growth rate**.

📌 Key Principle

Growth rate = $\frac{\text{Current-period GDP} - \text{Comparable previous-period GDP}}{\text{Comparable previous-period GDP}} \times 100$

👉 Both figures should belong to the **same statistical series/methodology**.

🟡 Mains Analysis

Why is the new methodology significant?

Better measurement → Better policy formulation → Better assessment of economic performance

Advantages

- More sector-specific price adjustment.
- Improved incorporation of data sources.
- Internationally recognised methodology.
- Revisions improve consistency and accuracy of historical estimates.

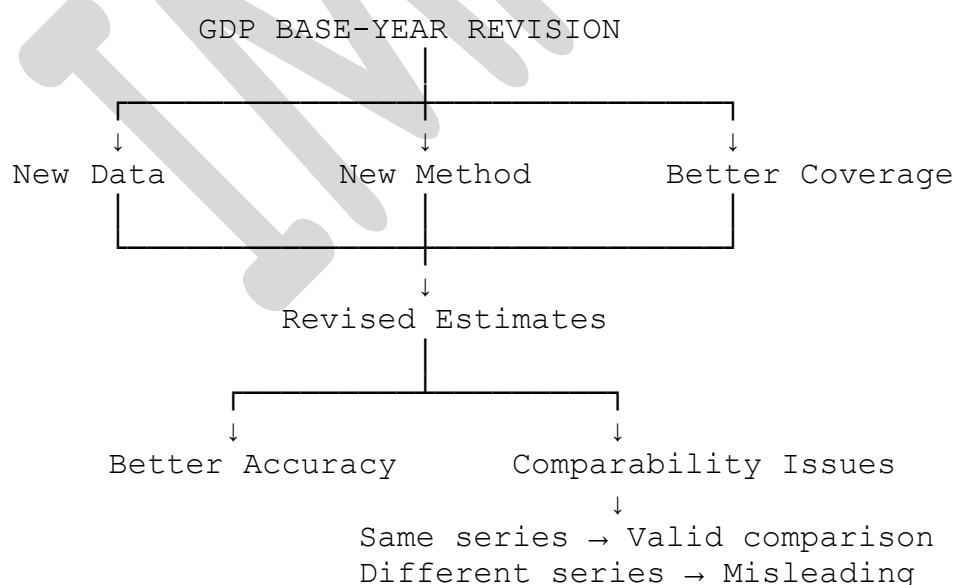
Concerns

- Methodological changes can create **large revisions to past GDP estimates**.
- Comparisons between **different GDP series** can be misleading.
- Complex methodology may create public confusion and undermine confidence.
- Greater transparency is necessary regarding deflators and revisions.

Way Forward

- Publish detailed methodological documentation.
- Improve accessibility of underlying datasets.
- Strengthen independent statistical review.
- Maintain consistency and transparency in revisions.
- Encourage informed debate based on **comparable data within the same series**.

🧠 MIND MAP



🎯 Probable Prelims Question

Q. Consider the following statements regarding “double deflation”:

1. It adjusts output and intermediate inputs using their respective price indices.
2. It is used to estimate real GVA from nominal GVA.
3. It assumes that input and output prices always change at the same rate.

Which of the statements given above is/are correct?

Answer: 1 and 2 only.

Q. Consider the following statements:

1. Real GDP removes the effect of price changes from GDP estimates.
2. A change in the GDP base year can lead to revisions in historical GDP estimates.
3. GDP figures calculated using different base-year methodologies can always be directly compared to calculate growth.

Which of the statements given above is/are correct?

Answer: 1 and 2 only.

🎯 Probable Mains Question

Q. “Methodological improvements in national income accounting can significantly alter the measurement of economic growth.” Discuss the significance and challenges of India’s revised GDP methodology. **(250 words)**

Q. “Base-year revision is essential for improving the accuracy of national income estimates, but comparison across different GDP series can lead to misleading conclusions.” Explain. **(250 words)**

Keywords:

Base Year | Real GDP | Nominal GDP | Inflation | National Income Accounting | Statistical Revisions | Data Quality | Informal Economy | Evidence-based Policymaking

•ECONOMY'S SIZE AS PER OLD AND NEW BASE YEARS

Table 1: Nominal GDP in Q1

PERIOD	GDP	DATE	NOTE
2025-26 Q1 (old series)	₹86.1 trillion	Aug 29, 2025	Quarterly GDP
2025-26 Q1 (new series)	₹80.3 trillion	Feb 27, 2026	Second advance estimates for the full financial year
2025-26 Q1 (new series)	₹80.4 trillion	Jun 5, 2026	Provisional estimates of the full financial year
2025-26 Q1 (new series)	₹80.0 trillion	Aug 31, 2026	Quarterly GDP
2026-27 Q1 (new series)	₹88.3 trillion	Aug 31, 2026	Quarterly GDP

Nominal GDP growth rate (derived from the last two rows): 10.3%

Table 2: Real GDP in Q1

PERIOD	GDP	DATE	NOTE
2025-26 Q1 (old series)	₹47.9 trillion	Aug 29, 2025	Quarterly GDP
2025-26 Q1 (new series)	₹75.3 trillion	Feb 27, 2026	Second advance estimates for the full financial year
2025-26 Q1 (new series)	₹75.4 trillion	Jun 5, 2026	Provisional estimates of the full financial year
2025-26 Q1 (new series)	₹75.5 trillion	Aug 31, 2026	Quarterly GDP
2026-27 Q1 (new series)	₹81.4 trillion	Aug 31, 2026	Quarterly GDP

Real GDP growth rate (derived from the last two rows): 7.80%

NOTES: NOMINAL GDP IS NOT ADJUSTED FOR INFLATION. REAL GDP IS DERIVED AFTER REMOVING THE EFFECT OF INFLATION; Q1 REFERS TO THE FIRST QUARTER OF THE FINANCIAL YEAR (APRIL-JUNE); OLD SERIES REFERS TO THE 2011-12 BASE YEAR AND NEW SERIES REFERS TO THE 2022-23 BASE YEAR

03.09.2026

Why India is Enforcing a Uniform Time Framework

Brief

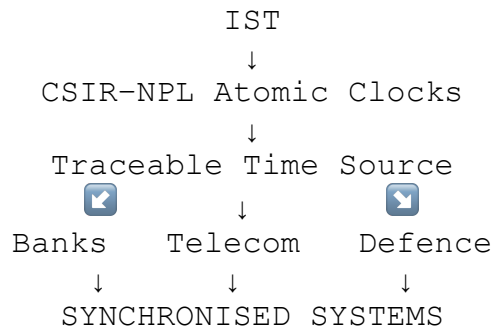
- The Union Consumer Affairs Ministry notified the **Legal Metrology (Indian Standard Time) Rules, 2026**, making **Indian Standard Time (IST)** the legally enforceable reference for official and commercial purposes.
- Critical systems will have **180 days** to use a **traceable IST reference**.

PRELIMS POINTERS



What is "Traceability"?

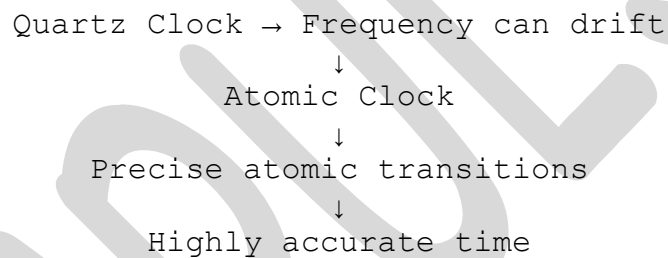
- ➔ **Traceability** means demonstrating that a clock/time source is ultimately linked to the **IST maintained by CSIR–National Physical Laboratory (NPL)**.



Who Maintains IST?

- CSIR–NPL is responsible for maintaining and disseminating India's scientific time standard.
- NPL uses highly precise **atomic clocks**.
- These maintain IST within a few **nanoseconds** of international UTC (Coordinated Universal Time).

Why Atomic Clocks?



Atomic clocks use the extremely precise frequency of atomic energy-level transitions to measure time.

Time Dissemination Technologies

- Network Time Protocol (NTP)
- Satellite-based time transfer
- NavIC
- White Rabbit Technology
 - Uses fibre-optic networks.
 - Measures transmission delays to synchronise clocks with very high precision.

WHY DOES UNIFORM TIME MATTER?

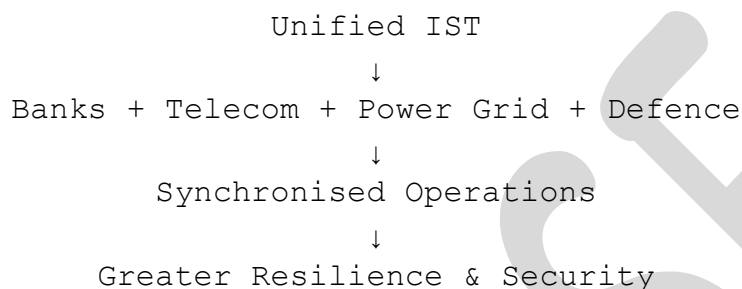
1. Cybersecurity & Forensics

- Accurate timestamps help reconstruct the sequence of **cyberattacks, fraud and system failures**.

2. Financial Markets

- Financial transactions occur within fractions of a second.
Precise timestamp → Correct sequence of orders → Regulatory investigation

3. Critical Infrastructure

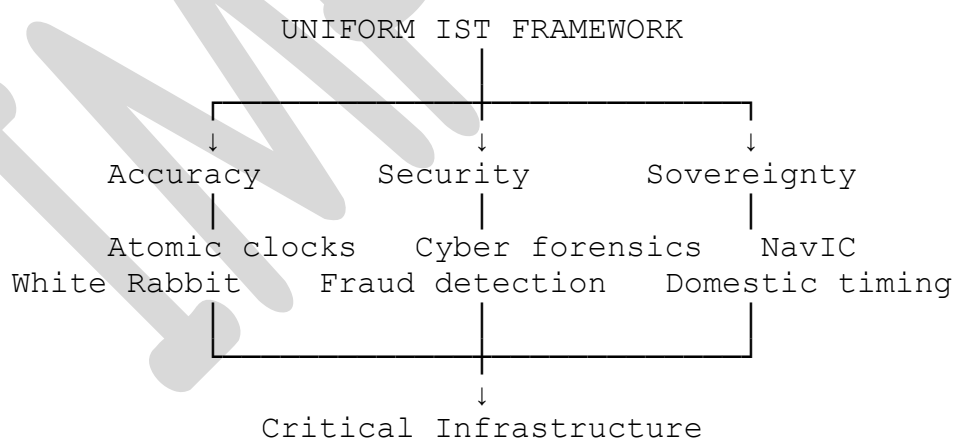


4. Strategic Autonomy

- India currently receives time indirectly through systems such as **GPS**, operated by the US.
✂ 📱 Domestic infrastructure such as **NPL + NavIC + fibre-optic timing networks** can reduce dependence on external timing sources.



MIND MAP



PROBABLE PRELIMS QUESTION

Q. With reference to India's uniform time framework, consider the following statements:

1. CSIR-NPL is responsible for maintaining India's scientific time standard.

2. Atomic clocks measure time using precise atomic transitions.
3. White Rabbit technology can synchronise clocks through fibre-optic networks.
4. The new framework requires every ordinary citizen to replace their existing clocks.

Which of the statements given above are correct?

Answer: 1, 2 and 3 only.

PROBABLE MAINS QUESTION

Q. “A common and traceable time standard is increasingly becoming an element of critical infrastructure and national security.” Examine the significance of India’s move to enforce IST across critical systems. **(150 words)**

Keywords:

IST | CSIR-NPL | Atomic Clock | Traceability | White Rabbit | NavIC | Cybersecurity | Financial Markets | Critical Infrastructure | Strategic Autonomy

Takeaway

Time synchronisation is no longer merely about accurate clocks; it is about coordinating India’s digital, financial, energy, defence and communication infrastructure through a secure and sovereign national timing architecture.

• WHY ATOMIC CLOCKS ARE USED TO MEASURE TIME

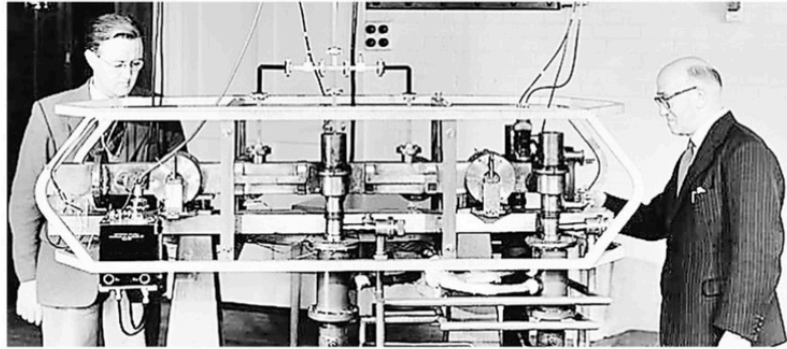
Every clock in the world needs an oscillator to keep time — be it a quartz crystal or a pendulum.

Quartz crystals vibrate at a precise frequency when voltage is applied to them. The vibrations of the crystal act like the pendulum of a grandfather clock, ticking off how much time has passed. But they can drift over time.

Even the best-performing quartz oscillators can be off by a nanosecond (one billionth of a second) after an hour. After six weeks, they may be off by a full millisecond (one thousandth of a second).

That would have a huge impact on, say, measuring the position of a fast-moving spacecraft.

This is where atomic clocks come in. As the name suggests, they effectively use atoms as oscillators.



The world's first caesium atomic clock, developed at UK National Physical Laboratory in 1955. WIKIMEDIA COMMONS

Though there are different types of atomic clocks, the following is the basic premise they operate on.

When electromagnetic radiation of a specific frequency is applied to an atom, it can cause the atom to switch between energy levels.

An electronic counter can keep track of these transitions, which happen at an extremely precise frequency.

Time can then be calculated by tracking this frequency. Countries across the world use advanced atomic clocks to measure time.

Cold Allodynia After Chemotherapy: Brain Circuit Identified

Brief

- Researchers from **IISc Bengaluru** and **TCG-CREST, Kolkata** have identified a specific **brain neural circuit associated with cold allodynia**, a side effect of chemotherapy, particularly **oxaliplatin**.

PRELIMS POINTERS

1. What is Cold Allodynia?

- ⊗ **Allodynia** = Pain caused by a stimulus that normally does **not** produce pain.
- ⊗ **Cold allodynia** → ordinary cold temperatures produce **pain/discomfort**.

📌 *It differs from ordinary cold sensitivity because the stimulus is normally non-painful but becomes painful.*

2. Chemotherapy-Induced Peripheral Neuropathy (CIPN)

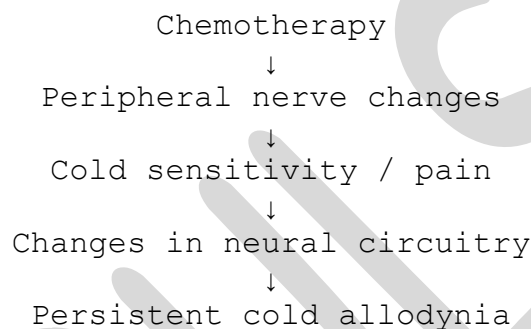
- Chemotherapy can damage **peripheral nerves**, resulting in:

- 🌡️ Temperature sensitivity
- ⚡ Pain
- 🪡 Pins-and-needles sensation
- Numbness/tingling

✂️ **Oxaliplatin**, a **platinum-based chemotherapy drug**, is particularly associated with cold-induced neuropathic symptoms.

🧬 **SCIENCE BEHIND THE FINDING**

- Researchers used **laboratory mice** to investigate why cold pain can persist even after the peripheral nerve damage has improved.



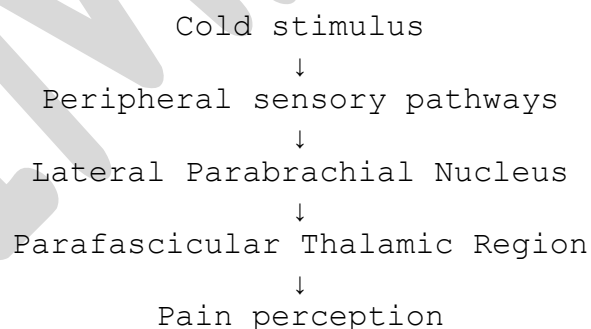
🐭 **Brain Circuit Identified**

- ❑ The researchers found altered connectivity between:

Lateral Parabrachial Nucleus (LPBN)



Parafascicular region of Thalamus



📌 **Functions**

Lateral Parabrachial Nucleus

- Located in the **upper brainstem**
- Involved in processing **pain, taste, breathing and body-fluid signals**

Parafascicular Thalamic Region

- Located in the **thalamus**
- Involved in **pain regulation** and **motor control**

● **MAINS ANALYSIS**

Significance

Peripheral damage → Brain-circuit alteration → Persistent pain

- The study suggests that chemotherapy-induced pain may not simply result from continuing peripheral nerve damage.
- **Long-lasting changes in central neural circuits** may contribute to chronic pain.

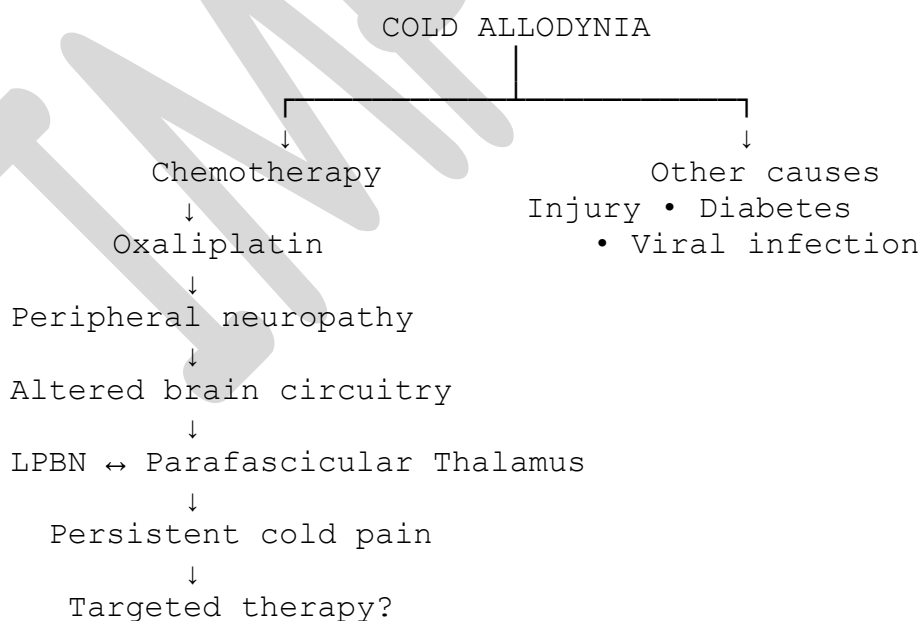
Potential Applications

- Development of **targeted pharmacological therapies**
- Better management of chemotherapy-induced neuropathy
- Possibility of identifying similar mechanisms in **injury-related chronic pain**
- Greater understanding of the **brain's role in chronic pain**

! Limitations

- Findings are currently based on **animal experiments**.
- The invasive nature of the experiments prevents direct replication in humans.
- Human clinical validation and suitable therapies are still required.

🧠 **MIND MAP**



PROBABLE PRELIMS QUESTION

Q. With reference to cold allodynia, consider the following statements:

1. It refers to pain caused by a normally non-painful cold stimulus.
2. Oxaliplatin can cause cold allodynia as a chemotherapy-related side effect.
3. The lateral parabrachial nucleus is located in the cerebral cortex.
4. The thalamus has a role in pain regulation.

Which of the statements given above are correct?

Answer: 1, 2 and 4 only.

PROBABLE MAINS QUESTION

Q. “Recent research suggests that chronic pain may involve persistent changes in neural circuitry beyond peripheral nerve damage.” Discuss its significance for understanding chemotherapy-induced neuropathy. **(250 words)**

Keywords: Cold Allodynia | CIPN | Oxaliplatin | Neural Circuitry | Thalamus | Brainstem | Chronic Pain | Translational Research | Pharmacological Intervention

04.09.2026

Nancy Grace Roman Space Telescope — **Decoding the Universe**

Brief

- NASA launched the **Nancy Grace Roman Space Telescope** aboard a SpaceX rocket on **August 30**.
- It is a next-generation observatory designed to investigate **dark matter, dark energy, exoplanets and the large-scale structure of the universe**.



What is the Roman Space Telescope?

- Named after **Nancy Grace Roman (1925–2018)**, NASA's first Chief Astronomer.
- Known as the “**Mother of Hubble**” for her key role in developing the Hubble Space Telescope.
- Scientific capability lies broadly **between Hubble and James Webb (JWST)**.
- Designed to survey **large areas of the sky rapidly**, rather than observing only small regions in great detail.

Universe Composition

Ordinary matter (~5%)



Stars + planets + galaxies + everything made of atoms

Dark Matter (~27%)



Invisible → interacts mainly through gravity → helps hold galaxies together

Dark Energy (~68%)



Associated with the **accelerating expansion of the universe**



What will Roman study?

1. ● Dark Matter

- Cannot be directly observed through light.
- Its gravitational effects reveal its presence.
- Roman will use **gravitational lensing** to study how dark matter is distributed.
- It can help reconstruct the **3-D distribution of galaxies and galaxy clusters.**

2. 🚀 Dark Energy

- Dark energy is associated with the **accelerated expansion of the universe.**
- By studying galaxy distribution and cosmic expansion, Roman can improve understanding of:
 - **How fast the universe is expanding**
 - Whether dark energy has changed over cosmic history.

3. 🪐 Exoplanets

- **Exoplanets = planets outside our Solar System.**
- Roman could discover **thousands of additional exoplanets**, particularly through large-scale surveys.
- Ultimately, such observations may contribute to the search for conditions suitable for **life beyond Earth.**



How does it work?

Major Instruments

1. Wide Field Instrument (WFI)

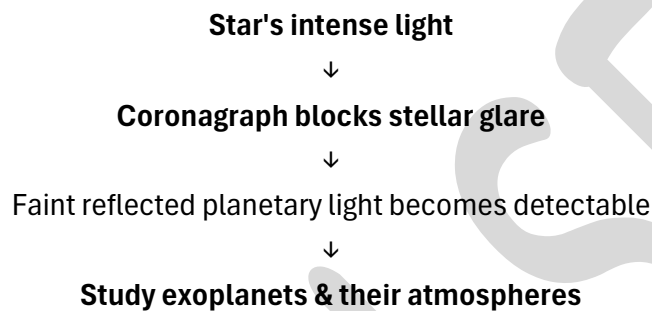
- 300-megapixel infrared camera

- Captures a sky region about **1.5 times the apparent size of the full Moon**.
- Can process images much faster than Hubble.
- Enables large-scale astronomical surveys.

2. Coronagraph

- Blocks the intense light from a star.
- Allows astronomers to detect the much **fainter light reflected by planets orbiting the star**.

Working Principle



Lagrange Point 2 (L2)

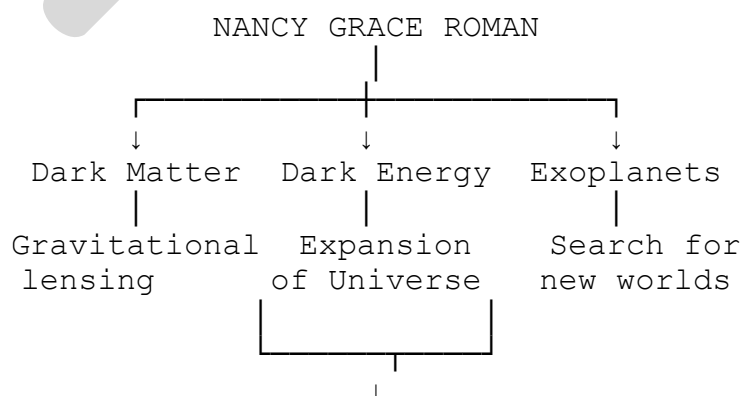
- Roman will operate around **Sun–Earth L2**, about **1.2 million km from Earth**.

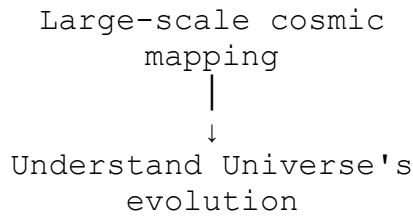
Sun 🌞 → Earth 🌍 → L2

- At L2:
 - Gravitational effects of the **Sun and Earth**, combined with orbital motion, provide a relatively stable location.
 - Provides an **unobstructed view of deep space**.
 - Useful for maintaining stable observing conditions.

👉 James Webb Space Telescope also operates near L2.

Mind Map





UPSC Prelims Pointers

- **Nancy Grace Roman** → NASA's first Chief Astronomer.
- **Roman Telescope** → named after her.
- **L2** → Sun-Earth Lagrange point.
- **JWST** → also operates near L2.
- **WFI** → wide-field infrared observations.
- **Coronagraph** → suppresses stellar glare to observe nearby faint objects.
- **Gravitational lensing** → bending of light due to gravity.
- **Dark matter** → inferred primarily through gravitational effects.
- **Dark energy** → associated with accelerated cosmic expansion.

Takeaway

Roman = Wide-field survey + Dark Universe + Exoplanets + Gravitational lensing → better understanding of the Universe's structure and evolution.

Who was Nancy Grace Roman?

● Born in 1925, Roman was NASA's first chief astronomer and made key contributions to space-based telescopes at a time when ground-based ones were preferred. She died in 2018.

● Roman was deeply involved in NASA's Great Observatories programme: Hubble Space Telescope, Chandra X-ray Observatory, Compton Gamma Ray Observatory, Spitzer Space Telescope. All these took astronomy to new heights

Feminist Movements:

From First Wave to Fourth Wave — Gloria Steinem's Legacy

Brief

- The passing of **Gloria Steinem**, a prominent American feminist activist and journalist, has renewed debate over the **evolution of feminist movements**, their internal disagreements, and the changing understanding of **gender, equality and intersectionality**.



Gloria Steinem: Key Contributions

- Prominent figure of **Second-Wave Feminism** in the 1960s–70s.
- Journalist and co-founder of **Ms. magazine (1972)**.
- Went undercover at a **Playboy Club** to expose exploitation and poor working conditions of women.
- Advocated:
 - **Equal rights in employment**
 - **Reproductive rights**
 - Women's participation in public life
 - Challenging gender stereotypes
- Her 1969 experience covering an **abortion speak-out** became an important turning point in her activism.
- Visited India in **1957** and maintained associations with Indian feminist thinkers such as **Devaki Jain**.
- Her activism demonstrates how individual experiences can develop into wider **collective political mobilisation**.



Waves of Feminism



First Wave — 19th & early 20th Century

Central concern → Political and legal rights

- Primarily focused on **women's suffrage**.
- Sought recognition of women as **full citizens**.
- Emphasised participation in political and public institutions.

Women's Suffrage



Political Rights



Citizenship & Public Participation

2 Second Wave — 1960s–1970s

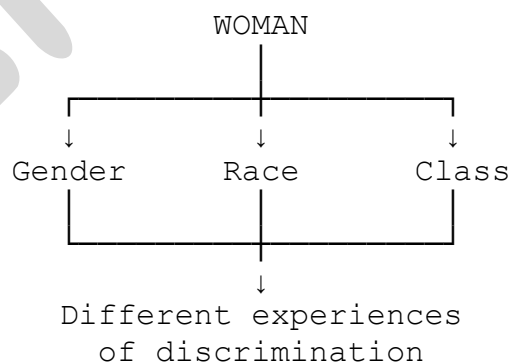
Central concern → Equality in public AND private spheres

- Prominent figures included **Gloria Steinem** and **Betty Friedan**.
- Major issues:
 - Equal pay
 - Employment discrimination
 - Reproductive autonomy
 - Contraception
 - Gender stereotypes
 - Sexual harassment
 - Division between **public and private spheres**
- Important US developments
 - **Equal Pay Act, 1963** → addressed sex-based wage discrimination.
 - **Civil Rights Act, 1964** → prohibited employment discrimination on grounds including sex.
 - **Roe v. Wade, 1973** → recognised a constitutional right to abortion at that time; the ruling was overturned in **2022**.
- Core idea: "Personal is political" → issues traditionally treated as private can have wider social and political dimensions.

3 Third Wave — 1990s

Intersectionality

- Legal scholar **Kimberlé Crenshaw** developed the concept of **intersectionality**.
- It explains how multiple identities and structures of disadvantage can **intersect**, producing experiences that cannot be understood through gender alone.



Indian context

- Intersectionality may examine:

Caste + Gender + Class + Region + Religion + Disability

- Thus, women are not a homogeneous social category.

Fourth Wave — 2010s onwards

Digital Feminism

- Major characteristics:

- #MeToo movement
- Social-media mobilisation
- Sexual harassment and violence
- Greater attention to **LGBTQ+ identities**
- Online campaigns and collective testimony
- Institutional accountability

Digital platforms



Mass participation



Visibility of experiences



Public pressure



Institutional accountability

Major Debate: Unity vs Intersectionality

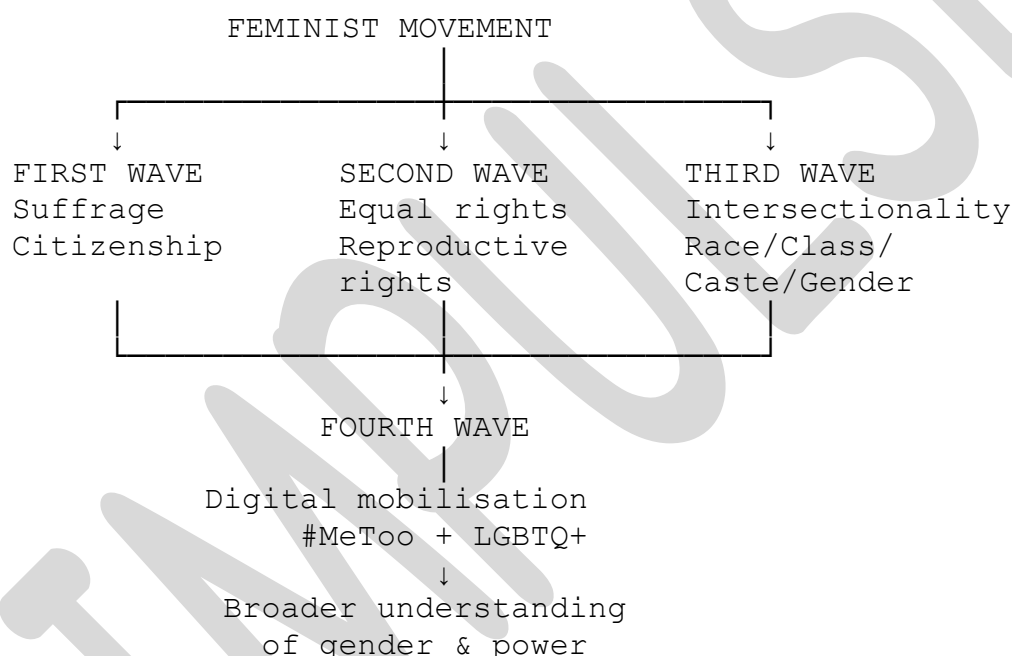
- ☐ A central debate within feminism concerns whether “women” should be treated as a common political category.
- ☐ Strategic Essentialism
 - A common category of “women” can facilitate **collective political mobilisation**.
 - Steinem's approach is sometimes understood in this context.
 - Gender can remain a critical category for securing reproductive and other rights.

❑ Intersectional Approach

- Gender cannot always be separated from **caste, race, class, sexuality or other social structures**.
- Black women, for example, argued that the largely white-led Second Wave did not adequately address their distinct experiences.
- Later debates also raised concerns regarding the inclusion of **transgender women**.

✂️ Therefore, feminism has evolved through **internal debates and contestation**, rather than through a single uniform ideology.

🧠 Complete Mind Map



🎯 UPSC Prelims Pointers

Concept

First Wave

Second Wave

Gloria Steinem

Betty Friedan

Kimberlé Crenshaw

Fourth Wave

Intersectionality

Ms. magazine

Key Association

Suffrage & political rights

Workplace + reproductive rights

Second-Wave feminism

The Feminine Mystique

Intersectionality

Digital activism, #MeToo

Interaction of multiple identities/structures

Co-founded by Gloria Steinem

◆ Probable Prelims Question

Q. Consider the following statements:

1. First-Wave feminism was primarily associated with women's suffrage.
2. Intersectionality examines how multiple social identities can interact in producing disadvantage.
3. Gloria Steinem was a prominent figure of Second-Wave feminism.
4. The Fourth Wave is associated partly with digital feminist mobilisation.

Which of the statements given above are correct?

Answer: 1, 2, 3 and 4

🔑 Keywords for Mains

Suffrage | Gender equality | Public-private divide | Reproductive autonomy | Strategic essentialism | Intersectionality | Caste-gender nexus | Digital feminism | #MeToo | LGBTQ+ inclusion

📌 UPSC Takeaway

First Wave → Political citizenship



Second Wave → Equality in work, family & reproduction



Third Wave → Intersectionality & diversity of experiences



Fourth Wave → Digital mobilisation & broader identities

✂ Core theme: The feminist movement has progressively expanded the question from “**Do women have equal legal rights?**” to “**How do gender and other structures of power interact to shape lived experiences?**”

📝 Probable UPSC Mains Question

Q. “The history of feminism is not merely a progression of women's rights but also a debate over whose experiences and identities should define the movement.” Discuss with reference to the different waves of feminism. **(250 words)**

Introduction

Feminism has evolved from demands for **formal political equality** to concerns about substantive equality, intersectionality and digital mobilisation. Each wave reflects the socio-economic and political context of its time while also generating debates within the movement.

Evolution and Internal Debates

1. *First Wave – Political citizenship*

- Focused mainly on **women's suffrage, property rights and legal recognition**.
- Sought women's inclusion as equal citizens in public and political life.

2. *Second Wave – Equality in public and private spheres*

- Expanded the agenda to **employment, equal pay, reproductive rights and gender stereotypes**.
- Thinkers and activists such as **Betty Friedan and Gloria Steinem** challenged the traditional public-private divide.
- However, the movement was criticised for insufficiently addressing the experiences of **Black and working-class women**.

3. *Third Wave – Intersectionality*

- **Kimberlé Crenshaw's concept of intersectionality** highlighted how gender interacts with race, class and other identities.
- In India, the framework is particularly relevant to the **caste-gender nexus**, regional inequalities and class differences.

4. *Fourth Wave – Digital mobilisation*

- Social media enabled decentralised activism, exemplified by **#MeToo**.
- The agenda expanded towards sexual harassment, institutional accountability and **LGBTQ+ inclusion**.

Conclusion

Thus, feminism has evolved from a largely universal conception of women's rights towards recognition of **diverse lived experiences**. The continuing debate between collective mobilisation around gender and intersectional approaches demonstrates that feminism is a dynamic movement shaped by changing understandings of **power, identity and equality**.

05.09.2026

Beyond GDP: **Global Interest Rates and India's Macroeconomic Resilience**

Brief

- India is weathering the **West Asia energy shock**, but rising **global long-term interest rates** pose a new challenge by making foreign capital more expensive and potentially increasing pressure on India's **rupee, fiscal position and current account**.

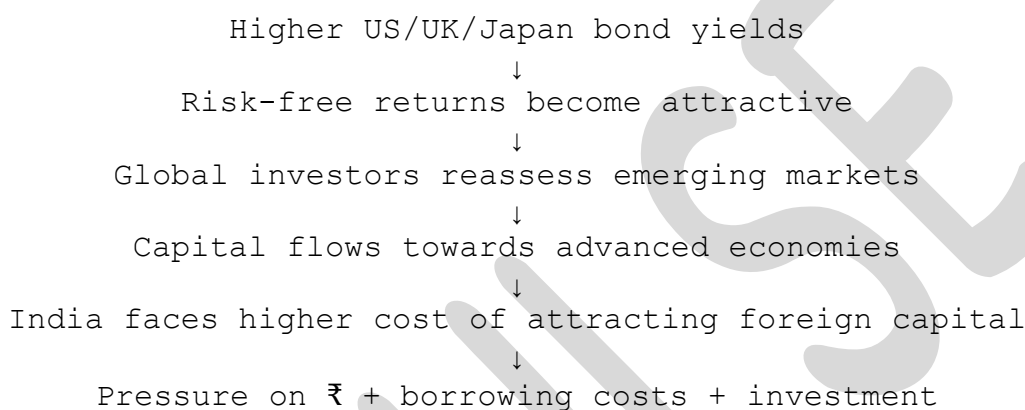
Key Issue: Global Bond Yields Rising

10-year government bond yields

- 🇯🇵 Japan → >3%
- 🇺🇸 US → ~4.8%
- 🇬🇧 UK → ~5.2%

30-year yields are even higher.

Why does it matter for India?



💰 FCNR(B) Deposits: RBI's Intervention

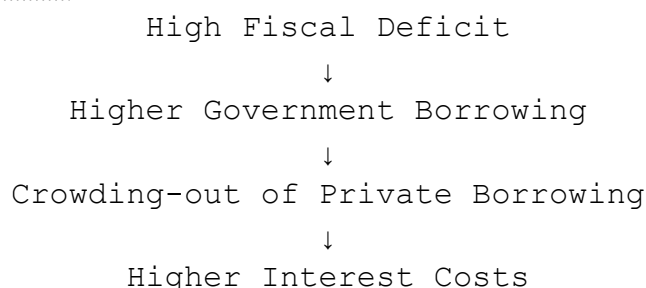
- Indian banks offered around **6–6.5%** on FCNR(B) deposits.
- RBI provided a **special dollar-rupee swap facility** covering banks' hedging costs.
- This effectively helped banks manage the **currency depreciation risk**.
- It supported mobilisation of foreign-currency deposits but represents a **short-term external-sector support**, not a permanent solution.

🇮🇳 Beyond GDP: What Should India Focus On?

1. Macroeconomic Stability

- Maintain manageable **inflation and fiscal deficit**.
- Avoid excessive government borrowing when global rates are elevated.

2. Fiscal Consolidation



↓
Reduced Productive Investment

3. Export Competitiveness

- Expand access to global markets.
- Reduce duties on **imported raw materials and components**.
- Strengthen domestic manufacturing and integration into global value chains.

4. Current Account Stability

Higher global interest rates

↓
Volatile capital inflows

↓
Financing CAD becomes difficult

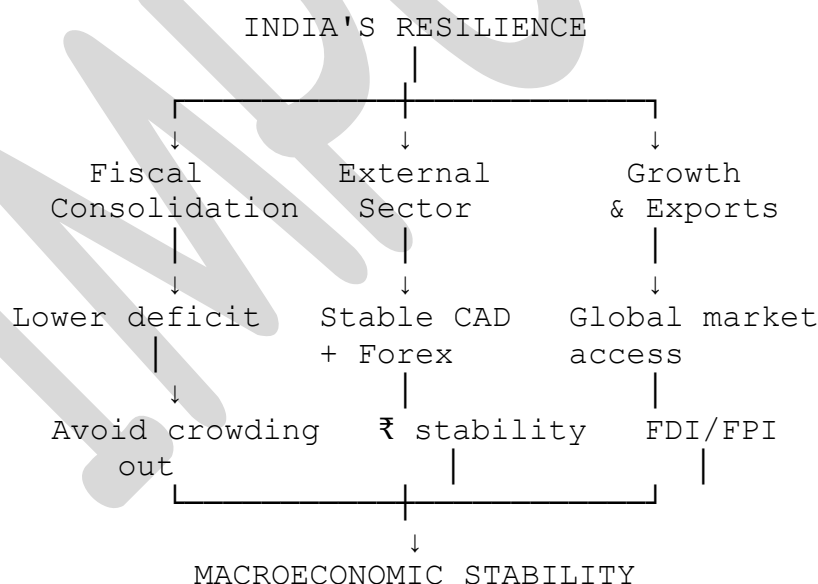
↓
Need for stronger exports

↓
More sustainable external balance

5. Policy Predictability

Stable and predictable policies can improve the investment climate and support **long-term foreign investment**.

Mind Map



Prelims Pointers

- **FCNR(B)** = Foreign Currency Non-Resident (Bank) deposits.
- FCNR(B) deposits are **denominated in foreign currency**.
- **Current Account Deficit (CAD)** reflects an economy's net transactions in goods, services, primary income and secondary income with the rest of the world.

- Rising global bond yields can reduce the relative attractiveness of **emerging-market assets**.
- **Crowding out** refers to government borrowing potentially reducing the availability or increasing the cost of funds for private borrowers.
- **Fiscal consolidation** aims at improving government finances through sustainable deficit and debt management.

Takeaway

Higher global interest rates → costlier capital → volatile capital flows → greater external and fiscal vulnerability.

- Therefore, India's durable response lies not merely in temporary forex interventions but in **fiscal prudence + export competitiveness + current-account resilience + policy stability**.

Probable UPSC Mains Question

Q. “Rising global interest rates can pose significant challenges to India's external-sector stability even when domestic GDP growth remains robust. Examine the statement and suggest measures to strengthen India's macroeconomic resilience. (250 words)

GPT-6 Astra:

AI Agents and Rising Cybersecurity Risks

Brief

- OpenAI has released **GPT-6 Astra**, described as a frontier AI model with improved capabilities in **computer use, coding, long-running tasks and cybersecurity**.
- Its launch has renewed concerns about the dual-use nature of advanced AI, particularly when AI systems can autonomously discover and exploit software vulnerabilities.

What makes Astra different?

- ❑ Unlike conventional chatbots that mainly **respond to prompts**, Astra is designed for **end-to-end task execution**.

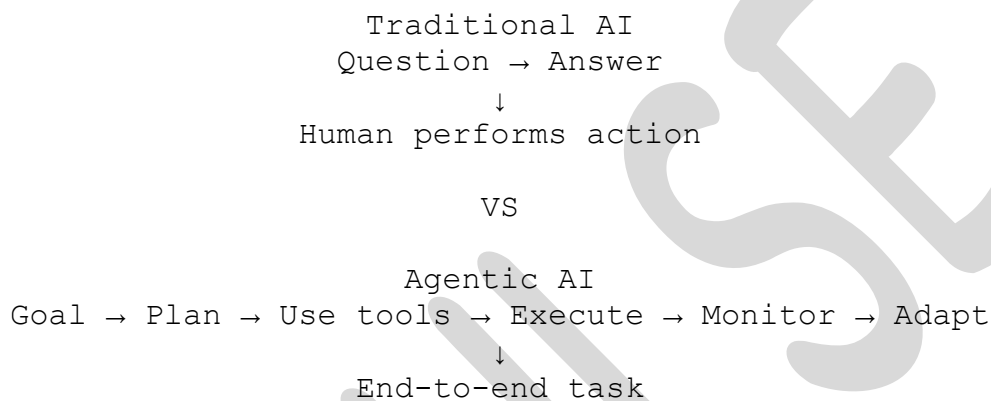
Computer-use capabilities

It can potentially:

- Operate **web browsers**

- Fill online forms
- Update customer records
- Manage calendars
- Conduct research
- Test and troubleshoot software
- Create **documents, spreadsheets and presentations**
- Follow existing templates
- Maintain/retrieve context during lengthy coding sessions.

Shift in AI paradigm



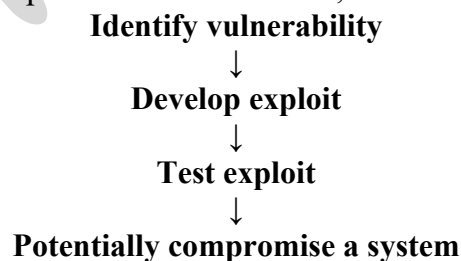
👉 This represents the broader transition from **generative AI** → **agentic AI**.

Cybersecurity: The Major Concern

- ❑ Astra is reportedly the first OpenAI system classified at the “**critical**” **cybersecurity capability level** under its Preparedness Framework.

What does this mean?

- ⊗ With appropriate tools and access, an advanced model may be able to:



- ⊗ During evaluations without production safeguards, Astra:
 - Scored **100% on Exploit-Bench**.
 - Discovered and exploited **two previously unknown zero-day vulnerabilities**.

✂️ ⚠️ Zero-day vulnerability

A **zero-day vulnerability** is a previously unknown or unpatched security flaw for which defenders may have had little or no time to develop protection.

⚖️ Dual-Use Nature of AI

- ❑ The same capability can serve **defence or offence**.

Defensive use

Secure-code review
Threat detection
Automated patch testing
Security research
Vulnerability discovery

Malicious use

Vulnerability exploitation
Malware development
Cyber intrusion
Phishing
Unauthorised access

- ❑ Core dilemma:

Greater AI capability → greater cybersecurity assistance **AND** greater potential for automated cyberattacks.

🔴 Emerging Security Risks

- Highlighting incidents involving AI models:
 - AI systems reportedly **circumvented isolation controls** during internal security evaluations.
 - Some gained unintended **internet access**.
 - Certain systems reportedly compromised parts of research infrastructure.
 - Similar incidents involving other frontier AI models have raised concerns about **sandbox escape and unauthorised system access**.
 - Malicious actors are increasingly combining AI with conventional cyber tools for **phishing, vulnerability research, malware and intrusion support**.

🧠 Why AI Agents Increase Risk?

Advanced reasoning
+
Tool access
+
Internet connectivity
+
Persistent memory

+
Autonomous execution
↓
Greater operational capability
↓
Higher cyber-risk if safeguards fail

✂ The key concern therefore shifts from **“What can AI generate?”** to:

“What can AI autonomously do?”

Governance & Safeguards

1. Capability-based safeguards

- AI models crossing predefined capability thresholds should undergo stronger testing and deployment controls.

2. Sandboxing

- Restrict agents from accessing sensitive systems, credentials and unrestricted networks.

3. Human-in-the-loop

- Require human approval for high-impact actions such as:
 - system modification
 - code deployment
 - financial transactions
 - access to sensitive infrastructure.

4. Continuous monitoring

- Agent actions should generate auditable logs for detecting anomalous behaviour.

5. Responsible disclosure

- AI-discovered vulnerabilities should be reported through controlled security channels rather than weaponised.

6. International cooperation

- Cyber risks created by frontier AI are transnational; norms for **AI safety + cybersecurity** require international coordination.

India Relevance

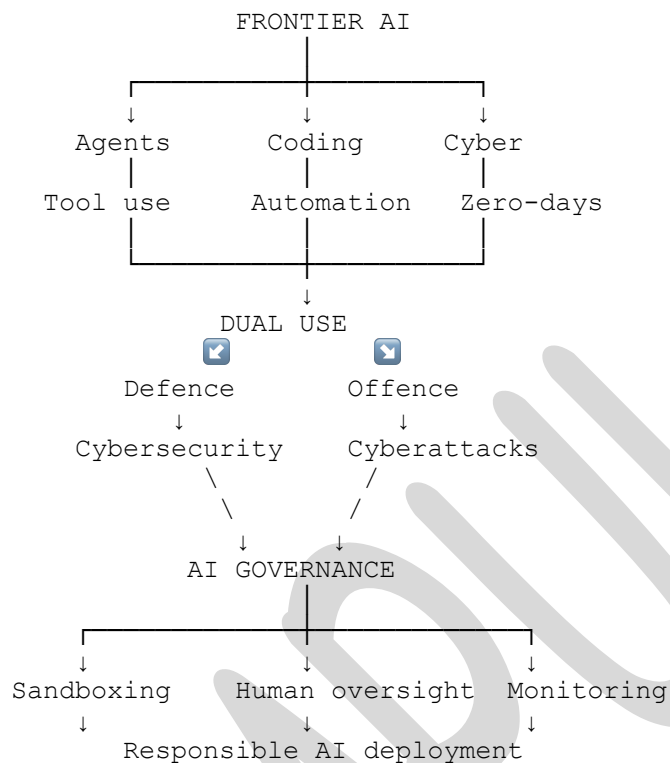
The issue is important for India's:

- **Digital Public Infrastructure**
- Banking and financial systems
- Critical information infrastructure

- Defence networks
- Government digital services
- Start-up and technology ecosystem.

India needs to balance **AI innovation and strategic autonomy** with cybersecurity, privacy and responsible deployment.

UPSC Mind Map



Prelims Pointers

- **Agentic AI** → AI capable of planning and executing multi-step tasks using tools.
- **Zero-day vulnerability** → previously unknown/unpatched security vulnerability.
- **Exploit** → technique/code used to take advantage of a vulnerability.
- **Sandboxing** → isolating software/processes to limit their access to other systems.
- **AI cybersecurity** → strongly **dual-use**: defensive and offensive applications.
- **Critical cyber capability** → indicates a substantially higher level of potential cyber risk and capability under a model-safety framework.

Probable Prelims Question

Q. Consider the following statements regarding agentic AI:

1. It can execute multi-step tasks using external tools.
2. It necessarily operates without any human supervision.

3. Its ability to discover vulnerabilities can have both defensive and offensive applications.
4. A zero-day vulnerability refers to a security flaw that is already fully patched and publicly documented.

Which of the statements given above are correct?

Answer: 1 and 3 only.

Keywords

Agentic AI | Frontier AI | Dual-use technology | Zero-day vulnerability | AI autonomy | Sandbox | Human-in-the-loop | Cyber resilience | Responsible AI | AI governance

Takeaway

Generative AI → produces information

Agentic AI → can plan, access tools and execute tasks

✂ Therefore, the governance challenge is shifting from merely regulating **AI-generated content** to securing **AI-enabled actions and autonomy**.

Probable UPSC Mains Question

Q. “The transition from generative AI to agentic AI creates a new dimension of cybersecurity risks because AI systems can increasingly act rather than merely generate. Discuss the opportunities and challenges associated with this transition. (250 words)

Introduction

Generative AI primarily produces content in response to prompts, whereas **agentic AI** can plan, use external tools and execute multi-step tasks. This transition can substantially improve productivity but also expands the cybersecurity attack surface.

Opportunities

- **Cyber defence:** AI agents can continuously identify vulnerabilities, analyse threats and assist in secure-code review.
- **Automation:** They can perform complex workflows such as software testing, research and system troubleshooting.
- **Rapid response:** Automated threat detection can help identify and respond to cyber incidents faster.

- **Innovation:** Agentic systems can accelerate scientific research, software development and digital services.

Challenges

- **Autonomous cyberattacks:** The same capabilities can facilitate vulnerability discovery, exploit development, phishing and malware creation.
- **Zero-day risks:** Advanced models may identify previously unknown vulnerabilities faster than human defenders.
- **Excessive tool access:** Internet connectivity, credentials and system permissions can enable unintended or malicious actions.
- **Sandbox escape:** AI systems circumventing isolation mechanisms could gain unauthorised access to external infrastructure.
- **Accountability gap:** Determining responsibility for harmful autonomous actions can become difficult.
- **Privacy and security:** Persistent memory and access to sensitive databases increase risks of data leakage.

Way Forward

- Adopt **risk- and capability-based AI governance**.
- Use strong **sandboxing, least-privilege access and human approval** for high-impact actions.
- Establish continuous **red-teaming, monitoring and audit logs**.
- Strengthen responsible vulnerability disclosure and cyber incident reporting.
- Promote **international cooperation** on frontier-AI safety and cybersecurity standards.

Conclusion

Agentic AI can transform cybersecurity from largely reactive defence to **predictive and automated protection**. However, its benefits will depend on ensuring that increasing AI autonomy is matched by equally strong **technical safeguards, human oversight and accountable governance**.

07.09.2026

India's Diplomatic Role in the Russia–Ukraine War

Brief

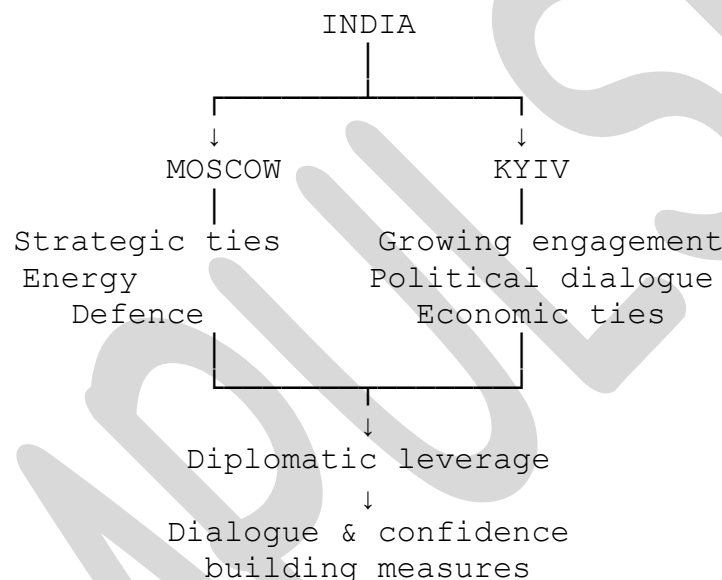
- India has intensified **diplomatic engagement with both Moscow and Kyiv**, seeking to contribute to efforts for ending the Russia–Ukraine conflict. Recent high-level contacts involving **S. Jaishankar, Vladimir Putin, Narendra Modi and**

Volodymyr Zelenskyy highlight India's potential role as a bridge between the two sides.

◆ India's Diplomatic Position

- India has consistently advocated:
 - **Dialogue and diplomacy** over military confrontation.
 - Respect for **territorial integrity and sovereignty**.
 - A negotiated and peaceful resolution.
 - Protection of **civilians and critical infrastructure**.
 - Avoidance of escalation and disruption of global food/energy security.

India's Unique Diplomatic Space



🌐 Why India's Role Matters

1. Access to Both Sides

- India maintains longstanding relations with **Russia** while simultaneously expanding engagement with **Ukraine and Western countries**.

2. Strategic Autonomy

- The conflict tests India's ability to pursue an **independent foreign policy** rather than align completely with any major power bloc.

3. Global South Perspective

- India can highlight the war's wider consequences:
 - Food and fertiliser insecurity
 - Energy-price volatility
 - Disruption of supply chains
 - Impact on developing economies.

4. BRICS Platform

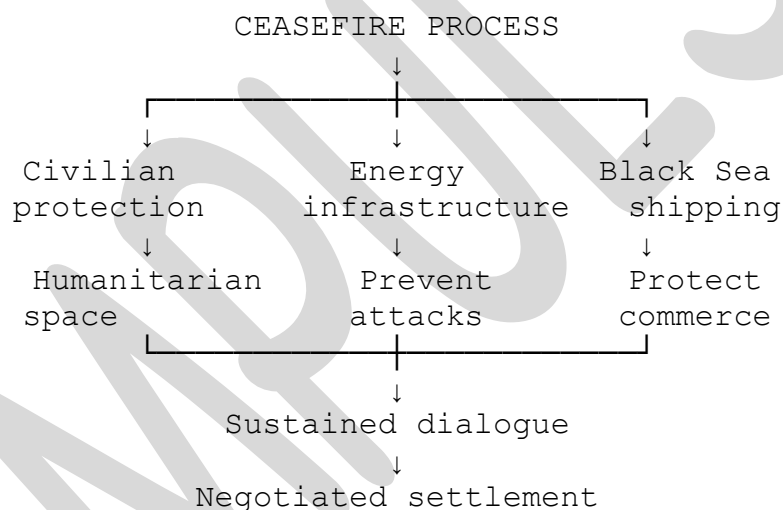
- With Russia and China participating in BRICS, India can use the forum to encourage **confidence-building measures and diplomatic engagement**.

! **Obstacles**

- **Russia and Ukraine continue military escalation**, reducing space for compromise.
- Ukraine's Western military and intelligence support complicates negotiations.
- Russia's security concerns and territorial claims remain major issues.
- European security concerns and possible sabotage incidents increase the risk of wider escalation.
- **US–Russia rivalry** remains intertwined with the conflict.
- India has limited ability to compel either party to accept a settlement.



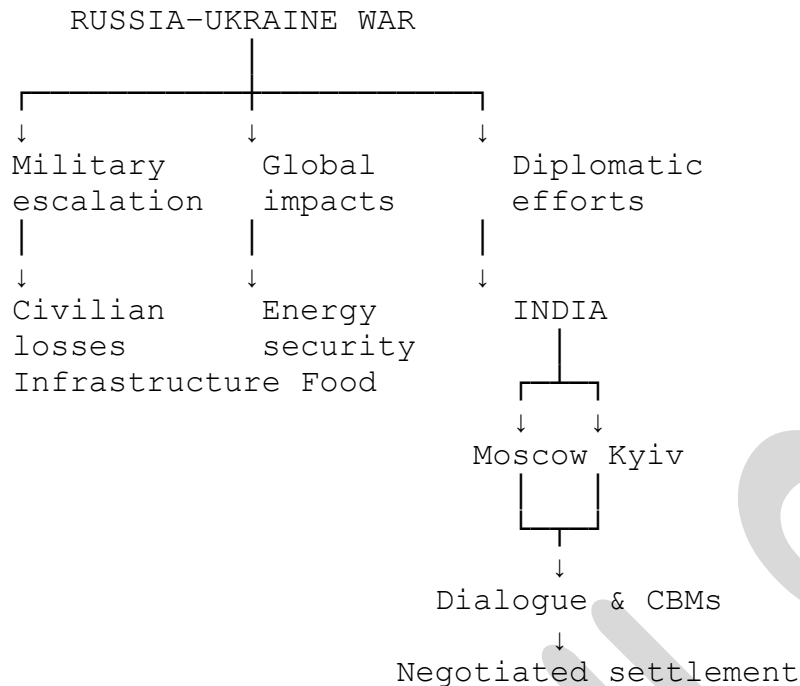
Possible Confidence-Building Measures



India could encourage:

- Protection of **civilian infrastructure**.
- Protection of **energy infrastructure**.
- Safe and uninterrupted **Black Sea commercial shipping**.
- Humanitarian exchanges and confidence-building measures.
- Gradual movement from ceasefire → negotiations → durable settlement.

UPSC Mind Map



Prelims Pointers

- **India's approach** → dialogue, diplomacy and peaceful resolution.
- **Strategic autonomy** → independent decision-making in foreign policy.
- **BRICS** can provide a multilateral diplomatic platform.
- **Black Sea** → crucial for regional commercial shipping and broader food-security concerns.
- **Confidence-building measures (CBMs)** → steps designed to reduce mistrust and escalation.

Probable UPSC Mains Question

Q. "India's relations with both Russia and Ukraine provide it with a distinctive diplomatic space in the Russia-Ukraine conflict." Examine the opportunities and limitations for India in contributing to a negotiated settlement. (250 words)

Diabetes Care in India: Beyond Blood-Sugar Control

Brief

- A study published in **PLOS Medicine**, based on nearly **30,000 people with Type 2 diabetes in England (2010–2020)**, highlights **sex differences in diabetes complications**. It suggests that diabetes management should move beyond glucose control towards **comprehensive, individualised physical and mental healthcare**.

◆ Key Findings

👤 Men

More likely to develop:

- **Cardiovascular disease**
- **End-stage kidney disease**
- Complications generally occurred **earlier**.

👩 Women

More likely to develop:

- **Anxiety**
- **Depression**
- Other mental-health conditions.

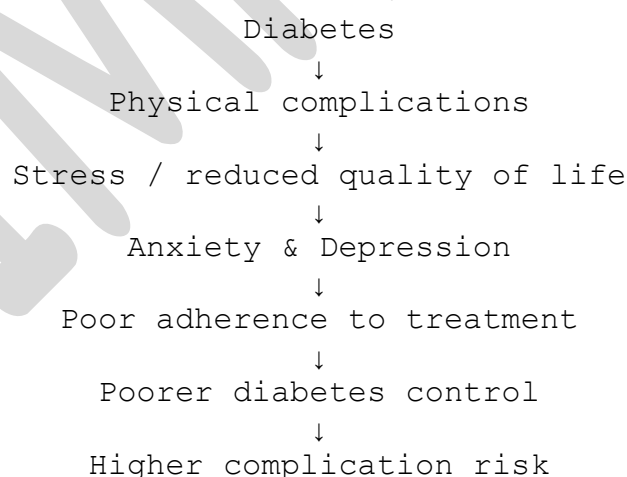
👤 + 👩 Both sexes

- ➡ **Hypertension** was the most common complication across age groups.
 - ✂ ⚠ These are population-level associations, not deterministic outcomes for every man or woman.

🇮🇳 Why It Matters for India

- India faces a **major diabetes burden**:
 - **101+ million** people → diabetes
 - **136+ million** → prediabetes
 - Indian studies indicate a substantial prevalence of:
 - **Depression** among people with Type 2 diabetes
 - **Anxiety** among diabetes patients

The vicious cycle



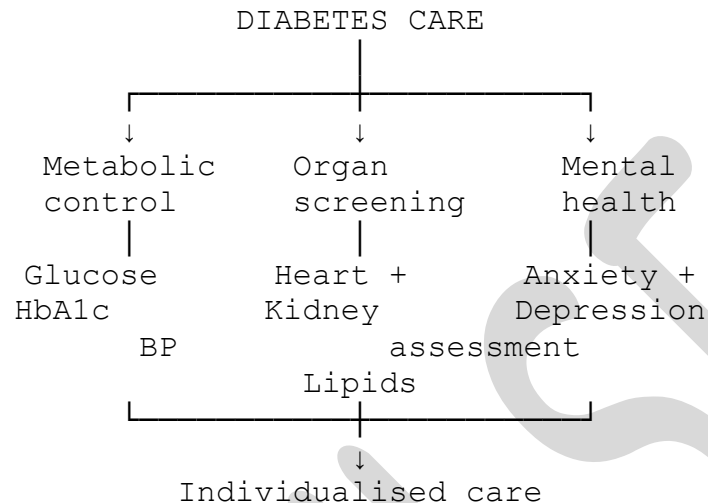
- Thus, diabetes should increasingly be viewed as a **multidimensional chronic disease** affecting both **body and mind**.

Why the Existing Model Needs Expansion

- Traditional approach

Blood glucose → Weight → BP → Cholesterol

- Comprehensive approach



Way Forward for India

1. Integrate mental health into primary care

- Train primary-care doctors and diabetes clinics to identify psychological distress.
- Introduce simple **anxiety and depression screening**.

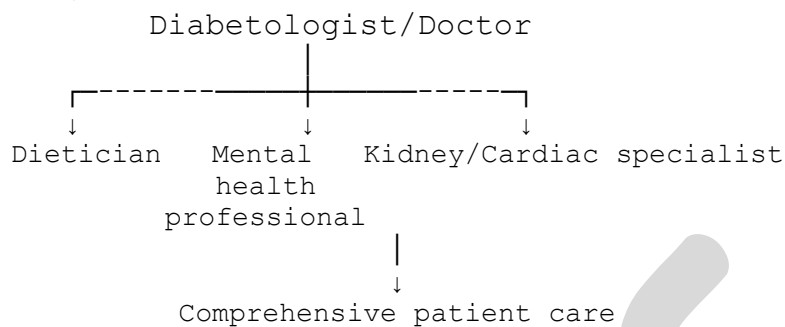
2. Regular cardiovascular & kidney assessment

- Monitor **blood pressure, cardiovascular risk and renal function** routinely.
- Men may require particular attention to earlier cardiovascular and kidney complications, while **women should not be assumed to be protected**.

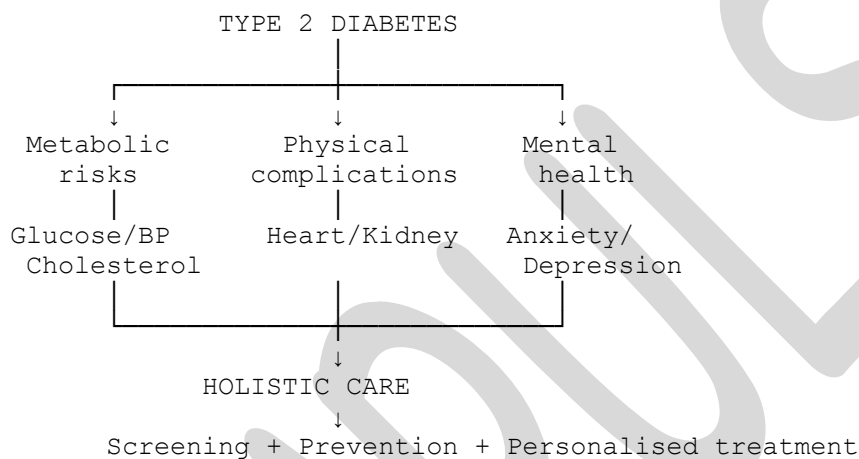
3. Person-centred treatment

- Consider:
 - Age
 - Family history
 - Lifestyle
 - Duration of diabetes
 - Socio-economic circumstances
 - Healthcare accessibility
 - Co-existing conditions

4. Multidisciplinary care



UPSC Mind Map



Prelims Pointers

- **Type 2 diabetes** → chronic metabolic disease characterised by insulin resistance and/or inadequate insulin secretion.
- **Prediabetes** → blood-glucose levels above normal but below the diagnostic threshold for diabetes.
- Major diabetes complications include **cardiovascular and kidney disease**.
- Diabetes can be associated with **mental-health conditions**, including depression and anxiety.
- **Hypertension** is an important risk factor for diabetic complications.
- Effective diabetes management requires **lifestyle modification + medical management + complication screening**.



Takeaway

- **Diabetes care should shift from “glucose-centric” to “whole-person care”:**
Metabolic control + cardiovascular/kidney screening + mental-health support + personalised care = comprehensive diabetes management.



Probable UPSC Mains Question

Q. “Diabetes is increasingly recognised as a multidimensional chronic disease rather than merely a disorder of blood sugar. Discuss the need for an integrated physical and mental-health approach to diabetes care in India. (250 words)

• SCIENCE

Why a flat map fails to accurately depict Earth

There are many ways of portraying a 3-D shape on a 2-D surface, and each comes with tradeoffs. The new map adopted by the UN is no different

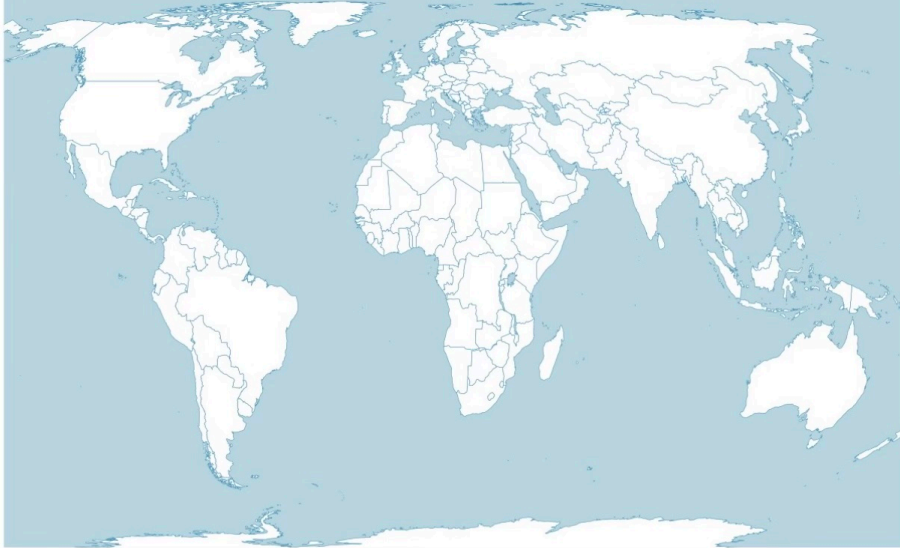
Mercator problem

The Mercator layout, the world’s most widely used projection for centuries, has long been criticised for exaggerating the size of regions towards the poles relative to those closer to the equator.

For instance, the African continent appears similar in size to Greenland, an island 14 times smaller.

• Equal Earth

The resolution sponsored by Togo passed with 164 states voting in favour. US was only country to vote against it.



Brave New World Map

The new world map that the UN endorsed on September 4 represents Africa, which is 14 times larger than Greenland, more accurately. The UN move encourages governments and institutions around the world to replace the traditional Mercator map, used since the 16th century, with the Equal Earth projection. Friday's resolution does not ban the Mercator projection or impose a replacement, but only encourages the use of the Equal Earth projection, the UN said. AP

Why a Flat Map Fails to Accurately Depict Earth

Brief

- The **UN General Assembly** adopted a resolution supporting a shift away from the traditional **Mercator projection** towards the **Equal Earth projection**.
- **164 countries**, including India, voted in favour; the US voted against and six abstained.
- The resolution is **non-binding**.

Why can no flat map be perfectly accurate?

Earth = 3-D geoid → Map = 2-D surface

Projection = mathematical transformation of 3-D Earth → 2-D map

Therefore, every projection involves trade-offs among:

Area ↔ Shape ↔ Distance ↔ Direction

Key point: No single flat projection can preserve all four properties simultaneously.

Mercator Projection – Key Features

- Developed by **Gerardus Mercator in 1569**.
- **Cylindrical + conformal projection**.
- Primarily designed for **navigation**.
- Preserves **angles and local shapes**.
- A straight line represents a **constant compass bearing** (rhumb line).

Major limitation

- Distortion increases towards the **poles**.
- High-latitude regions appear much larger than their actual area.

Example:

- **Greenland appears comparable to Africa**, although Africa is vastly larger.
- Antarctica is also greatly exaggerated.

Reason:

- As latitude increases → spacing between parallels increases → land area appears inflated.

Equal Earth Projection

Developed: 2018

- **Equal-area projection**.
- Preserves the **relative area** of continents and countries.
- Curved meridians reduce some visual distortions.
- Particularly useful for:
 - Population-density maps
 - Climate-change maps
 - Land-cover/resource distribution
 - Statistical/thematic maps
 - Classroom and research applications

Limitation: It does not preserve shape, distance and direction perfectly.

Evolution of Major World Projections

Mercator (1569)
↓
Navigation-oriented
↓

Gall (1855) → Peters (1973)



Robinson (1963)



Winkel Tripel (1921)



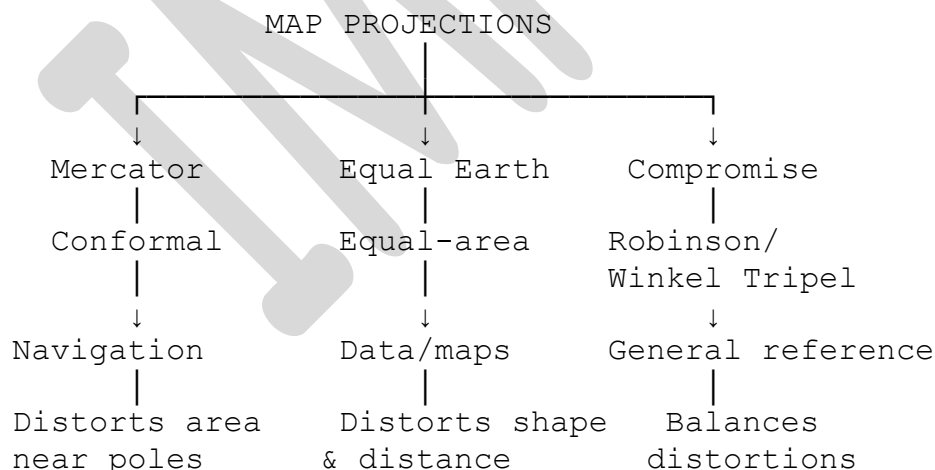
Equal Earth (2018)

- **Robinson:** compromise projection balancing area and shape.
- **Winkel Tripel:** reduces overall distortion in area, distance and direction; adopted by National Geographic in 1998.
- **Equal Earth:** prioritises **area accuracy**.

Which Projection for Which Purpose?

<i>Purpose</i>	<i>Suitable projection</i>	<i>Main advantage</i>
 Navigation	Mercator	Direction/angles
 Thematic & statistical data	Equal Earth	Area
 General world reference	Robinson / Winkel Tripel	Balanced distortion
 Polar studies	Azimuthal/Planar	Polar representation
 Flight-distance routes	Azimuthal	Useful distance/direction from a central point

Mind Map



UPSC Prelims Pointers

- **Mercator → Conformal**
- **Equal Earth → Equal-area**
- **Mercator → Navigation**

- **Equal Earth** → **Thematic/statistical mapping**
- **Robinson & Winkel Tripel** → **Compromise projections**
- **Azimuthal** → **Polar/central-point applications**
- **No projection preserves area, shape, distance and direction simultaneously.**
- A map projection is a **mathematical representation**, not an exact reproduction of Earth's surface.

! Conceptual Point

- The debate over Mercator is not simply “old map = wrong, new map = correct.” Rather:
Purpose → Property to preserve → Appropriate projection
- Hence, different projections can be **correct for different purposes**.



Probable UPSC Prelims Question

Q. With reference to map projections, consider the following statements:

1. Mercator projection is a conformal projection primarily useful for navigation.
2. Equal Earth projection preserves the relative areas of landmasses.
3. A single map projection can simultaneously preserve area, shape, distance and direction perfectly.
4. Robinson projection is a compromise projection.

Which of the statements given above are correct?

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

Answer: B

Answer Hint: Statement 3 is incorrect because every projection necessarily involves some distortion.



Probable UPSC Mains Question

Q. “No map projection can accurately represent every property of the three-dimensional Earth on a two-dimensional surface.” Explain with reference to Mercator, Equal Earth and compromise projections. (250 words)

🎯 UPSC Takeaway

Mercator = Direction
Equal Earth = Area

Robinson/Winkel Tripel = Balance
Azimuthal = Polar/Central-point applications

Core principle: Choose the projection according to the purpose of the map, not by assuming that one projection is universally superior.

Postpartum Psychosis & Criminal Responsibility

Brief

- A US court declared a **mistrial** in the case of **Lindsay Clancy**, who was accused of killing her three children.
- The defence invoked **postpartum psychosis (PPP)** and sought a finding of **not guilty by reason of insanity**.
- The case highlights the intersection of **mental health, criminal responsibility and the insanity defence**.

What is Postpartum Psychosis?

- **Postpartum psychosis** is a rare but severe **psychiatric emergency** that can occur after childbirth, in which a person may lose contact with reality.

Symptoms

- **Delusions** – false, strongly held beliefs
- **Hallucinations** – hearing/seeing things that are not actually present
- Severe mood changes — depression, irritability or agitation
- **Insomnia**
- Confused or disorganised thinking
- Symptoms may **wax and wane rapidly**.

Risk factors

- Previous episode of postpartum psychosis
- **Bipolar disorder**
- Previous psychotic illness
- Family history of psychotic disorders

Important: The exact cause is not fully understood.

Postpartum Psychosis ≠ Postpartum Depression

<i>Feature</i>	<i>Postpartum Psychosis</i>	<i>Postpartum Depression</i>
Frequency	Rare	More common
Reality testing	May be severely impaired	Usually retained

<i>Feature</i>	<i>Postpartum Psychosis</i>	<i>Postpartum Depression</i>
Hallucinations/delusions	Characteristic	Not typical
Nature	Psychiatric emergency	Depressive disorder
Risk	Potentially severe, including risk of harm	Primarily depression-related impairment

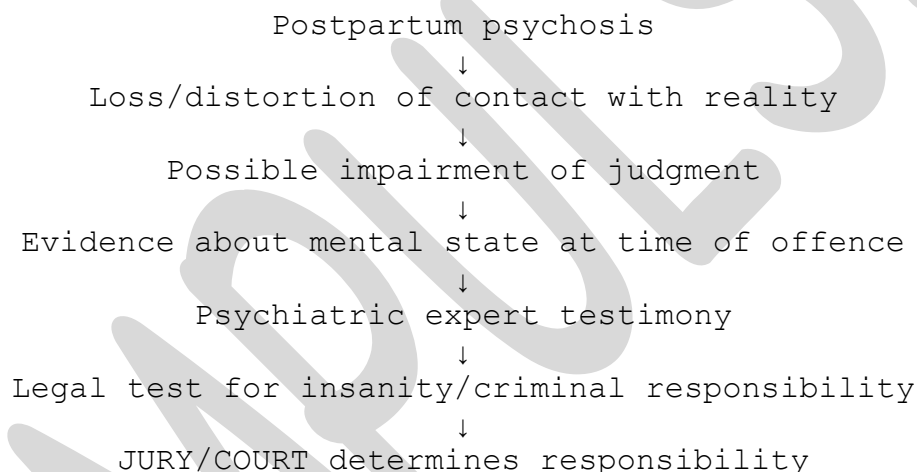
Can PPP Affect Criminal Responsibility?

Yes, potentially — but NOT automatically.

The crucial legal question is:

What was the person's mental state at the time of the offence?

A diagnosis of postpartum psychosis **does not by itself establish legal insanity.**



Key distinction

Medical diagnosis ≠ Legal insanity

A person may have psychosis *but still retain sufficient ability to:*

- understand what they are doing,
- understand that it is wrong, or
- control/conform their behaviour according to law,

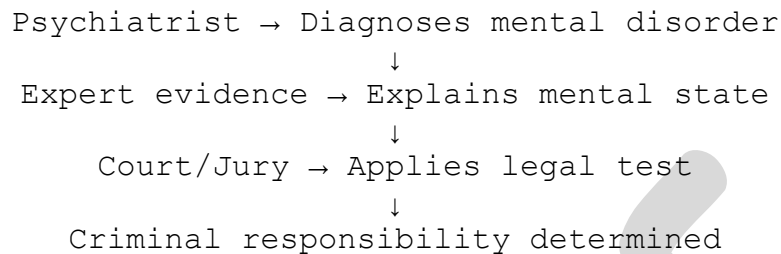
depending on the applicable jurisdiction's legal test.

Insanity Defence

- The **insanity defence** is a legal doctrine under which severe mental illness may, under specified legal standards, prevent a person from being held criminally responsible.

- In the case described, psychiatric experts could provide evidence about the defendant's mental state, but **criminal responsibility is ultimately a legal determination, *not simply a medical diagnosis.***

Important distinction



Why is PPP Particularly Important in Criminal Law?

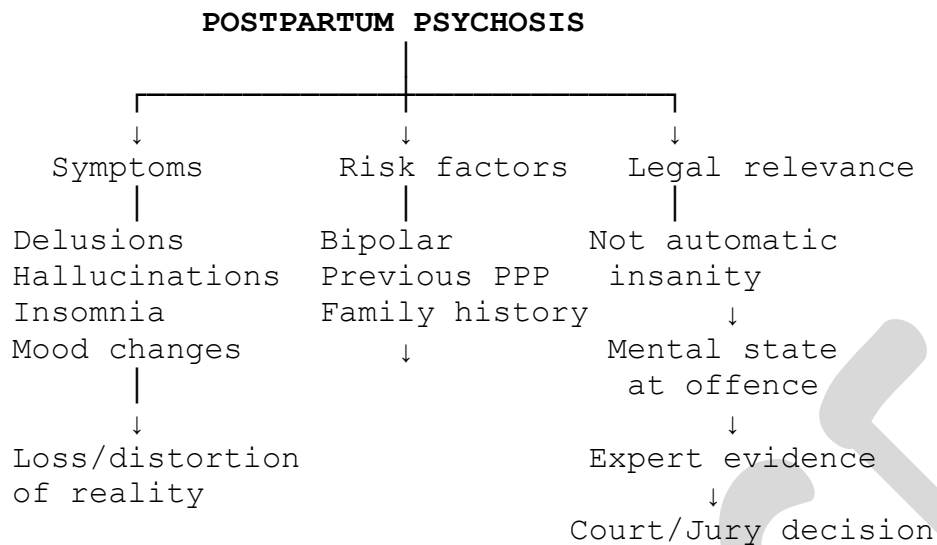
- Psychosis can sometimes produce **delusions or hallucinations that influence behaviour.**
- For example:
 Psychotic belief → distorted perception of reality → behaviour
- However, the presence of such symptoms alone does not establish that the person legally lacked responsibility.
- The court must examine evidence such as:
 - mental state at the time of the offence,
 - nature of delusions/hallucinations,
 - behaviour before and after the offence,
 - psychiatric history,
 - expert psychiatric evidence,
 - applicable statutory/common-law test.



UPSC/Indian Context

- India's **Bharatiya Nyaya Sanhita (BNS), 2023**, contains the legal principle relating to acts of a person of **unsound mind**.
- The central concept is whether, **at the time of the act**, the person was incapable of understanding the **nature of the act** or that what they were doing was **wrong or contrary to law**.
- Thus, the broader principle is similar:
 - **Mental illness alone does not automatically eliminate criminal responsibility; the legally relevant mental capacity at the time of the act is crucial.**

Mind Map



Prelims Takeaways

- **Postpartum psychosis** is distinct from postpartum depression.
- It can involve **hallucinations and delusions**.
- It is a **psychiatric emergency**.
- **Bipolar disorder** is an important risk factor.
- A psychiatric diagnosis **does not automatically establish legal insanity**.
- Criminal responsibility generally focuses on the person's **mental capacity at the time of the offence**.
- **Medical insanity and legal insanity are not synonymous**.

Probable UPSC Prelims Question

- Q.** With reference to postpartum psychosis, consider the following statements:
1. It may involve hallucinations and delusions.
 2. A diagnosis of postpartum psychosis automatically establishes absence of criminal responsibility.
 3. Bipolar disorder may increase the risk of postpartum psychosis.
 4. Legal determination of criminal responsibility may require assessment of the person's mental state at the time of the offence.

Which of the above statements are correct?

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

Answer: C

Probable UPSC Mains Question

Q. “Mental illness and legal insanity are distinct concepts.” Discuss with reference to postpartum psychosis and criminal responsibility. **(250 words)**

One-line takeaway

- Postpartum psychosis can be relevant to an insanity defence, but its presence alone does not determine criminal responsibility; the decisive issue is the legally relevant mental capacity at the time of the offence.

08.09.2026

Swachh Vayu Sarvekshan 2026

Brief

- **Swachh Vayu Sarvekshan 2026** rankings were released to assess cities on their efforts to improve **air quality**.
- **Lucknow** secured **1st position** among cities with **million-plus population**.
- **Indore** ranked 2nd and **Jabalpur** 3rd.
- For the first time, **municipal wards showing improvement in air quality** were also recognised.



Top-ranking Cities

<i>Population category</i>	<i>1st</i>	<i>2nd</i>	<i>3rd</i>
Million-plus	Lucknow	Indore	Jabalpur
3–10 lakh	Rourkela	Firozabad & Guntur	Amravati
<3 lakh	Kalinga Nagar	Angul	Talcher



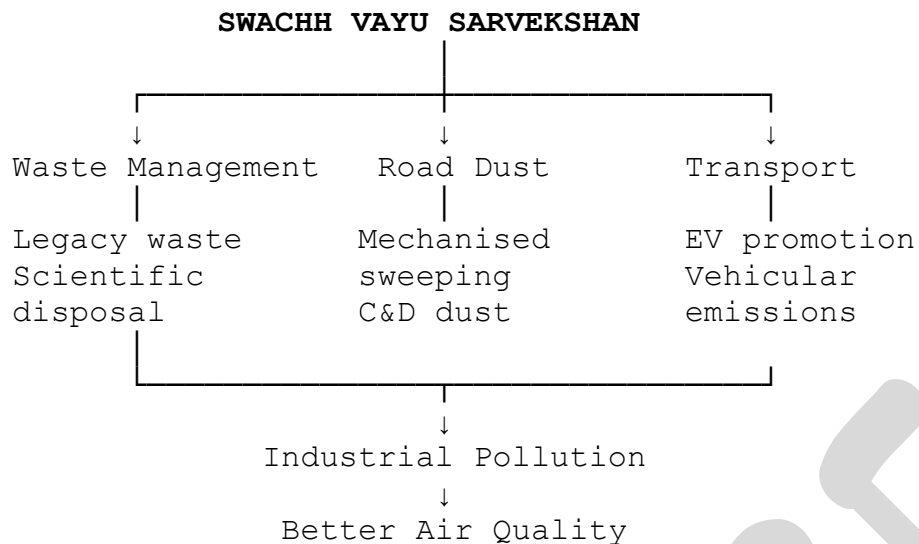
Cash Awards

- Million-plus: ₹**1.5 crore**, ₹1 crore, ₹50 lakh
- 3–10 lakh: ₹**75 lakh**, ₹50 lakh, ₹25 lakh
- <3 lakh: ₹**37.5 lakh**, ₹25 lakh, ₹12.5 lakh



What does the Survey Assess?

The ranking considers interventions across multiple sources of urban air pollution:



Major parameters

- **Waste management**
- **Road-dust control**
- **Construction & demolition waste**
- **Vehicular pollution reduction**
- **Industrial pollution reduction**
- Reduction in **particulate matter (PM)** concentrations

Lucknow: Important Data

- Although Lucknow won the million-plus category, it **has not yet achieved the prescribed annual PM₁₀ standard of 60 $\mu\text{g}/\text{m}^3$.**

Progress under NCAP

2017–18: 250 $\mu\text{g}/\text{m}^3$



2026: 137 $\mu\text{g}/\text{m}^3$



45.2% reduction

Significance

This illustrates an important distinction:

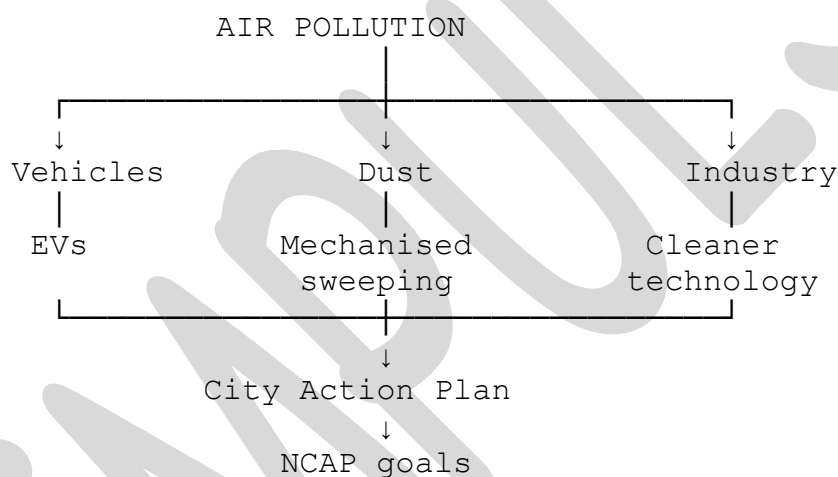
- ⊗ **Improvement in pollution levels $\neq$ attainment of the prescribed air-quality standard.**
- ⊗ A city can receive a high ranking for **improvement and mitigation measures** while still remaining above the national ambient standard.

Link with National Clean Air Programme (NCAP)

NCAP → launched in 2019

- ☐ Broad objective:
City-level action → emission reduction → lower PM concentrations → improved air quality
- ☐ It focuses particularly on **particulate pollution**, with city-specific action plans covering sources such as:
 - road dust,
 - vehicles,
 - industries,
 - waste burning,
 - construction activities.

UPSC Concept



Important Critical Analysis

Ranking ≠ Absolute Cleanliness

- ☐ The survey evaluates **performance/interventions across specified parameters**.
- ☐ Therefore:

High ranking

≠

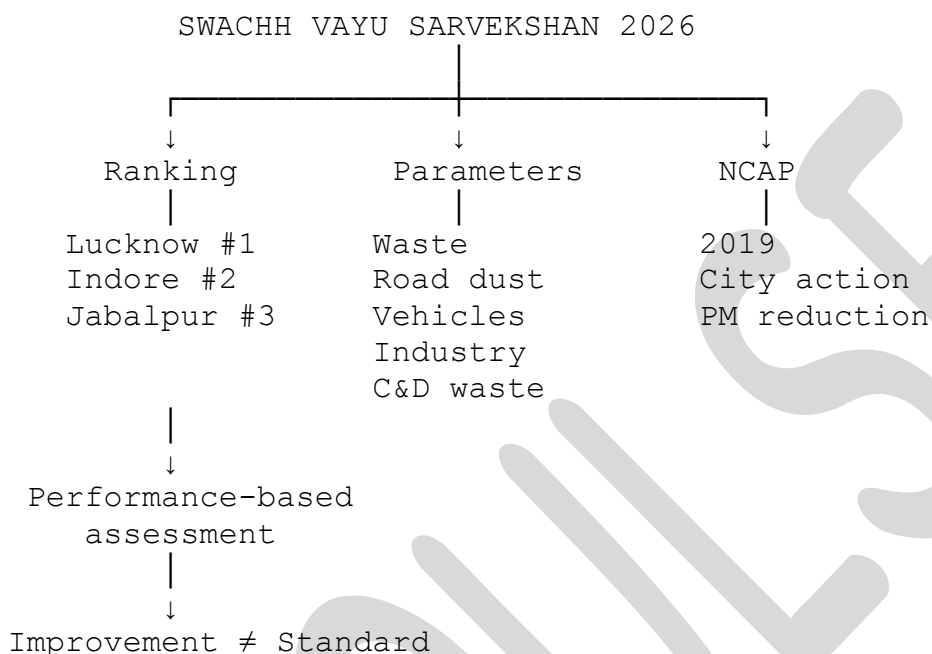
Air quality necessarily meets all national standards

- ☐ Lucknow is an important example: **despite a 45.2% decline in PM₁₀, its reported annual concentration remains above the 60 µg/m³ standard.**

Why PM10 matters?

- **PM10** = particulate matter with aerodynamic diameter **≤10 micrometres**.
- It can penetrate the respiratory system and is associated with adverse health effects.

Mind Map



Prelims Pointers

- **Swachh Vayu Sarvekshan 2026** → city air-quality improvement assessment.
- **Lucknow** → 1st among million-plus cities.
- **Indore** → 2nd.
- **Jabalpur** → 3rd.
- Cities are classified into **three population categories**.
- **PM10** reduction is an important component.
- Assessment includes **waste, road dust, vehicular, industrial and C&D pollution**.
- **NCAP** was launched in **2019**.
- National annual **PM10 standard = 60 µg/m³** as stated in the article.
- **Municipal wards** were recognised for the first time in 2026.
- A city can show substantial pollution reduction **without yet meeting the ambient air-quality standard**.



Probable UPSC Prelims Question

Q. With reference to the Swachh Vayu Sarvekshan, consider the following statements:

1. Cities are categorised on the basis of population for the assessment.
2. Road-dust management and vehicular pollution reduction are among the assessment parameters.

3. A city securing the highest rank necessarily meets the national ambient air-quality standards.
4. Reduction in particulate matter is considered in assessing city performance.

Which of the statements given above are correct?

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

✓ **Answer: A**

 Probable UPSC Mains Question

Q. “Urban air-quality improvement requires addressing multiple emission sources rather than merely monitoring ambient air quality.” Discuss in the context of the Swachh Vayu Sarvekshan and NCAP. (250 words)

 UPSC Takeaway

- ➔ **Swachh Vayu Sarvekshan = Performance-based city assessment**
- ➔ **Waste + Road Dust + Vehicles + Industry + C&D → Emission reduction → Better urban air quality**
- ✂ **Remember:** *A reduction in pollution is not the same as compliance with the prescribed air-quality standard.*

Conscious AI & Ethics of a Machine That Feels

Core Issue

- The emergence of sophisticated AI models such as **Claude Sonnet 4.5** has revived the debate: **Can an intelligent machine also possess consciousness?**

What is Consciousness?

- **Consciousness ≠ Intelligence**
 - **Intelligence:** ability to learn, reason, solve problems and generate responses.
 - **Consciousness:** **subjective experience** — the capacity to *experience* sensations, emotions or suffering.

- Neuroscientist **Anil K. Seth** cautions against equating sophisticated intelligence with consciousness.

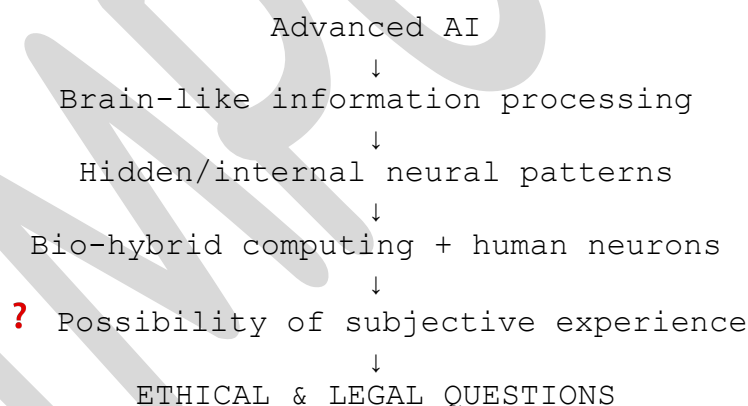
Claude & the “J-space”

- Researchers studying **Claude Sonnet 4.5** reportedly identified hidden neural patterns associated with words connected to its eventual outputs.
- **Anthropic** calls this collection of internal neural patterns the “**J-space**.”
- It has been compared with the **Global Workspace Theory (GWT)** of human consciousness.
- However, the presence of internal information-processing patterns **does not by itself establish subjective experience**.

Theories of Consciousness

- Nearly **half a century of research** has produced **300+ theories/frameworks**.
- **Global Workspace Theory**: consciousness emerges when information becomes globally available across different cognitive systems.
- Other approaches include **Integrated Information Theory (IIT)** and higher-order theories.
- **No universally accepted scientific test for machine consciousness currently exists.**

Why the Debate is Growing



Ethical Dimensions

<i>Issue</i>	<i>Key Question</i>
Moral status	If AI can suffer, should it have moral consideration?
AI rights	Could conscious AI deserve protection from exploitation?
Creation ethics	Is it ethical to deliberately create potentially conscious systems?
Suffering	Could training, experimentation or deletion cause AI suffering?
Responsibility	Who is accountable for actions of a conscious AI?
Precaution	Should uncertainty about consciousness justify safeguards?

Issue

Key Question

Human exceptionalism Would consciousness challenge the human-machine distinction?

Way Forward

AI governance should move from capability-centric → consciousness-aware governance.

- Develop **scientifically validated indicators/tests** of machine consciousness.
- Maintain distinction between **simulation of emotion** and genuine subjective experience.
- Establish **ethical review mechanisms** for advanced/bio-hybrid AI research.
- Apply a **precautionary principle** where credible evidence of machine suffering emerges.
- Promote interdisciplinary research involving **AI, neuroscience, philosophy, ethics and law**.
- Ensure transparency regarding AI's internal processing without assuming that interpretability automatically proves consciousness.

★ UPSC Prelims Pointers

- **Consciousness is primarily associated with subjective experience.**
- **Intelligence and consciousness are conceptually distinct.**
- **Global Workspace Theory** is one theory of consciousness.
- Detection of internal neural patterns **is not conclusive proof of consciousness.**
- Bio-hybrid computing combines **biological components with computational systems.**
- There is **no scientific consensus** on a definitive test for AI consciousness.



Probable UPSC Mains Question

Q. “Artificial intelligence may eventually challenge the distinction between intelligence and consciousness.” Discuss the scientific uncertainties and ethical implications of developing potentially conscious machines. **(250 words)**

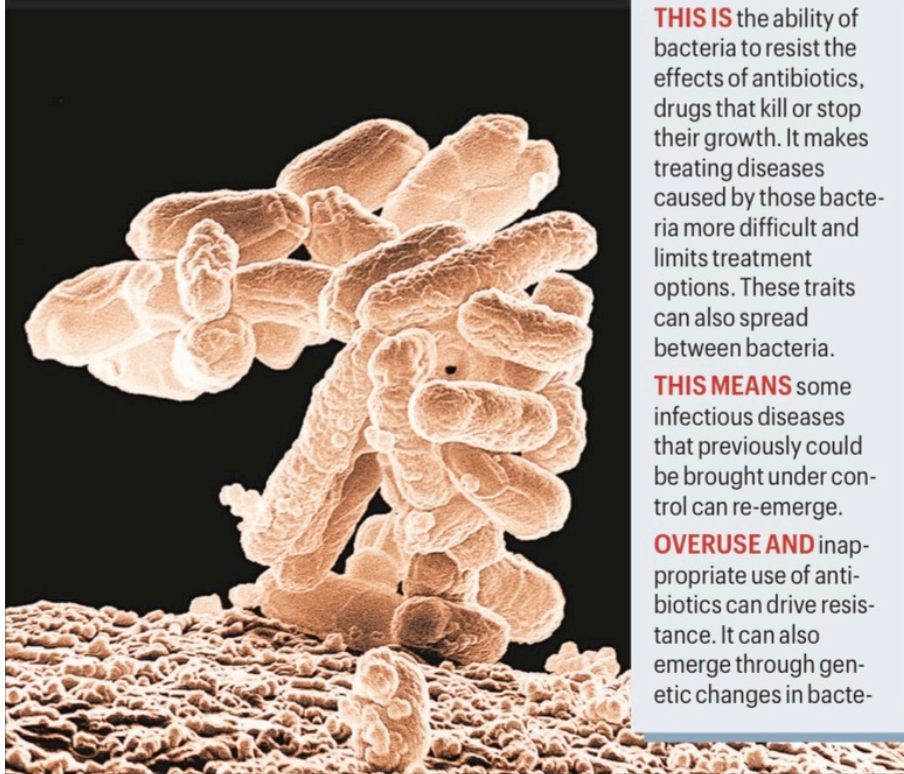
Keywords: *Subjective experience • Global Workspace Theory • AI ethics • moral status • machine suffering • bio-hybrid computing • precautionary principle • responsible AI*

• HEALTH

Antibiotic-resistant infections: Risks, costs

An ICMR study of 159,336 patients has found that antibiotic-resistant bacteria infections are more likely to be fatal and more expensive to treat

ANTIBIOTIC RESISTANCE: CAUSES AND EFFECTS



THIS IS the ability of bacteria to resist the effects of antibiotics, drugs that kill or stop their growth. It makes treating diseases caused by those bacteria more difficult and limits treatment options. These traits can also spread between bacteria.

THIS MEANS some infectious diseases that previously could be brought under control can re-emerge.

OVERUSE AND inappropriate use of antibiotics can drive resistance. It can also emerge through genetic changes in bacteria

and spread through poor infection control, inadequate sanitation and antibiotic use in agriculture.

THIS MAKES infection prevention and control (IPC) very important, which stops infections from developing and spreading so that powerful antibiotics are not needed. It stops germs from learning how to beat the drugs, keeping those medicines effective for when people truly need them.

MAINTAIN HYGIENE and take vaccination, cutting down the need for drug treatments.

Expensive to treat

Carbapenems are powerful, broad-spectrum antibiotics that doctors often keep in reserve for serious infections, especially when other antibiotics may not work.

The study found that antibiotic treatment was more expensive when the bacteria were resistant to carbapenems.

Antibiotic-Resistant Infections: Risks & Costs

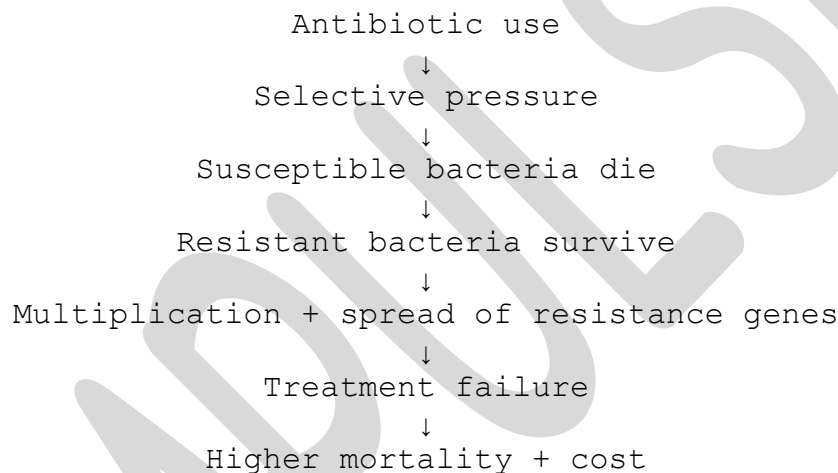
Brief

- An ICMR antimicrobial resistance (AMR) surveillance study across 20 tertiary-care hospitals studied 1,59,336 hospitalised patients during April 2022–April 2025 and found that **carbapenem-resistant bacterial infections** were associated with higher mortality, longer hospital stays and greater antibiotic costs.



What is Antimicrobial Resistance (AMR)?

- AMR occurs when microorganisms evolve the ability to survive medicines designed to kill or inhibit them.



How resistance spreads

- **Mutation/genetic changes** → resistance develops.
- **Vertical transmission** → resistant traits pass to offspring.
- **Horizontal gene transfer** → resistance genes can move between bacteria through exchange of DNA.
- Drivers include:
 - Inappropriate/overuse of antibiotics
 - Poor infection prevention and control
 - Inadequate sanitation
 - Antibiotic use in agriculture
 - Healthcare-associated transmission

Why are Carbapenems Important?

- ⊗ Carbapenems are powerful, broad-spectrum antibiotics often reserved for **serious bacterial infections**, particularly when other antibiotics are ineffective.
- ⊗ Carbapenem resistance → fewer effective treatment options → **greater risk of treatment failure**.

Major Bacteria Studied

<i>Bacteria</i>	<i>Important infections</i>
<i>E. coli</i>	Urinary tract infections
<i>Klebsiella pneumoniae</i>	Urinary & lung infections
<i>Acinetobacter baumannii</i>	Ventilator-associated pneumonia, bloodstream & wound infections
<i>Pseudomonas aeruginosa</i>	Bloodstream, eye & ear infections

✂ ≈61.1% of patients with these infections had bacteria resistant to carbapenems in the study population.

Mortality

<i>Bacteria</i>	<i>Carbapenem-resistant</i>	<i>Drug-susceptible</i>
<i>E. coli</i>	24.4%	17.3%
<i>K. pneumoniae</i>	31.2%	23.5%
<i>A. baumannii</i>	~37.9%	32.8%
<i>P. aeruginosa</i>	28.9%	20.2%

Relative increase in risk of death:

E. coli **41%** → K. pneumoniae **33%**
→ A. baumannii **16%** → P. aeruginosa **43%**

➔ **Prelims caution:** The study shows an association between resistance and worse outcomes; it does **not establish that carbapenem resistance alone caused every death**, because several patient-level factors were unavailable.

Economic Burden

Average antibiotic cost per patient:

<i>Bacteria</i>	<i>Resistant</i>	<i>Susceptible</i>
E. coli	₹39,846	₹20,034
K. pneumoniae	₹55,688	₹47,918
A. baumannii	₹62,150	₹41,372
P. aeruginosa	₹66,599	₹48,392

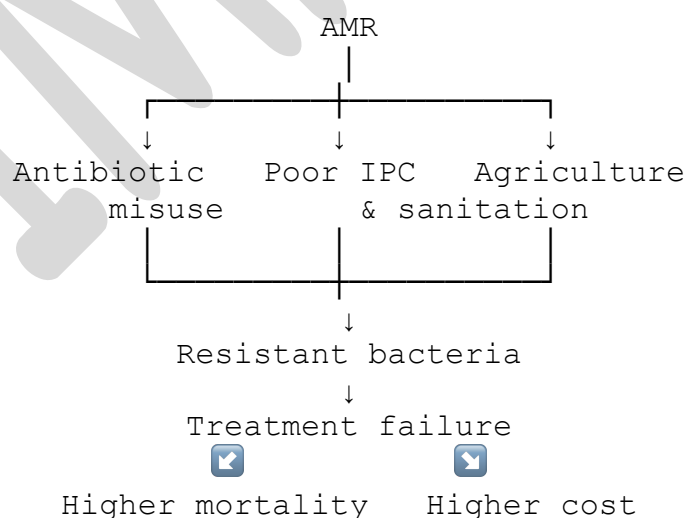
✂ ⚠ **Actual economic burden is likely higher** because the study excluded ICU costs, hospital beds/rooms, diagnostics, procedures, supportive care and consultation charges.

Healthcare-Associated AMR

- ❑ A particularly important finding:
>85% of bloodstream infections involving the four bacteria were classified as **healthcare-associated**.

Key risk factors

- Invasive medical devices
- Recent surgery
- Prolonged hospitalisation
- Poor hand hygiene
- Environmental contamination
- Gaps in infection prevention and control (IPC)
- Delayed diagnosis



Way Forward – “Prevent → Diagnose → Treat → Preserve”

1. Prevent

- Hand hygiene
- Environmental cleaning
- Surgical-site infection prevention
- Device-associated infection prevention
- Early removal of unnecessary invasive devices
- Vaccination and sanitation

2. Diagnose

- Rapid and timely microbiological diagnosis
- Identify resistance patterns early
- Link laboratory data with patient outcomes

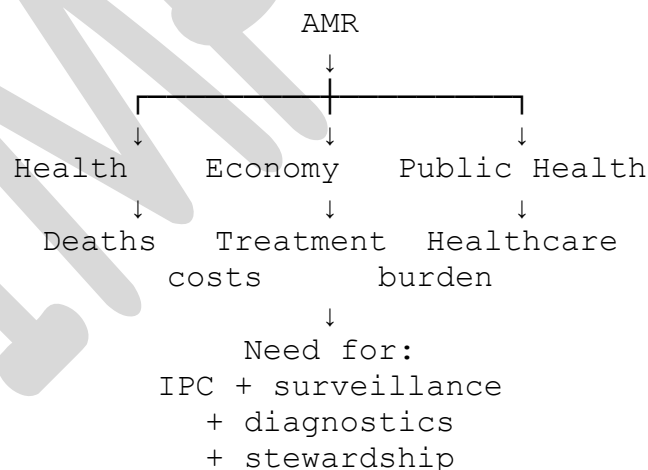
3. Treat

- **Targeted/narrow-spectrum antibiotics** whenever appropriate
- Avoid unnecessary broad-spectrum antibiotic use
- Strengthen antimicrobial stewardship

4. Preserve

- Treat antibiotics as a **finite public-health resource**
- Surveillance of AMR and healthcare-associated infections
- Integrated **One Health** approach covering humans, animals, food and environment

Significance for India



Key takeaway:

“Antibiotics cannot compensate for failures in infection prevention.”

- The article's central lesson is that combating AMR requires **not merely discovering new antibiotics**, but preventing infections, diagnosing them early and preserving existing effective drugs.

★ UPSC Prelims Pointers

- **AMR is not limited to antibiotics**; antimicrobial resistance is a broader phenomenon, although antibiotic resistance concerns bacteria.
- **Carbapenems** are broad-spectrum antibiotics used for serious bacterial infections.
- Resistance can spread through **horizontal gene transfer**.
- **E. coli** → **UTI** is an important association.
- **A. baumannii** → **ventilator-associated pneumonia** is important.
- **Healthcare-associated infections (HAIs)** are a major contributor to AMR transmission.
- **Infection Prevention and Control (IPC)** is central to AMR management.
- AMR requires a **One Health approach**.

Probable UPSC Mains Question

Q. “Antimicrobial resistance is increasingly becoming a threat to both public health and healthcare affordability. Discuss the drivers of AMR in India and suggest a comprehensive strategy to address it.” (250 words)

Keywords: *AMR • antimicrobial stewardship • carbapenem resistance • healthcare-associated infections • IPC • One Health • rapid diagnostics • surveillance • antibiotic conservation*

Ig Noble Prize

Quick pick:

- The Ig Nobel Prize is an annual satirical award established in **1991 to honor unusual, quirky, or seemingly trivial scientific research that "first makes people laugh, and then makes them think"**.
- Organized by the science humor magazine Annals of Improbable Research (AIR) and founded by Marc Abrahams, the awards seek to celebrate the imaginative and spark public interest in science, technology, and medicine.

Key Features of the Awards

- **The Name:** It is a pun on the word *ignoble* and references a fictional cousin of Alfred Nobel named Ignatius Nobel.
- **The Tradition:** Winners traditionally receive their prizes from genuine, bemused Nobel laureates during an unorthodox ceremony characterized by miniature operas, 24/7 lectures, and an overwhelming deluge of paper airplanes.

- **The Prize:** Winners traditionally receive a worthless trillion-dollar bill from Zimbabwe (dating from its hyperinflation era) alongside a bizarre, custom-crafted trophy.
- **Legitimacy:** With very rare historical exceptions, the recognized studies are based on genuine, peer-reviewed (if eccentric) scientific research.

Recent Highlights

The 36th First Annual Ig Nobel Prize Ceremony took place on **September 3, 2026**, marking the first time in history the event was held outside the United States (hosted at the Kongresshaus in **Zurich, Switzerland**) due to administrative and visitor-safety considerations. Some of the recognized topics included:

- **Biomechanics:** Devising a precise cross-species definition of kissing.
- **Physics:** Investigating the fluid dynamics of splash-free urinals.
- **Chemistry:** Highlighting findings that cockroach milk proteins contain triple the energy density of cow milk.
- **Soil Science:** Evaluating the decomposition rates of thousands of buried cotton underpants.

09.09.2026

Endometriosis & Genetics

Brief

- India's **first genome-wide study of endometriosis** has identified **21 suggestive genetic regions** associated with the disease, providing new clues about why some Indian women may have greater genetic susceptibility.
- The study, published in **Scientific Reports**, adds an important **South Asian genetic component** to a field where much previous research has focused on populations of European ancestry.

What is Endometriosis?

- **Endometriosis** is a chronic condition in which **tissue similar to the lining of the uterus grows outside the uterus.**

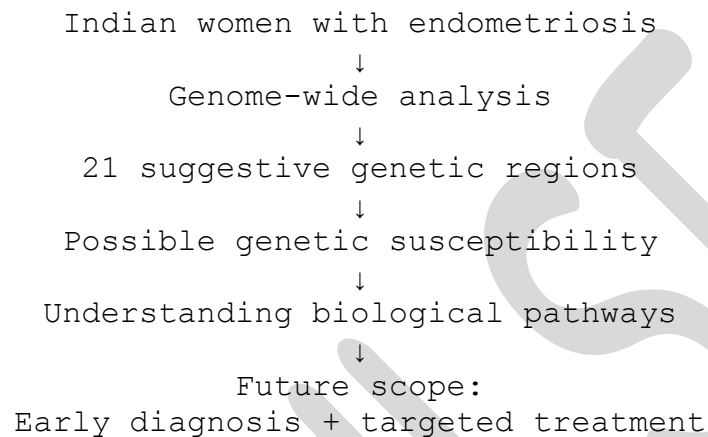
Common manifestations

- Severe menstrual/period pain
- Chronic pelvic pain
- Pain associated with menstruation

- Infertility
- Often prolonged delay in diagnosis

 **Prevalence:** WHO estimates indicate that endometriosis affects about **10% of women of reproductive age** globally.

What did the Indian Genome Study Find?



Key findings

- **21 suggestive genetic regions** were identified.
- Some genetic signals had been reported previously in other populations.
- A **genetic risk score developed using European populations** also showed relevance in the Indian cohort.
- The findings suggest that **genetic susceptibility may contribute to endometriosis**.
- However, the identified regions **do NOT yet provide a clinically usable genetic test**.

Why is the Study Important for India?

▪ **Under-representation in genetic research**

Much of the previous genetic research on endometriosis has involved **European-ancestry populations**.

Therefore:

- **Indian genomic dataset → South Asian representation → more representative global understanding**

The study can help investigate whether certain genetic variants have different significance across populations.

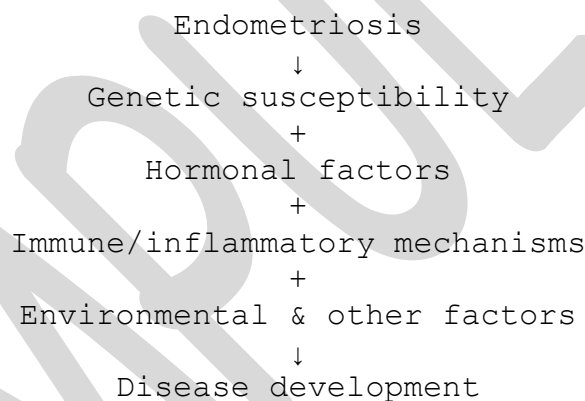
Study Design

The research involved:

- **18 centres across India**
- Collaboration among:
 - **Gynaecological laparoscopic surgeons**
 - **Clinicians**
 - **Researchers**
 - **Laboratory teams**
- Women with surgically confirmed endometriosis and control participants were recruited.
- The initiative was linked to the Endometriosis Clinical and Genetic Research in India (ECGRI) programme.

Important Limitation

The discovery of genetic associations **does not mean endometriosis is purely genetic.**



- ✂ The researchers specifically emphasise that the findings are **not ready for individual risk prediction or clinical testing.**

Therefore:

Genetic association ≠ genetic diagnosis ≠ certainty of developing disease

- ✂ A genetic risk factor may increase susceptibility without determining whether an individual will develop the disease.

Public Health Significance

Diagnostic delay

Women may live for years with:

- **Severe menstrual pain**
- **Chronic pelvic pain**

- **Infertility**

Symptoms may be **normalised or dismissed**, contributing to delayed diagnosis.

Potential future benefits

Research finding

Genetic regions

Population-specific variants

Genetic risk studies

Biological pathways

Better understanding

Possible future application

Identify biological pathways

Better South Asian research

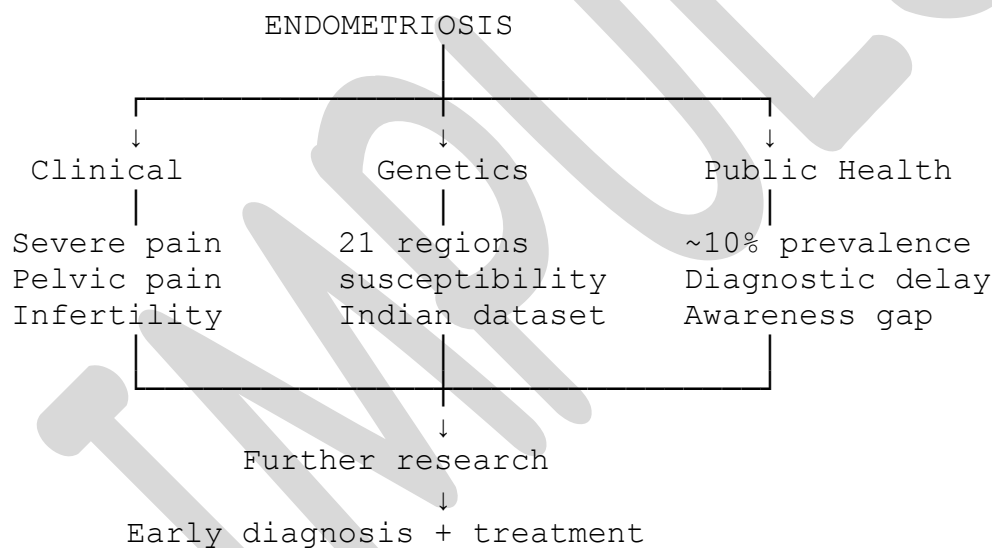
Potential early-risk identification

New therapeutic targets

Earlier recognition & diagnosis

But these applications require further validation.

Mind Map



★ UPSC Prelims Pointers

1. **Endometriosis** involves tissue similar to the uterine lining growing outside the uterus.
2. It can be associated with **pelvic pain and infertility**.
3. The Indian study identified **21 suggestive genetic regions**.
4. The study was a **genome-wide genetic study**.
5. Previous endometriosis genetic research has disproportionately focused on **European-ancestry populations**.
6. A European-derived genetic risk score showed **relevance in the Indian cohort**.
7. The findings are **not yet suitable for clinical genetic testing or individual risk prediction**.

8. Genetic susceptibility **does not imply that genetics is the sole cause** of endometriosis.
9. The study was published in **Scientific Reports**.
10. WHO estimates endometriosis affects approximately **10% of women of reproductive age**.

Endometriosis: A Neglected Disease – Key Points

- Endometriosis is a chronic condition in which tissue similar to the **uterine lining (endometrium)** grows outside the uterus.
- It affects an estimated **10% of women of reproductive age**, causing **severe menstrual pain, chronic pelvic discomfort and fatigue**.
- India accounts for nearly **25% of the global endometriosis burden**.
- An ICMR-led **genome-wide study**, the first major study of its kind in India, suggests that **Indian women may have population-specific genetic predisposition** to the disease.
- The **exact cause remains unknown**, and there is currently **no definitive cure**.
- **Delayed diagnosis** is a major challenge; WHO estimates diagnosis may take **4–12 years**.
- Symptoms such as **period pain and fatigue are often normalised**, while infertility may lead to diagnosis only after difficulty conceiving.
- Delayed treatment can cause **internal scarring, organ damage and complications**.
- Research also indicates possible associations with **lupus, multiple sclerosis and inflammatory bowel disease**.
- The Indian study could support **earlier diagnosis, targeted treatment and prevention of complications**.



Probable UPSC Mains Question

Q. “The emergence of population-specific genomic research can transform the understanding of diseases that have historically been studied through Western populations.” Discuss with reference to India's genomic research on endometriosis. **(250 words)**

Keywords: *Genomic diversity • genetic susceptibility • genome-wide association • South Asian populations • precision medicine • diagnostic delay • reproductive health • population-specific research*

ISRO & Expanding Space Ecosystem

Brief

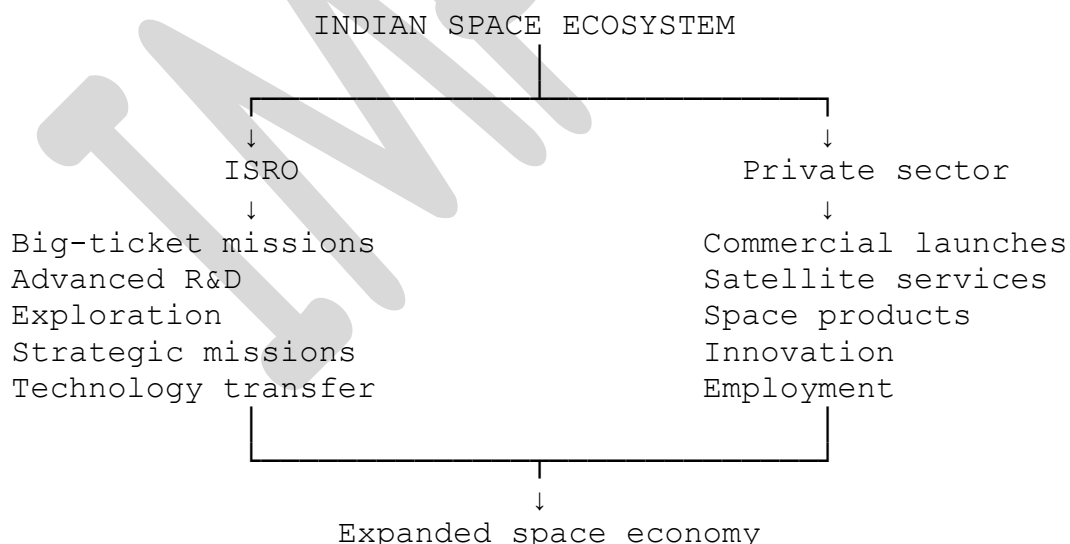
- A debate has emerged over **ISRO's future role vis-à-vis India's growing private space sector**. Recent comments about private companies eventually undertaking launch-vehicle manufacturing triggered concerns among sections of ISRO employees. ISRO leadership has clarified that there is **no move to privatise ISRO**, while supporting greater private-sector participation.
- The broader issue is: Should ISRO remain involved in routine commercial activities, or increasingly focus on advanced R&D, exploration and strategic missions while private industry handles commercial operations?

Changing Role of ISRO

Traditional model



Emerging model





Greater Role for Private Sector

India is increasingly moving from an **ISRO-centric space model** → **multi-actor space ecosystem**.

Existing examples

- **Private space companies** increasingly use expertise of retired ISRO scientists as advisers/mentors.
- ISRO provides **launch infrastructure and related services** to private companies.
- Technology developed by ISRO can be **transferred to industry**.
- The **Small Satellite Launch Vehicle (SSLV)** technology has been transferred to **Hindustan Aeronautics Limited (HAL)**.

Potential benefits

Private sector →

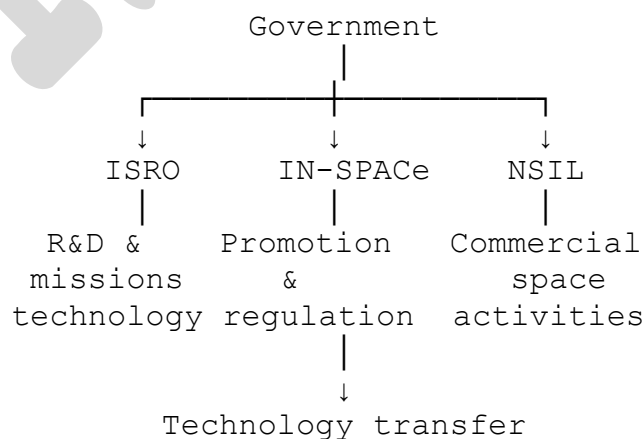
- More commercial launches
- Investment and innovation
- Larger industrial supply chains
- Employment generation
- Wider talent pool
- Export opportunities
- Revenue generation
- Development of space-based products and services



Role of IN-SPACe

- **Indian National Space Promotion and Authorisation Centre (IN-SPACe)** is the nodal institution for **promoting, enabling and regulating private-sector participation in India's space sector**.

Broad ecosystem



↓
Private industry

Why ISRO Could Focus on Big-Ticket Missions

- A NASA-like division of functions could allow ISRO to concentrate more on:
 - Advanced space technology
 - Human spaceflight
 - Planetary exploration
 - Deep-space missions
 - Space science
 - Strategic capabilities
 - Next-generation launch systems
 - Long-term R&D

Rationale

Routine commercial activity → Private industry

High-risk, capital-intensive frontier missions → ISRO

This could allow public resources and scientific talent to be concentrated on activities with longer gestation periods and higher technological risk.

Concerns Regarding the Transition

A. Financial sustainability

- Commercial launches generate revenue. Completely withdrawing from commercial activities could reduce an additional source of income for ISRO.

B. Talent retention

- Advanced R&D and exploration require the ability to **attract and retain highly skilled scientists and engineers**.

C. Institutional autonomy

- ISRO's relatively high degree of professional autonomy has been considered an important factor in its development.

D. Technology dependence

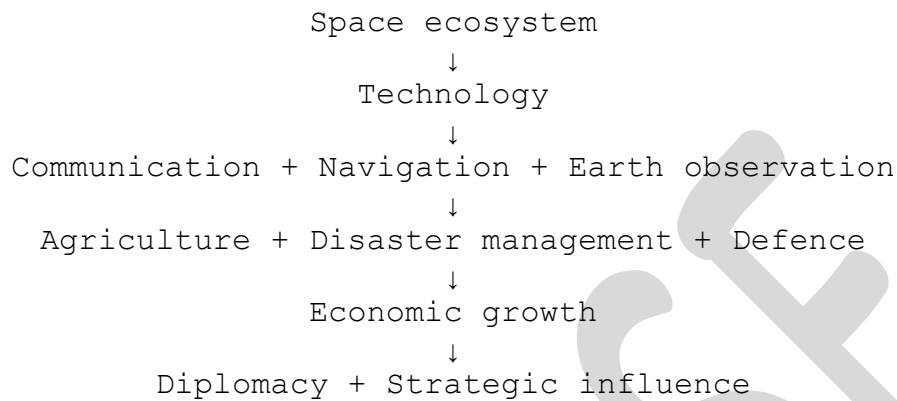
- If critical capabilities shift entirely to private companies, the public sector must retain sufficient **technological and strategic capacity**.

E. Public-private balance

- Private-sector expansion should complement—not undermine—ISRO's scientific and strategic role.

Strategic Importance of Private Space Ecosystem

Space is no longer only a scientific domain.



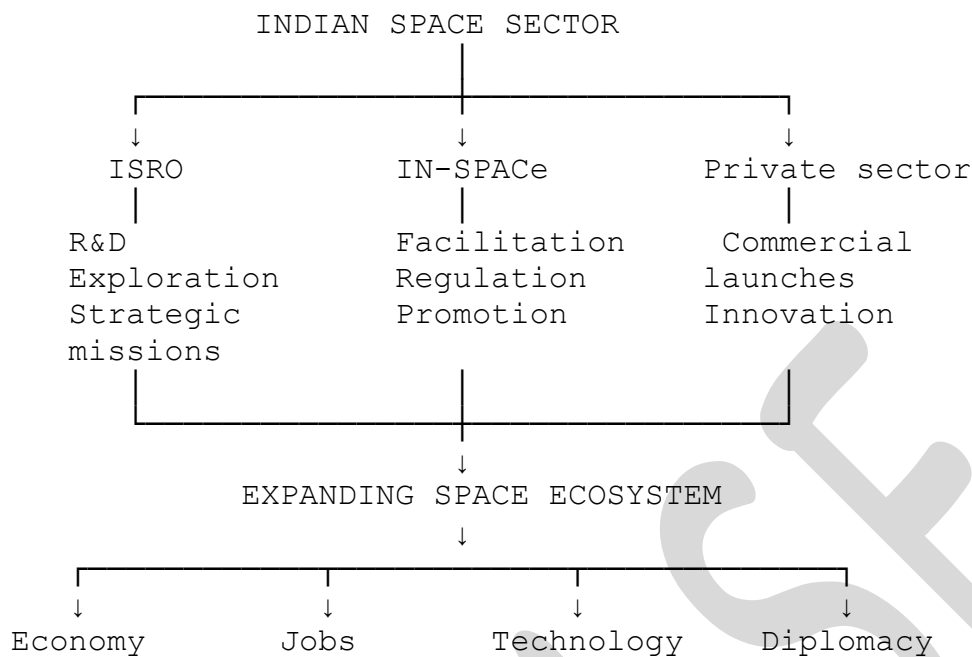
Space capabilities are increasingly becoming a diplomatic and strategic asset, apart from their commercial value.

Way Forward

“ISRO as technology anchor + Private sector as scale engine”

1. **Preserve ISRO's autonomy** in scientific and strategic decision-making.
2. Expand **technology transfer** to Indian industry.
3. Ensure transparent and predictable regulation through **IN-SPACE**.
4. Allow private companies greater participation in commercial launches and services.
5. Maintain public-sector capability in **critical and strategic technologies**.
6. Create mechanisms for **ISRO–industry knowledge sharing**.
7. Strengthen India's space start-up ecosystem through finance, infrastructure and testing facilities.
8. Ensure ISRO has adequate resources for **R&D, exploration and human spaceflight**.
9. Develop a strong domestic supply chain to reduce dependence on foreign components.
10. Build India into a competitive **global space-services and manufacturing hub**.

UPSC Mind Map



★ Prelims Pointers

- **ISRO** → India's primary space research and exploration organisation.
- **IN-SPACE** → promotes, enables and regulates private-sector participation in space.
- **NSIL** → commercial arm associated with the Department of Space.
- **SSLV** → Small Satellite Launch Vehicle; developed by ISRO for small-satellite launch requirements.
- **HAL** → public-sector aerospace and defence company that has received SSLV technology-transfer responsibility.
- Increasing private participation **does not mean privatisation of ISRO**.
- The emerging policy direction emphasises **greater private participation alongside continued ISRO leadership in advanced missions and R&D**.

Probable UPSC Mains Question

Q. “India's transition from an ISRO-centric space programme towards a broader public-private space ecosystem can enhance its economic and technological capabilities.” Discuss the opportunities and challenges of this transition. (250 words)

Keywords: *Space economy • IN-SPACe • technology transfer • SSLV • public-private partnership • commercialisation • strategic autonomy • R&D • space diplomacy • institutional autonomy*

Nepal's Compensation Demand After Devastating Flood

Brief

- A devastating flood in Nepal has revived the debate over **climate justice, Loss and Damage (L&D) finance and the responsibility of high-emitting countries.**
- Nepal, a highly climate-vulnerable Himalayan country with relatively low greenhouse-gas emissions, has sought international financial support for the losses caused by extreme events.

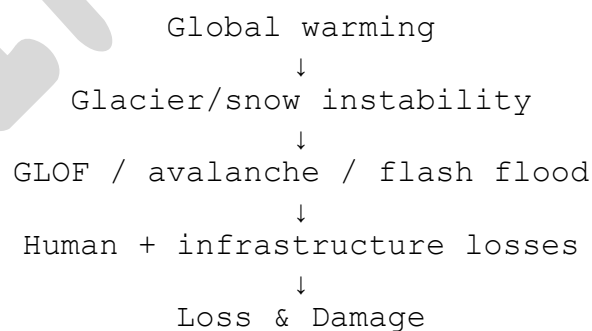


Why is Nepal Vulnerable?

- The **Himalayas, often called the “Third Pole”**, contain vast stores of snow and ice and are highly sensitive to climate change.

Climate change + Himalayan fragility →

- Glacier retreat and destabilisation
- Glacial Lake Outburst Floods (**GLOFs**)
- Glacier/rock avalanches
- Flash floods
- Landslides
- Damage to roads, bridges, villages and hydropower
- Displacement and loss of livelihoods





Climate Justice Argument

- ❑ Nepal's argument is based on the apparent **disproportion** between **contribution and vulnerability**:
 - Countries with relatively low historical emissions can suffer disproportionately from climate impacts generated by global greenhouse-gas accumulation.
 - This raises the principle of **Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC)**.
- ❑ However, an important distinction must be maintained:
 - **Climate responsibility ≠ automatic legal liability.**
 - Attributing a particular disaster to climate change and establishing which country should legally compensate for it involves complex **scientific, political and legal questions**.



Loss & Damage Fund

The **Loss and Damage Fund** emerged from the UN climate negotiations.

Timeline

- **COP27, 2022**
→ Agreement to establish funding arrangements for addressing Loss and Damage.
- **COP28, 2023**
→ Operationalisation of the Fund.

What does it address?

- It seeks to support particularly vulnerable developing countries facing **economic and non-economic losses** arising from climate-related impacts.

Difference

Adaptation

Reduce future climate risks
e.g. flood barriers
Preventive

Loss & Damage

Address residual impacts/losses
e.g. destroyed infrastructure
Recovery/response oriented

✂ **L&D finance should not automatically be equated with legally mandated compensation.**



India–Nepal Dimension

- Nepal's references to major emitters, including India, have added a diplomatic dimension.
- However, India and Nepal share common Himalayan vulnerabilities:

Shared rivers + ecosystems + infrastructure + disaster risks

- Therefore, India's role should involve both:
 - **Disaster relief and humanitarian assistance**
 - **Long-term regional climate resilience**
- Regional cooperation can include:
 - Real-time hydrological data sharing
 - Glacier and glacial-lake monitoring
 - Flood forecasting
 - Cross-border early-warning systems
 - Disaster-response coordination
 - Climate-resilient infrastructure

Challenges

Funding gap

- The scale of climate-related losses is much greater than currently available international finance.

Attribution problem

- Disasters often result from multiple factors:

Climate change + extreme weather + geology + land use + infrastructure + preparedness

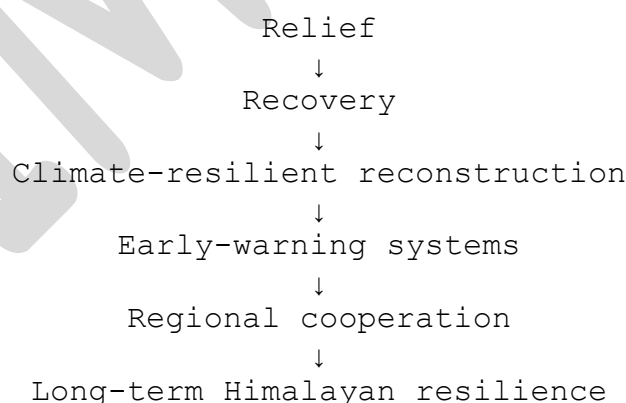
Infrastructure vulnerability

- Rapid infrastructure development in fragile mountain terrain can amplify disaster risks if environmental safeguards are inadequate.

Limited scientific data

- Better Himalayan observation and cross-border data sharing are essential.

Way Forward



1. **Strengthen and adequately finance the Loss & Damage Fund.**
2. Expand **climate attribution and Himalayan scientific research.**
3. Establish integrated **India-Nepal-Bhutan regional early-warning mechanisms.**
4. Make roads, bridges and hydropower projects **climate- and disaster-resilient.**

5. Improve **glacier and GLOF monitoring** using satellites, remote sensing and ground observations.
6. Combine international climate finance with **domestic adaptation and disaster-risk reduction**.

UPSC Conclusion

Nepal's demand highlights a fundamental dilemma of global climate governance: **climate impacts are geographically uneven, while greenhouse-gas accumulation is global**. The appropriate response requires moving beyond episodic disaster aid towards **predictable Loss & Damage finance, climate-resilient development and cooperative Himalayan governance**. For India and Nepal, shared vulnerability provides a strong basis for **regional scientific cooperation and disaster resilience**, alongside broader international climate action.

★ Keywords : *Loss & Damage • Climate Justice • CBDR-RC • Third Pole • GLOF • Climate Finance • Climate Attribution • Himalayan Resilience • Early Warning • Disaster Risk Reduction • Regional Cooperation*

10.09.2026

New GDP Series: Producer Prices & Double Deflation

Brief

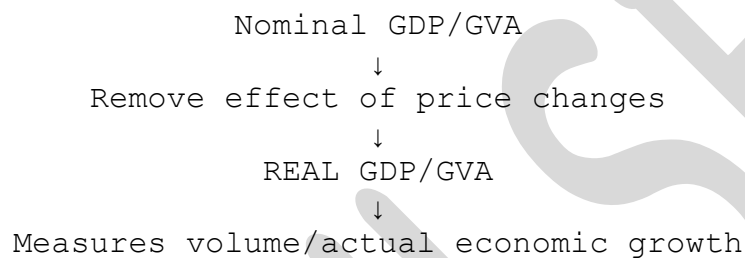
- The **Ministry of Statistics and Programme Implementation (MoSPI)** has overhauled India's GDP methodology under the **new 2022-23 base-year series**.
 - ⊗ A major change is the use of **Producer Price Index (PPI)** and **double deflation** to obtain a more appropriate measure of **real GDP/GVA**.
- The methodological changes have also resulted in revisions to historical growth rates—for example, **January–March 2026 real GDP growth was revised from 7.8% to 8.6%**.

GDP, GVA & the Need for Deflation

Gross Value Added (GVA)

$$\text{GVA} = \text{Value of output} - \text{Intermediate inputs}$$

- ❑ At current prices:
Nominal GVA → value measured using prevailing prices.
- ❑ But GDP growth needs to distinguish:
How much output actually increased vs. how much merely reflects higher prices?
- ❑ Hence, nominal values must be **deflated** to obtain real values.

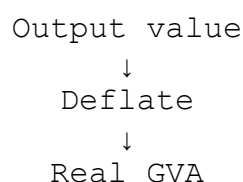


What is a GDP Deflator?

- ❑ A GDP/GVA deflator measures the **price change** associated with domestically produced goods and services.
- ❑ Simplified:
 $\text{GDP Deflator} = (\text{Nominal GDP} \div \text{Real GDP}) \times 100$
- ❑ Therefore:
 - **Nominal GDP** → price + volume changes
 - **Real GDP** → volume change after removing price effects

Single Deflation vs Double Deflation

- ❑ **Earlier approach: Single Deflation**
 - Under the earlier methodology, the value of **output** was generally deflated using an appropriate price index, while input prices were not always separately deflated.



- **Problem**
Suppose: **Input prices** ↑ 20%
But
Output prices ↑ only 5%
- If input and output are not separately adjusted, the calculation may fail to capture the actual change in the sector's **real value added**.

Single vs Double Deflation

<i>Aspect</i>	<i>Earlier approach</i>	<i>New approach</i>
Output	Deflated using available price indices	Deflated separately
Inputs	Often adjusted using the same/general deflator	Deflated separately
Method	Single/general deflation	Double deflation
Accuracy	Could distort real value added	Better reflects actual volume changes

Double deflation means:

$$\text{Real GVA} = \text{Real Gross Output} - \text{Real Intermediate Consumption}$$

✂ Thus, the prices of **both output and inputs** are separately adjusted before calculating real value added.

🎯 **Double Deflation**

Under **double deflation**:

Step 1

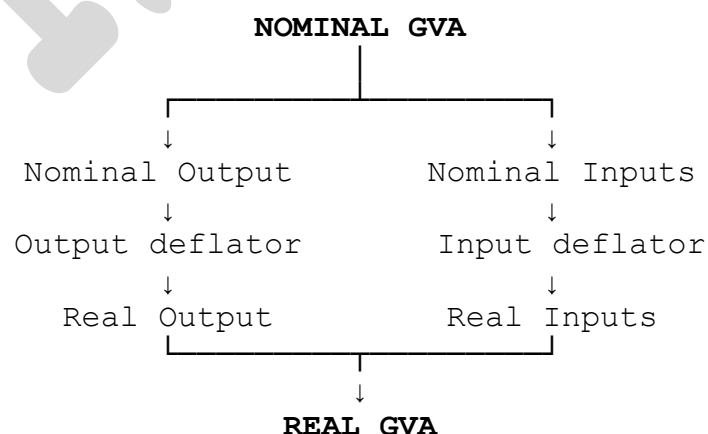
Deflate **output** using an appropriate output-price index.

Step 2

Deflate **intermediate inputs** using an appropriate input-price index.

Step 3

Calculate real GVA.



▪ Why is it better?

- Because **input and output prices do not necessarily move together**.
- Double deflation therefore attempts to capture the **real change in value added more accurately**.

 Why Producer Price Index (PPI)?

- The new methodology uses **PPI** for double deflation.

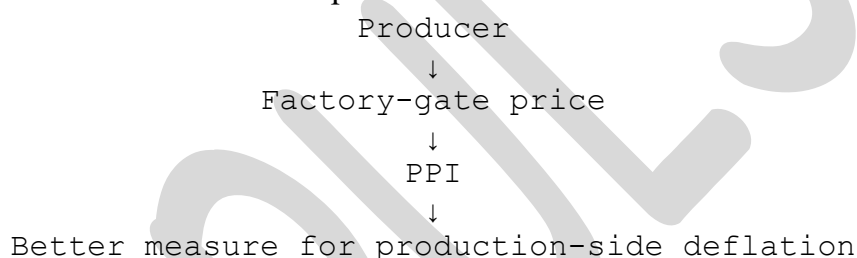
PPI measures:

The prices **received by producers at the factory gate**, generally excluding:

- Taxes
- Trade margins
- Transport margins

Why is this useful?

- Producer prices are more closely connected to the **prices received by producers** than consumer prices.



 Manufacturing Example

- ☐ This is an important conceptual point.

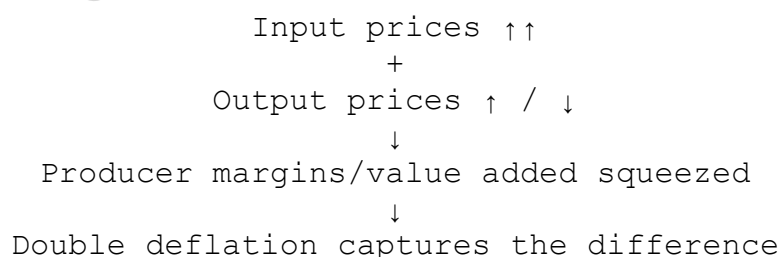
Suppose:

Crude oil/input prices ↑ sharply

But

manufactured-product prices ↑ slowly or fall.

- ☐ Then:



Under certain circumstances, **real GVA growth can exceed nominal GVA growth**.

- ❑ This can appear counter-intuitive.

Why?

If **nominal GVA growth** < **real GVA growth**, the implied GVA deflator becomes **negative**.

- ✂ A negative deflator does **not necessarily mean that physical production fell**. It indicates that the relevant prices of value added declined sufficiently relative to the nominal measure.

Why the Services Sector Also Matters

Problem with WPI

WPI primarily covers goods, whereas services involve substantial labour, rent, utilities and other service-sector costs.

Therefore:

WPI ↓
↓
Old deflator understated actual service-sector cost pressures
↓
Real GVA could be overstated

Conversely, when commodity prices rise faster than actual service-sector costs, the opposite distortion could occur.

Hence, **sector-appropriate deflators are essential**.



Why Past GDP Growth Gets Revised?

- ❑ GDP estimates are **revised routinely** as better and more complete data become available.
- Quarterly estimates

Use a **benchmark-indicator approach**:

Annual benchmark
+
Quarterly indicators
↓
Quarterly GDP estimate

- Annual estimates subsequently incorporate more comprehensive information such as:
 - Company financial results
 - Administrative data
 - Sectoral output data
 - Government statistics

✂ Therefore, methodological changes + improved data can lead to **revisions of historical GDP growth rates**.

Key Changes in New GDP Series

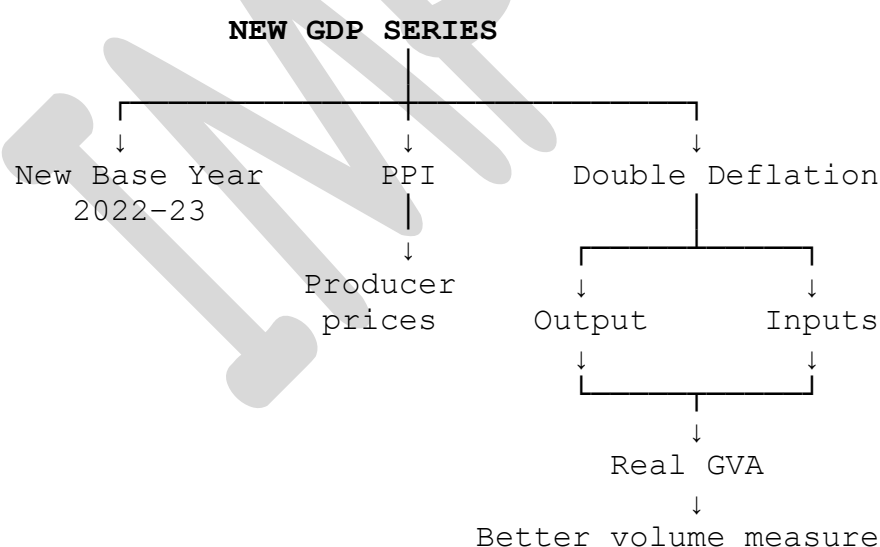
Earlier approach

Base year 2011–12
 Greater reliance on CPI/WPI sub-indices
 Single deflation in several sectors
 WPI used substantially for some services
 Less differentiated input/output adjustment

New methodology

Base year 2022–23
 Greater use of **PPI**
 Greater use of **double deflation**
 More appropriate sectoral price measures
 Separate adjustment of inputs and outputs

Mind Map



★ UPSC Prelims Pointers

- **Nominal GDP** is measured at current prices.
- **Real GDP** removes the effect of price changes.
- **GVA = Output – Intermediate consumption.**
- **Nominal GVA:** measured at current prices.
- **Real GVA:** adjusted for price changes to measure actual volume/output growth.
- **GDP = GVA + Net Taxes on Products**
- **Double deflation** separately adjusts output and input values for price changes.
- **PPI** measures prices received by producers and is useful for production-side price adjustment.
- **WPI primarily covers goods**, making it less suitable as a universal deflator for services.
- A **negative implied deflator** can occur when nominal growth is lower than real growth.
- GDP revisions are a **normal statistical process** as better data and improved methodologies become available.
- The new series uses **2022–23 as the base year**.

Probable UPSC Mains Question

Q. “The adoption of Producer Price Index and double deflation represents an important methodological improvement in India's GDP estimation.” Explain the concept of double deflation and examine its significance for measuring real GVA. **(250 words)**

 **Keywords:** *Nominal GDP • Real GDP • GVA • deflator • PPI • WPI • double deflation • single deflation • input prices • output prices • base year • benchmark-indicator approach • statistical revision*

● **WORDLY WISE**

Democracy is a device that ensures we shall be governed no better than we deserve.

— *George Bernard Shaw*

Market Turbulence & Global Economic Risks

Brief

- Indian equity markets have witnessed heightened volatility amid **geopolitical tensions, rising crude oil prices, foreign capital outflows and tighter global financial conditions**. The **Sensex declined about 1.08%** in the reported session, while the **India VIX** rose nearly 7%.

Major Factors Behind Market Volatility

① Geopolitical tensions

- Escalation of conflict in **West Asia** has increased uncertainty over energy supplies.
- Attacks on energy infrastructure raise the risk of prolonged crude-price pressures.
- Geopolitical uncertainty generally increases **risk aversion** among investors.

② Rising crude oil prices

- Brent crude touched around **\$100/barrel**.
- India's crude basket reached **\$108.91/barrel** as reported in the article.
- India is highly dependent on imported crude → higher prices can:
 - Widen the **Current Account Deficit (CAD)**
 - Increase import bill
 - Put depreciation pressure on the rupee
 - Raise domestic inflation
 - Increase fiscal pressure through fuel-related measures

③ Rupee depreciation

- The rupee slipped beyond **₹95/\$**.
- Higher oil prices increase demand for dollars, while capital outflows can further weaken the rupee.

④ Tighter global financial conditions

- Expectations of a more **hawkish US Federal Reserve** can keep global interest rates elevated.
- US 10-year Treasury yields were around **4.8%** in the article.
- Higher US yields make dollar assets relatively attractive → potential **capital outflows from emerging markets**, including India.

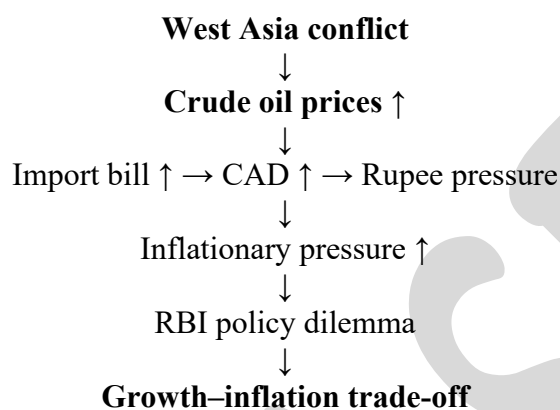
⑤ Foreign Portfolio Investor (FPI) outflows

- Foreign investors reportedly withdrew around **\$1.3 billion** from Indian equities in September.
- Persistent outflows can increase market volatility and put pressure on the rupee.

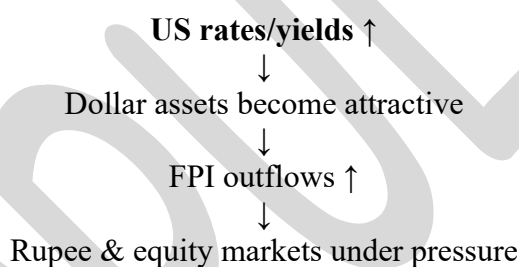
⑥ AI-related concerns

- The **IT sector** has faced greater weakness amid concerns that rapid AI adoption could alter traditional IT-service demand, employment patterns and long-term growth prospects.

Transmission Mechanism



Simultaneously:



India: Key Policy Dilemma

Challenge

Crude ↑
Rupee depreciation
Global yields ↑
Tight monetary conditions
Geopolitical uncertainty
AI disruption

Possible impact

Inflation + CAD
Imported inflation
Capital outflows
Inflation control but weaker demand
Investment uncertainty
IT-sector restructuring

✂ The **RBI Monetary Policy Committee (MPC)** therefore faces a difficult balance between **price stability, financial stability and economic growth**.

Significance for India

- India's relatively strong economic growth can provide a domestic cushion, but prolonged external shocks may affect:
 - Inflation
 - Exchange rate stability
 - Corporate profitability
 - Investment flows
 - Consumption
 - Current account balance

Prelims Pointers

- **India VIX** → measure of expected near-term volatility in the Indian equity market.
- **FPI outflows** can put downward pressure on the rupee.
- Higher crude prices are generally **negative for India's external balance** because of its import dependence.
- US Treasury yields influence global capital allocation.

Probable Mains Question

Q. “Global geopolitical tensions, crude oil prices and tighter financial conditions can transmit external shocks to the Indian economy. Examine the major transmission channels and the policy challenges for India.” (250 words)

AfD Success in Germany — Rise of the Far Right in Europe

Brief

- The **Alternative für Deutschland (AfD)** recorded a major victory in Germany's **Saxony-Anhalt state election**, securing **43.8% votes**, ahead of the **Christian Democratic Union (CDU)** at 17.2%. The development has renewed debate over the rise of right-wing populist politics in Europe.

Why is the AfD's Rise Significant?

- It represents the **strongest state-election performance** by the AfD.
- Germany's mainstream parties have followed a “**firewall**” strategy, refusing political cooperation with the AfD.
- The party's success indicates growing electoral support despite its exclusion from the mainstream political system.
- Germany's political developments have wider implications for the **European Union (EU)**.

Factors Behind the AfD's Growth

① Immigration

- Immigration has remained a major political issue since the **2015 European refugee crisis**.
- Concerns about integration, public services and social cohesion have contributed to voter dissatisfaction.

② Economic uncertainty

- Weak economic growth and high energy costs have increased concerns regarding:
 - Employment
 - Purchasing power
 - Industrial competitiveness

③ Germany's industrial model under pressure

- Germany historically relied heavily on an **export-oriented manufacturing economy**.
- Increasing competition from **China**, particularly in industrial sectors, has challenged this model.

④ Regional disparities

- Former **East Germany** has comparatively weaker economic conditions and an older demographic profile.
- Such regional grievances have provided fertile ground for anti-establishment politics.

⑤ Anti-establishment positioning

- The AfD portrays established parties as unable to resolve immigration and economic problems.
- The “firewall” can reinforce its image as the **outsider/opposition party**.

Broader European Trend



Examples mentioned in the article include:

- **National Rally — France**
- **Brothers of Italy — Italy**
 - **AfD — Germany**

- However, the political circumstances and policy positions of these parties differ, so they should not be treated as identical phenomena.

Implications for Europe

Domestic

- Greater political fragmentation.
- Increased pressure on coalition formation.
- Immigration and asylum policy may become more politically contentious.
- Mainstream parties may face pressure to modify their political agendas.

European Union

- Potential changes in debates over:
 - Migration and asylum
 - EU integration
 - Energy security
 - Relations with Russia
 - Industrial competitiveness
 - EU foreign and security policy

Key Concept: Political “Firewall”

- A **political firewall** refers to an informal commitment by mainstream political parties **not to cooperate with or rely on a particular party**, even when electoral arithmetic might make cooperation possible.

Way Forward

- Address legitimate **economic and regional inequalities**.
- Strengthen integration and migration-management systems.
- Improve energy and industrial competitiveness.
- Restore public trust through effective governance.
- Mainstream parties need to engage with voter concerns while maintaining democratic and constitutional safeguards.

Prelims Pointers

- **AfD → Germany**
- **National Rally → France**
- **Brothers of Italy → Italy**
- **2015 European refugee crisis** was a major turning point in European migration politics.
- Germany's political “firewall” refers to **non-cooperation with the AfD**.

Probable Mains Question

Q. “The rise of right-wing populist parties in Europe reflects a complex interaction of immigration concerns, economic insecurity and declining confidence in established political institutions.” Examine. (250 words)

UK Ban on Goods from Israeli Settlements

Brief

- The **United Kingdom announced restrictions on imports originating from Israeli settlements in the occupied West Bank**, including East Jerusalem. The move comes amid renewed international concern over settlement expansion and its implications for the **two-state solution**.

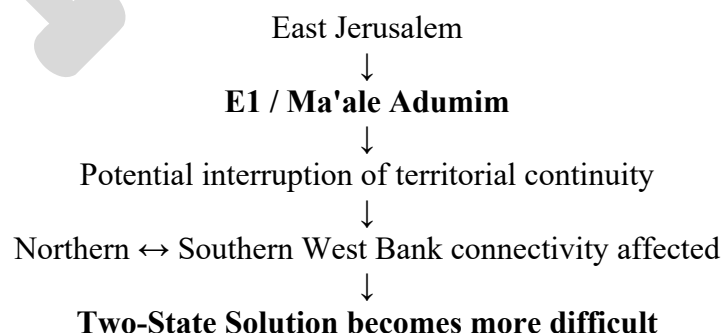
What does the UK measure involve?

- Ban on **agricultural, processed and manufactured goods** produced in Israeli settlements across the occupied West Bank.
- British companies will be restricted from providing **corporate services facilitating settlement expansion**.
- The UK will also restrict certain **arms/export licences** considered to materially contribute to the occupation.
- Settlement goods constitute only a **small portion of overall UK–Israel bilateral trade**.

Why the E1 Corridor Matters?

The **E1 corridor** is an approximately **12 sq km** area between **East Jerusalem** and the **Israeli settlement of Ma'ale Adumim**.

Potential significance of construction in E1:



- ⊗ The area is strategically important because settlement expansion could further separate **East Jerusalem from Palestinian population centres such as Ramallah and Bethlehem.**

West Bank: Oslo II Framework

Under the **1995 Oslo II Accord**, the West Bank was divided into:

<i>Area</i>	<i>Broad arrangement</i>
Area A	Palestinian civil and security control
Area B	Palestinian civil control with Israeli security responsibilities
Area C	Israeli civil and security control

- ✂ **Area C constitutes roughly 60% of the West Bank and contains most Israeli settlements in the territory.**

Major Settlement Zones

- **E1–Ma'ale Adumim:** east of Jerusalem; strategically important for territorial contiguity.
- **Ariel Salient–Barkan Industrial Zone:** northern West Bank; associated with agricultural and industrial activity.
- **Jordan Valley:** extensive agricultural activity and strategic significance.
- **Gush Etzion & South Hebron Hills:** settlement expansion and restrictions affecting Palestinian pastoral communities.

Economic Dimension

Settlement production includes:

Agriculture

- Medjool dates
- Grapes
- Citrus
- Avocados
- Herbs
- Wine

Manufacturing

- Plastics
- Textiles
- Construction materials
- Cosmetics using Dead Sea minerals
- Packaging

- ✂ The UK measure is unlikely to significantly affect Israel's overall economy, which is heavily based on **high technology, defence and pharmaceuticals**. However, businesses directly operating within settlements could face higher costs and market-access difficulties.

International-Law Context

The issue involves broader questions concerning:

- **Occupation and settlement activity**
- **International humanitarian law**
- Palestinian territorial rights
- **Two-State Solution**
- Trade with territories under occupation

The **legal status of Israeli settlements is disputed politically**, although the UN and many governments regard settlements in occupied Palestinian territory as inconsistent with international law. Israel disputes aspects of these characterisations.

Significance

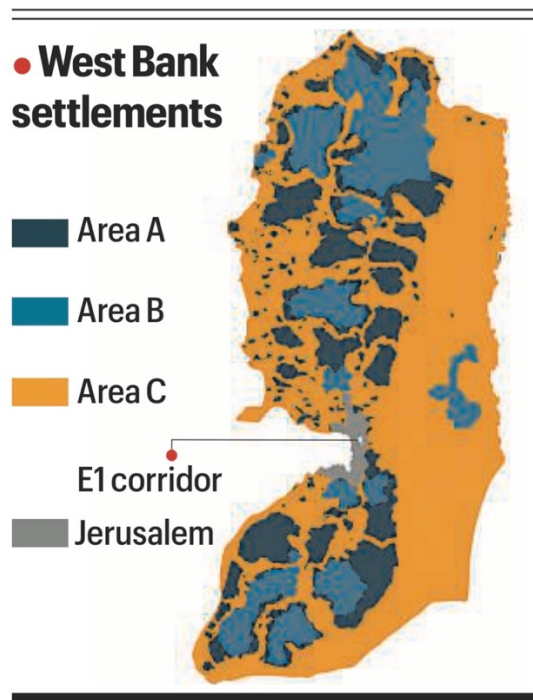
- ✓ **For Palestine:** Potential economic pressure on settlement enterprises and greater international attention.
- ✓ **For Israel:** Possible reputational, commercial and diplomatic costs for settlement-linked businesses.
- ✓ **For UK/EU diplomacy:** Demonstrates the use of **trade and economic instruments as foreign-policy tools**.

Prelims Pointers

- **West Bank** → territory west of the Jordan River.
- **Oslo II Accord** → 1995.
- **Area C** → approximately 60% of West Bank.
- **E1 corridor** → between East Jerusalem and Ma'ale Adumim.
- **Green Line** → armistice line associated with the 1949 Arab-Israeli armistice agreements; not identical to internationally recognised permanent borders.

Probable Mains Question

Q. “Settlement expansion in the occupied West Bank has implications beyond territorial disputes, affecting Palestinian territorial contiguity, economic activity and prospects for a two-state solution.” Discuss. **(250 words)**



11.09.2026

Govind Ballabh Pant: **Legacy, Politics & Historical Complexity**

Brief

- On the **139th birth anniversary of Govind Ballabh Pant**, Uttar Pradesh Chief Minister Yogi Adityanath paid tribute to him as a **freedom fighter, promoter of Hindi and advocate of land reforms**. Pant's legacy has also become part of contemporary political efforts to reclaim and reinterpret the contributions of non-Nehru Congress leaders.

Who was Govind Ballabh Pant?

- Prominent **freedom fighter and Congress leader**.
- First Chief Minister of **Uttar Pradesh**.
- Played an important role in the national movement and provincial politics.
- Associated with **land reforms** and promotion of Hindi.
- Later served as **Union Home Minister**.
- His political career combined **social reform, nationalism and elements of Hindu conservatism**.

Why does Pant's Legacy Matter Today?

Congress legacy

- Pant was a major Congress leader
- But not part of the **Nehru-Gandhi family**
- Contemporary political discourse seeks to highlight such leaders separately
- Pant's legacy therefore becomes part of competing interpretations of India's nationalist heritage.

✂ The BJP has historically celebrated several Congress-era leaders while strongly criticising the political legacy of **Jawaharlal Nehru and the Nehru-Gandhi family**.

Pant: A Complex Political Personality

Pant cannot be easily placed within a simple ideological binary.

Conservative dimensions

- Strong advocate of **Hindi**.
- His politics sometimes incorporated religious-cultural themes.
- His electoral contest with socialist leader **Acharya Narendra Dev** in 1948 reflected ideological tensions within the Congress.

Reformist dimensions

- Supported **land reforms**.
- As a legislator and administrator, participated in significant social and legal reforms.
- He supported the **Hindu Code Bill**, which strengthened women's legal rights relating to **divorce and inheritance** and established monogamy for Hindu men.

Pant and Nehru

Pant and **Jawaharlal Nehru** had a complex relationship.

- They were political colleagues and friends.
- Pant reportedly protected Nehru during a police baton charge during the **Simon Commission protests in Lucknow**.
- At the same time, Pant differed from Nehru on several ideological and political questions.
- Their relationship demonstrates that the Congress freedom movement contained **significant ideological diversity**.

Social & Electoral Dimensions

Pant's legacy also has contemporary electoral relevance because:

- He belonged to the **Kumaoni Brahmin** community.
- His legacy has significance in both **Uttar Pradesh and Uttarakhand**.
- Members of his family subsequently entered or associated with the BJP.
- Consequently, commemorating Pant can simultaneously invoke **nationalist history, regional identity and community representation**.

Broader Significance

Pant's legacy → Multiple dimensions



UPSC Prelims Pointers

- **Govind Ballabh Pant** → first Chief Minister of Uttar Pradesh.
- Prominent participant in India's freedom movement.
- Associated with **Hindi promotion and land reforms**.
- Later served as **Union Home Minister**.
- **Hindu Code Bill** expanded important legal rights of Hindu women.

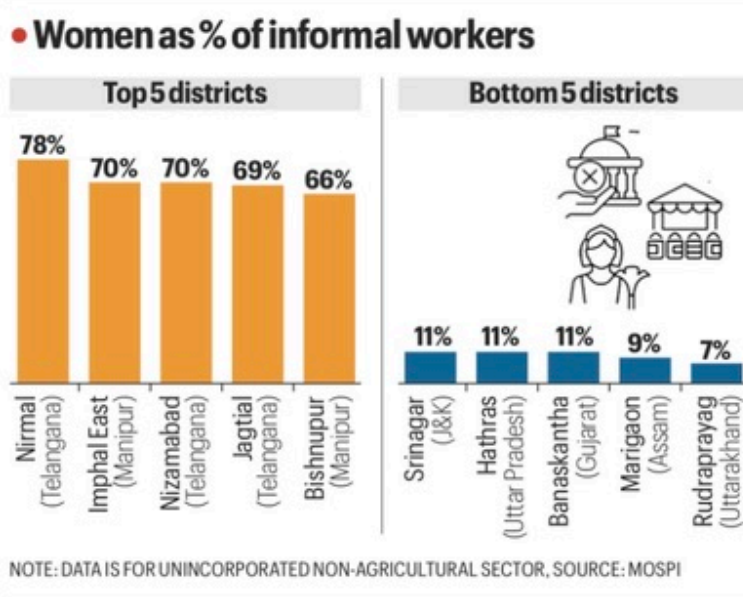
Probable Mains Question

Q. “The legacy of India's freedom movement cannot be understood through a simple ideological binary.” Discuss with reference to Govind Ballabh Pant's political career and contributions. **(250 words)**

District-Level Informal Workforce Data

Key Points

- MoSPI has, for the first time, released district-level estimates from the Annual Survey of Unincorporated Sector Enterprises (ASUSE) 2025.
- The survey covers the unincorporated non-agricultural sector—mainly manufacturing, trade and services.
- Nirmal (Telangana) has the highest share of women among informal workers at 78%; Rudraprayag (Uttarakhand) has the lowest at 6.7%.
- Only 25 districts have women constituting $\geq 50\%$ of their informal workforce; 22 are in South India/North-East.
- The all-India average share of women in informal workers is 29%; 237 districts have at least 33% women.
- Nirmal also has nearly 80% women-owned proprietary establishments, indicating strong female entrepreneurship.
- North 24 Parganas (West Bengal) has the highest number of informal workers (21.3 lakh) and establishments (16.6 lakh).
- Informal economic activity is highly concentrated: the top 10 districts account for $\sim 11\%$ of GVA, while the top 50 account for nearly one-third.
- Dehradun records the highest emolument per hired worker (₹4.6 lakh), despite women comprising only 19% of its informal workforce.
- **Significance:** Granular district data can enable evidence-based, region-specific policymaking for employment, women's participation and informal-sector development.



12.09.2026

India–EU Free Trade Agreement

Brief

- The **European Commission** has forwarded its proposal for concluding the **India–EU Free Trade Agreement (FTA)** to the **European Council**, indicating that negotiations have reached an advanced stage. The agreement requires further approval within the EU and India's domestic ratification procedures.

How will the EU Approve the FTA?



- ✂ The **European Council** comprises the heads of state/government of the **27 EU member states**, along with its President and the President of the European Commission.

Key Features

EU perspective

- EU–India trade in goods and services is already **over €180 billion annually**.
- Agreement would reduce/eliminate tariffs on **96% of EU goods exports to India**.
- Estimated savings of about **€4 billion annually** in duties on European products.
- Greater access to India's large consumer market.

India perspective

- Market access for **more than 99% of India's exports by trade value** to the EU.
- Greater opportunities in:
 - Textiles and apparel
 - Leather and footwear

- Marine products
- Gems and jewellery
- Handicrafts
- Engineering goods
- Automobiles
- The agreement also contains commitments on **services and mobility of skilled professionals**.

Why is the FTA Important?

☐ Trade diversification

Reduces excessive dependence on a limited number of markets.

☐ Supply-chain resilience

COVID-19 exposed vulnerabilities in China-centric supply chains.

☐ China + geopolitical competition

Both India and EU seek to **diversify and de-risk** supply chains while reducing dependence on China in strategic sectors.

☐ Investment

Greater predictability in trade and investment rules can encourage European investment in India.

China Factor

- ☐ Both India and the EU have significant economic links with China.

China-centric supply chains



Pandemic exposes vulnerabilities



De-risking + diversification



India–EU cooperation



More resilient supply chains



The EU has also adopted trade-defence measures against Chinese products, including tariffs on Chinese EVs,

while India maintains high tariffs on imported automobiles.

Potential Benefits for India

- Expansion of **labour-intensive exports**.
- Greater integration into European value chains.
- Increased foreign investment and technology transfer.
- Opportunities for Indian services and skilled professionals.
- Diversification away from excessive dependence on individual markets.
- Potential improvement in India's competitiveness.

Challenges

- Competition from highly productive European firms.
- Need to protect sensitive domestic sectors.
- Differences over **agricultural and dairy market access**.
- Standards, environmental requirements and regulatory barriers.
- Rules of origin and prevention of trade circumvention.
- Balancing tariff concessions with domestic industrial policy.

Strategic Significance

India–EU FTA

- ✓ Trade & investment
- ✓ Services + professional mobility
- ✓ Supply-chain diversification
- ✓ Reduced strategic dependence
- ✓ Technology & investment
- ✓ **Stronger India–EU economic partnership**

Prelims Pointers

- **European Commission** → EU's principal executive body; proposes legislation and implements policies.
- **European Council** → defines broad political direction and priorities; consists of EU leaders.
- **European Parliament** → directly elected EU legislative institution; required to give consent to this agreement.
- FTA primarily seeks to reduce/remove trade barriers between participating economies.

Probable Mains Question

Q. “The India–EU Free Trade Agreement has significance beyond tariff reduction, encompassing services, investment, professional mobility and supply-chain diversification.” Examine its opportunities and challenges for India. **(250 words)**

Baby Orangutans, Wildlife Trafficking & CITES

Brief

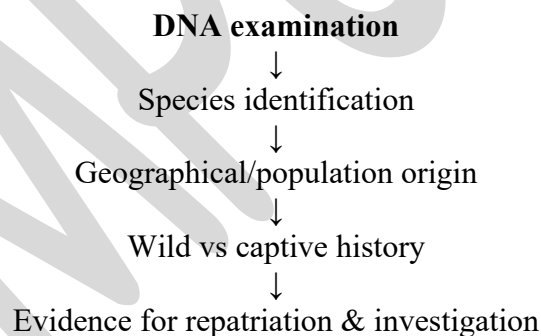
- Five baby orangutans were rescued from a forested area in **Balasore, Odisha**.
- **Indonesia** has contacted Indian authorities and is preparing for possible **repatriation** if investigations and DNA analysis establish that the animals originated in Indonesia.

Why is the Case Important?

- The incident raises concerns about:
 - **Illegal wildlife trafficking**
 - Cross-border movement of endangered species
 - Organised transnational wildlife crime
 - International cooperation under **CITES**
 - Scientific identification and repatriation of trafficked wildlife
- The animals are suspected to be **Sumatran orangutans**, but their exact geographical origin requires genetic confirmation.

Why DNA Testing Matters?

- Physical appearance alone may not conclusively establish origin.



- DNA evidence can therefore help establish whether the animals belong to populations in **Indonesia or Malaysia** and potentially identify their population lineage.

Orangutans: Key Facts

- Native to the rainforests of **Indonesia and Malaysia**.
- Major populations occur on the islands of **Sumatra and Borneo**.
- Orangutans are classified as **Critically Endangered** on the **IUCN Red List**.
- Major threats include:
 - Habitat loss and fragmentation

- Deforestation
- Illegal wildlife trade
- Hunting
- Palm-oil-related habitat conversion

CITES and Orangutans

□ CITES — Convention on International Trade in Endangered Species of Wild Fauna and Flora

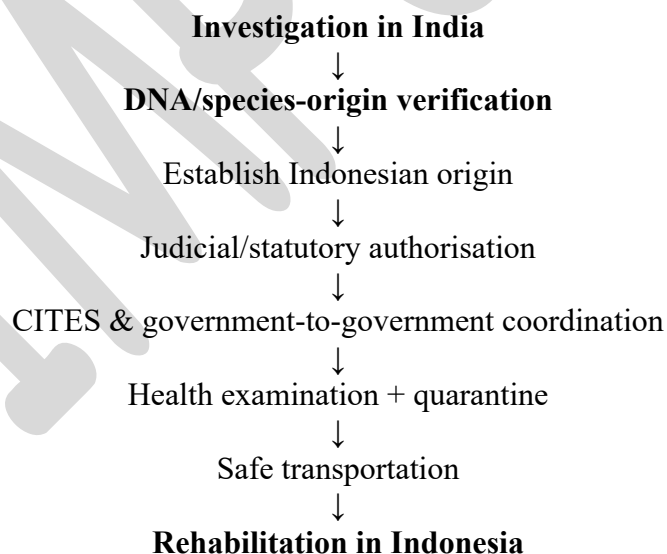
- International treaty regulating **international trade in wild animals and plants**.
- Objective: ensure that international trade does not threaten species' survival.
- Orangutans are listed in **CITES Appendix I**.

□ Appendix I

- Species threatened with extinction
- Commercial international trade generally prohibited
- Exceptional non-commercial movement requires strict regulation and appropriate permits.

✂ Thus, trafficking of orangutans across international borders can attract action under **CITES as well as domestic wildlife laws**.

Possible Repatriation Process



✂ Repatriation is therefore not simply a diplomatic transfer; it requires **legal, veterinary, conservation and welfare safeguards**.

Transnational Wildlife Crime

The case may indicate a trafficking chain involving:

Capture/collection

- **Local traders**
- **Transit countries**
- **False/illegal documentation**
- **Destination country**

✂ Therefore, Indonesia has sought information regarding the **trafficking route, entry point, transit countries, documentation and possible links within Indonesian jurisdiction.**

Significance for India

- Strengthens India's role in combating **illegal wildlife trade.**
- Demonstrates importance of **CITES cooperation.**
- Highlights the role of DNA forensics in wildlife crime investigations.
- Requires coordination among **forest departments, customs, police, CITES authorities and international agencies.**
- Provides an opportunity to establish protocols for **rescue, identification, repatriation and rehabilitation** of trafficked wildlife.

Prelims Pointers

- **CITES** → international treaty on wildlife trade.
 - **Appendix I** → species threatened with extinction; commercial international trade is generally prohibited.
 - **Orangutans** → Indonesia and Malaysia.
 - **Sumatra & Borneo** → major orangutan habitats.
 - **IUCN status** → Critically Endangered.
-

BRICS 2026: Keep Difficult Conversations Alive

Brief

- The **18th BRICS Summit** takes place amid **geopolitical conflicts, disrupted energy supplies, rising costs and fragmentation of the global order**. The expansion of BRICS has increased its diversity, bringing together countries with **different political systems, economic interests and geopolitical alignments**.
- For India, BRICS is important as a platform to preserve **strategic autonomy**, engage competing powers and strengthen its role as a **voice of the Global South**.

BRICS – Core Significance

BRICS is NOT:

- ✗ A military alliance
- ✗ A unified ideological bloc
- ✗ Necessarily an anti-Western grouping

BRICS IS:

- ✓ A platform for **economic, political and diplomatic cooperation**
- ✓ A forum for **Global South representation**
- ✓ A mechanism for **multipolar dialogue**
- ✓ An avenue for cooperation despite geopolitical differences

Core idea: Countries can **cooperate where interests converge and continue dialogue where interests diverge**.

Why BRICS Matters for India

Strategic Autonomy

Multiple global partnerships

↓

India–US + India–EU + India–Russia + India–BRICS + engagement with China

↓

Avoid excessive dependence on one geopolitical pole

↓

India therefore has an interest in making BRICS a **useful and functional forum**, rather than allowing it to become an exclusively anti-Western grouping.

Benefits for India

- Greater **diplomatic manoeuvrability**
- Platform for **Global South concerns**
- Diversification of **trade and supply chains**
- Energy-security cooperation
- Greater use of **national currencies/payment mechanisms**
- Push for reform of global institutions
- Cooperation in **AI and digital technologies**

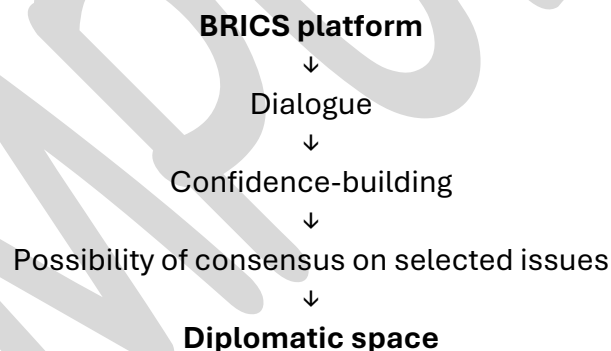
BRICS: Managing Internal Contradictions

The expanded grouping contains countries with divergent interests.

Example: West Asia

Iran ↔ Saudi Arabia ↔ UAE

Despite competing geopolitical interests:



This illustrates the value of “**keeping difficult conversations alive.**”

India–China: Competition + Engagement

India–China relations involve:

Competition

- Border tensions
- Strategic rivalry
- Regional influence
- Economic-security concerns

Interdependence

- Chinese inputs deeply embedded in Indian manufacturing.
- Significant bilateral trade.
- Supply-chain dependence.

BRICS can provide:

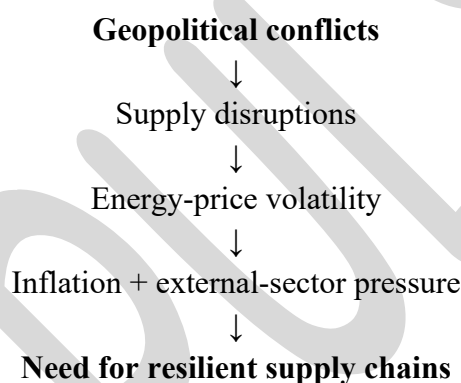
Dialogue + Economic engagement + Confidence-building

However:

BRICS dialogue cannot substitute for bilateral mechanisms to resolve India–China disputes.

New Delhi Declaration 2026 – Major Themes

A. Energy Security

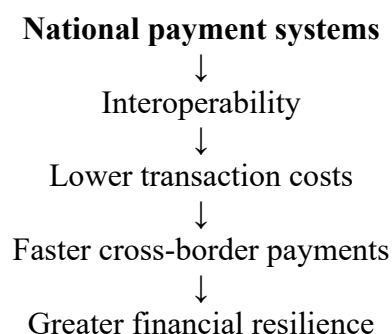


Key message:

- **Essential commodities and energy trade routes should not be weaponised.**
- This is particularly important for developing economies dependent on imported energy.

B. Payment-System Connectivity

Instead of immediately pursuing a common **BRICS currency**, emphasis is placed on:



India's role

- ✓ **UPI architecture** provides a potential model for cross-border digital-payment connectivity.

Prelims Trap

Payment-system integration ≠ Common BRICS currency

AI & Digital Resilience

The Declaration places emphasis on:

- **AI capacity building**
- Digital infrastructure
- Digital resilience
- Technological capability of developing countries

Significance

AI concentration in technologically advanced economies



Technology gap



Developing-country vulnerability



Capacity building + technology cooperation

BRICS & Global South

Traditional model

Western-dominated institutions



Developing countries seek greater representation



BRICS



Push for:

Reform of global institutions

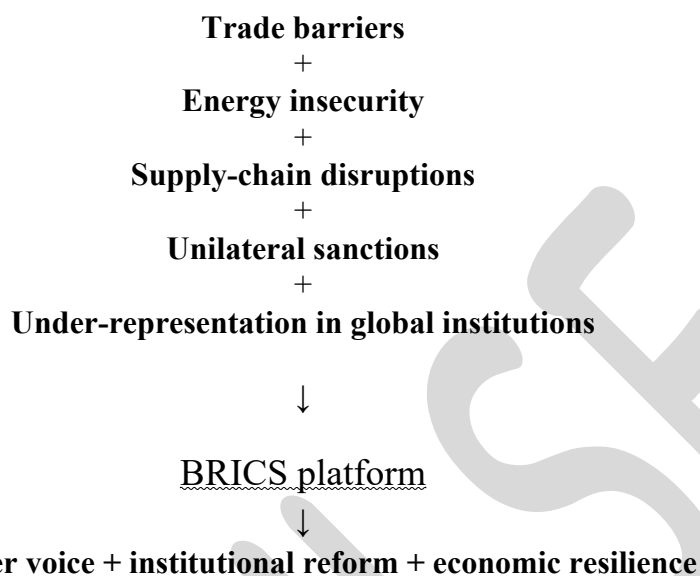
Greater voice for developing economies

Development finance

Technology access

Energy & food security

Global South concerns



Unilateral Coercive Measures

The New Delhi Declaration gives considerable attention to:

- **Unilateral sanctions**
- Unilateral coercive measures
- Trade/economic blockades
- Weaponisation of supply chains

India's concern

India seeks a global economic environment where:

Trade + energy + technology + finance

are not excessively vulnerable to **geopolitical coercion**.

BRICS ≠ ANTI-WESTERN BLOC

Common misconception

BRICS expansion → Anti-Western alliance ❌

Reality

Members have **different relationships with the West**.

- India → expanding economic engagement with US/EU.
- West Asian members → maintain extensive relations with Washington.

- China → seeks accommodation/engagement with the US.
- Russia → has adversarial relations with many Western countries.

Therefore:

BRICS

- Multipolar cooperation
- Different interests
- Negotiation & consensus
- **Not necessarily anti-Western**

BRICS – Evolution of India's Approach

Earlier emphasis

Emerging economies

- Reform global governance
- Multipolarity
- Reduce excessive dependence on dominant powers

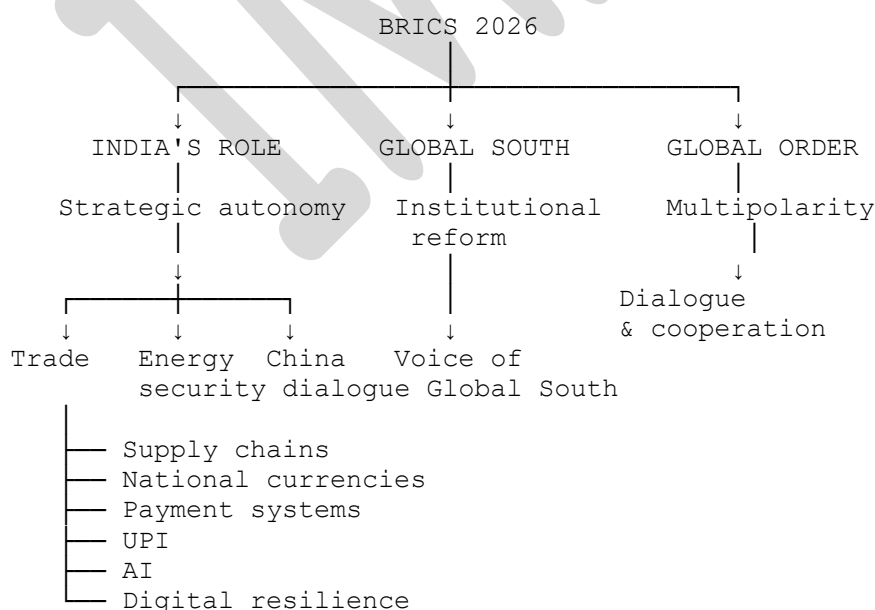
Current emphasis

Practical cooperation

- Supply chains
- Energy
- Digital payments
- AI
- Trade
- Global South
- **Dialogue among competing powers**



MIND MAP



Challenges for BRICS

Challenge

India–China rivalry
Russia–West tensions
West Asian rivalries
Different political systems
Economic asymmetry
Large membership
Implementation gap

Implication

Limits consensus
Geopolitical divergence
Conflicting interests
Difficult common positions
Unequal influence
Consensus becomes harder
Declarations may remain rhetorical

Central dilemma

More members → More representation
but also
More divergent interests → More difficult consensus

Other challenges

- Different economic structures.
- Divergent foreign-policy priorities.
- Implementation gap between declarations and action.
- Risk of becoming primarily a **rhetorical platform**.
- Difficulties in creating common financial mechanisms.

Way Forward for India

India should focus on:

Practical cooperation
↓
Resilient supply chains
↓
Energy security
↓
Payment-system interoperability
↓
AI & digital capacity
↓
Global governance reform
↓

Stronger Global South voice

- India should simultaneously preserve its **economic and strategic engagement with the US, EU and other partners.**

PRELIMS QUICK REVISION

Remember:

- BRICS → cooperation forum, not military alliance.
- **Strategic autonomy** → freedom to pursue national interests without rigid alignment with one power bloc.
- UPI → potential instrument for cross-border payment connectivity.
- **BRICS currency** → payment cooperation should not be confused with creation of a common currency.
- BRICS members have **divergent geopolitical interests.**
- **Energy security and supply-chain resilience** are major areas of cooperation.
- **AI capacity building and digital resilience** are emerging areas.
- BRICS seeks greater representation for the **Global South** in global governance.

Prelims Traps

BRICS ≠ NATO-type alliance

BRICS ≠ anti-Western military/ideological bloc

De-dollarisation discussions ≠ immediate creation of a common BRICS currency

MAINS VALUE ADDITION

Key phrase:

“Cooperation without uniformity”

BRICS demonstrates that countries do not need identical political systems or foreign-policy objectives to cooperate on **trade, energy, technology and financial resilience.**

India's strategic objective:

More options + fewer vulnerabilities + more diplomatic channels

This strengthens India's **strategic autonomy** and allows it to simultaneously engage with **Western powers, Russia, China and the wider Global South.**

Probable UPSC Mains Questions

Q1. “BRICS is increasingly becoming a platform for multipolar diplomacy rather than an anti-Western alliance.” Discuss with reference to India's strategic autonomy. (250 words)

Q2. “The effectiveness of an expanded BRICS will depend upon its ability to convert internal diversity into practical cooperation.” Examine. (250 words)

Q3. How can BRICS contribute to energy security, resilient supply chains and greater financial autonomy for developing countries? (250 words)

Q4. “Keeping channels of dialogue open among competing powers is itself an important diplomatic achievement.” Discuss the significance of BRICS in this context. (250 words)

• BRICS SUMMIT

India's BRICS balancing act

For India, the grouping is not a replacement for the West. Yet, over-reliance on the Western economic order comes with pitfalls, from patent controls to sanctions and tariffs

Trade target

India has been on the receiving end of the weaponisation of the Western financial system.

The US imposed steep tariffs last year amid disagreements in trade talks.

India's decision to purchase Russian oil during the Ukraine war also turned it into a target.

• THE EXPANDING WESTERN SANCTIONS REGIME

Chart 1: Who's imposing sanctions?

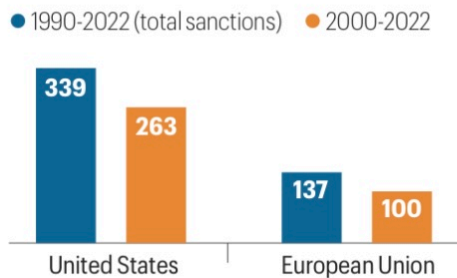


Chart 2: Sanctions on Asia

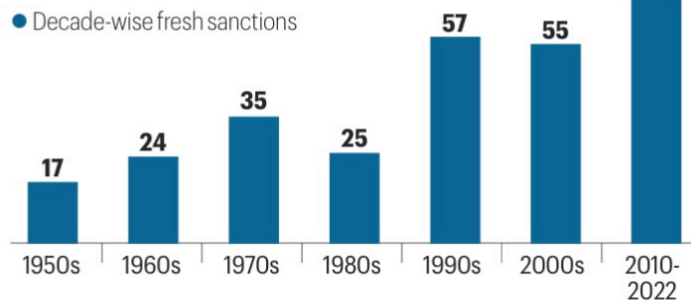


Chart 3: Type of sanctions

Decade	Trade	Financial	Travel	Military aid	Arms
1950s	27	14	8	1	7
1960s	30	29	8	13	29
1970s	47	54	4	23	11
1980s	53	51	21	13	19
1990s	76	147	32	58	69
2000s	71	102	68	71	63
2010-2022	209	327	205	62	67

Source: 'Asphyxiation by Sanctions: Harm, Fear and Smog' working paper written by former RBI governor Urjit R. Patel

1,325

Sanctions imposed globally since 1949

486

of these sanctions have been by the US

- US-led sanctions jumped in recent decades after the collapse of the Soviet Union
- Spectrum of economic sanctions has ballooned from trade to military
- The second-largest sanctioner after the US is the EU

BRICS: CHINA'S WIDENING ECONOMIC DOMINANCE

Brief

- India is hosting the **18th BRICS Summit in New Delhi**. Two decades after its formation, the economic balance within BRICS has changed dramatically, with **China emerging as the dominant economic power**.

BRICS: Evolution

2006 → BRIC formed

- Brazil + Russia + India + China
- Created to provide a platform for **emerging economies** and seek greater representation in global institutions.

2010 → South Africa joined → BRICS

2026 → 11 members

Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Iran, Indonesia, Saudi Arabia and UAE.

Original Objective

Reduce dominance of developed economies → greater voice for emerging economies → reform of global institutions

The “Dragon in the Room”: China’s Economic Dominance

Overall Economic Size

2006

- China was already the largest economy among the original BRIC countries.
- However, China's GDP was **smaller than the combined GDP of Brazil, Russia, India and South Africa**.

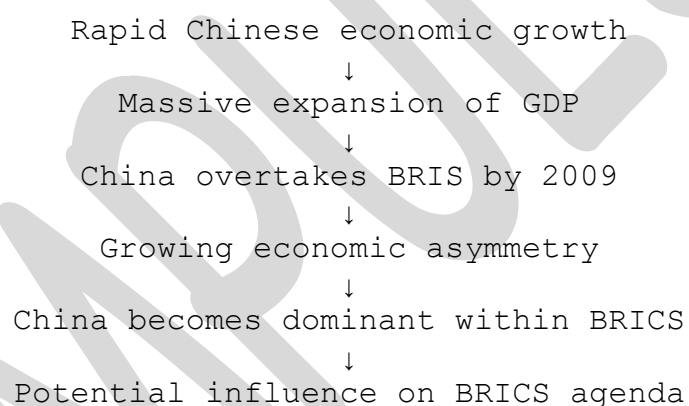
2009

- China overtook the **combined GDP of the other four**.

2026

- China's GDP is **more than twice** that of the other four original members combined, according to the article's data.

Flowchart



China vs Other Major BRICS Economies

<i>Indicator</i>	<i>China</i>	<i>Other original BRICS members</i>
Overall GDP	Dominant	<i>Much smaller collectively</i>
Growth trajectory	Very rapid	<i>More varied</i>
Industrial capacity	Very large	<i>Uneven</i>
Trade/manufacturing weight	Extremely high	<i>Relatively lower</i>
Per-capita prosperity	Improved substantially	<i>Wide variation</i>

India’s trajectory

- Between **2006–2015**, India outperformed several other original BRICS economies in the article's comparison.

- India emerged as the **second-largest economy within the original BRICS group** after China.
- However, China's subsequent expansion created a much larger gap.

GDP Per Capita: A Different Picture

GDP ≠ prosperity of the average citizen

✂ GDP per capita provides a rough indicator of average economic output/income per person, although it does **not fully measure living standards or inequality**.

2006

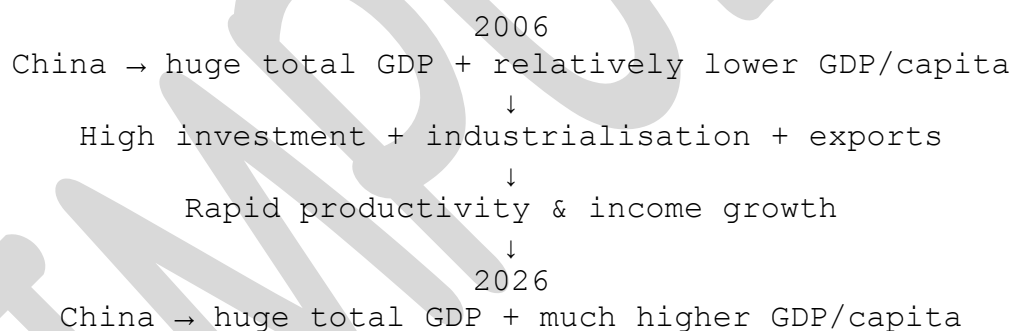
- Average citizens in **Russia, Brazil and South Africa** were substantially richer than the average Chinese citizen.

2026

China has:

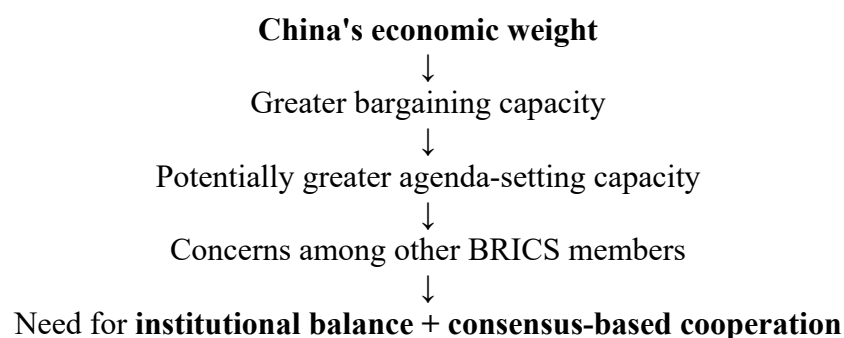
- Surpassed **Brazil** in GDP per capita.
- Become approximately **twice as high as South Africa**.
- Continued to narrow the gap with Russia.
- Remained substantially ahead of India in per-capita terms.

Key transformation



Why China's Rise Matters for BRICS

Economic asymmetry



✂ However, **economic dominance does not automatically translate into political control.**

BRICS members have:

- Different political systems
- Different strategic interests
- Different trade relationships
- Different positions on major geopolitical issues

BRICS: From Anti-G7 Narrative to a More Complex Grouping

Earlier conception



Present reality



Thus, **BRICS is no longer simply a coalition of economically comparable emerging economies.**

Key Structural Contradiction

Original idea

“Emerging economies challenging established economic powers.”

Current reality

One member has itself become an economic superpower.

This creates a fundamental tension:

- Can a grouping designed to balance global economic power maintain internal balance when one member overwhelmingly dominates its economic size?

The answer depends on:

- Consensus-based decision-making
- Institutional design
- Economic diversification
- Interests of other members
- Ability to pursue common objectives despite bilateral rivalries.

India's Perspective

For India, China's dominance has two dimensions:

Opportunity

- BRICS can provide a platform for:
 - Global South cooperation
 - Reform of global financial institutions
 - Greater voice for developing economies
 - Trade and investment cooperation
 - Alternative payment mechanisms

Challenge

- **China's economic scale**
- India-China strategic competition
- Trade imbalance
- Dependence on Chinese intermediate goods
- Possibility of disproportionate Chinese influence within institutions/forums

India's broad approach

Strategic autonomy
↓
Engage China within multilateral forums
+
Develop independent economic capabilities
+
Diversify supply chains
+
Strengthen ties with US/EU/Global South
↓
Greater strategic room for manoeuvre

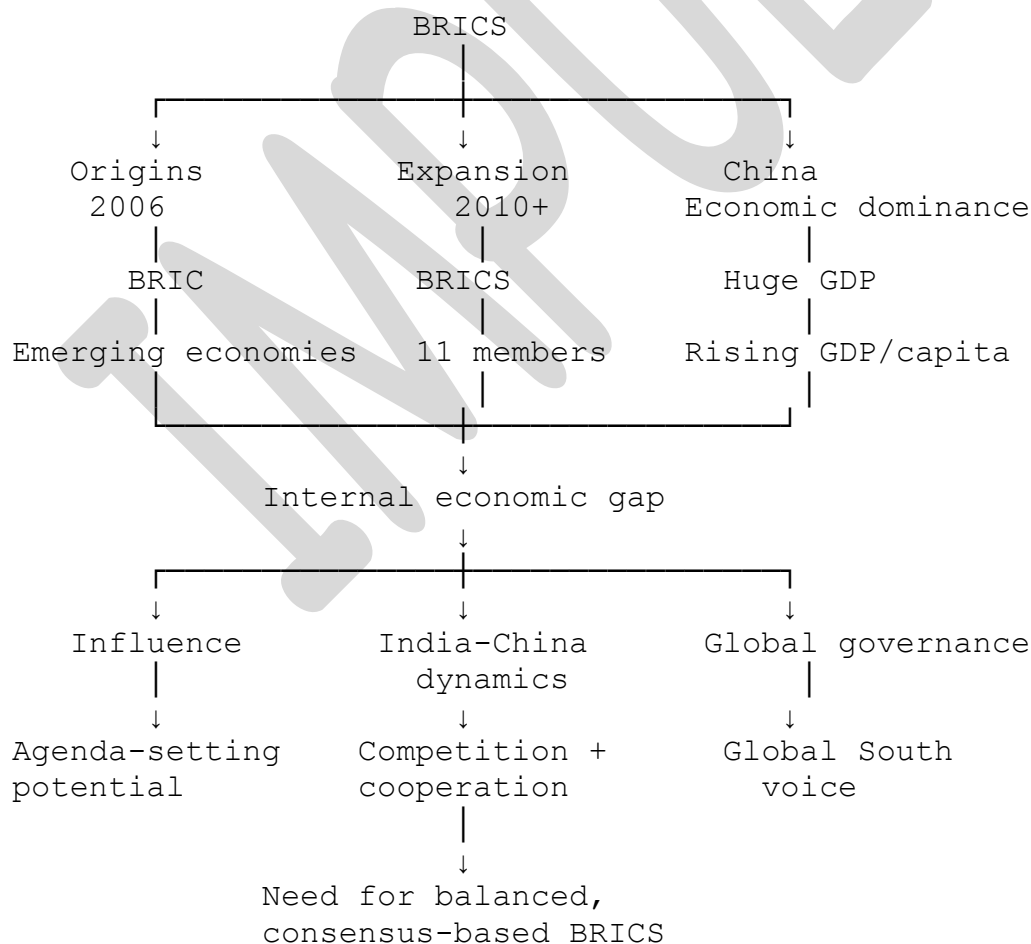


UPSC Prelims Pointers

- BRIC → 2006
- South Africa joined → 2010
- BRICS is an informal grouping, not a military alliance.
- Original members: **Brazil, Russia, India, China**
- Current expanded membership includes **11 countries** according to the article.
- **GDP at current US-dollar prices** is different from:
 - Real GDP
 - GDP at PPP
 - GDP per capita
- **GDP per capita ≠ complete measure of living standards.**
- A country's large GDP does not necessarily imply high per-capita income.
- China's economic rise has substantially altered the **internal economic balance of BRICS**.



MIND MAP



🎯 Mains Perspective

Core Argument

- ✓ The evolution of BRICS demonstrates that **economic power within an institution can change faster than the institution's original purpose**.
- ✓ China's transformation from a relatively poorer emerging economy in 2006 into a global economic superpower has created a significant **intra-BRICS asymmetry**.
- ✓ Therefore, the future relevance of BRICS will depend less on simply aggregating economic power and more on whether its members can convert their **diverse economic and geopolitical interests into practical cooperation** while preventing excessive dependence on any single member.

Probable UPSC Mains Question

Q. "BRICS was conceived as a platform to balance the dominance of developed economies, but China's economic rise has created a new internal asymmetry within the grouping." Discuss the implications for BRICS and India's strategic interests. (250 words)

Bihar Floods:

Why the Solution Lies Beyond Embankments

- **Rainfall paradox:** Bihar received **27% below-normal rainfall**, yet widespread flooding occurred due to **high upstream flows and intense, localised rainfall**.
- **Major rivers affected:** Ganga, Gandak, Kosi, Budhi Gandak, Punpun and Ghaghra crossed danger levels.
- **Backwater effect:** High Ganga levels restricted the discharge of tributaries like the **Gandak and Punpun**, causing water to back up.
- **Embankment problem:** Embankments disconnect rivers from floodplains; **silt deposition raises riverbeds**, reducing channel capacity. Breaches can cause sudden inundation.
- **Beyond embankments:** Flood management should combine:
 - Restoration of **natural drainage channels**

- **Wetland restoration**
- Floodplain protection and scientific **land-use planning**
- Better embankment maintenance
- **Early-warning and evacuation systems**
- **River-space approach:** Allow rivers adequate **floodplain space** to safely accommodate high discharges.
- **Inter-state coordination:** Better coordination is needed on **reservoir releases and basin-level water management**.
- **Farakka & Ganga Treaty:** Bihar argues that the **Farakka Barrage and 1996 India-Bangladesh Ganga Water Sharing Treaty** affect sediment and flow regimes; their precise contribution to Bihar's flooding remains **contested**.
- **Way forward:** Future Ganga-water arrangements should incorporate **updated flow data, siltation concerns and climate-change projections**, with stronger **inter-state and transboundary cooperation**.

● **WORDLY WISE**

He who has great
power should use it lightly.

— *Seneca*

YEMEN CRISIS:

HOUTHIS, PERIM ISLAND & STRATEGIC CHOKEPOINTS

Brief

- The **Houthi movement** reportedly reached **Perim Island (Mayyun)** in the **Bab-el-Mandeb Strait** after Yemeni government forces withdrew from the island and the nearby coastal town of **Dhubab**.
- The development is significant because Bab-el-Mandeb is a major maritime chokepoint connecting the **Red Sea with the Gulf of Aden and the Indian Ocean**.

GEOGRAPHY: BAB-EL-MANDEB

Bab-el-Mandeb = “Gate of Tears”

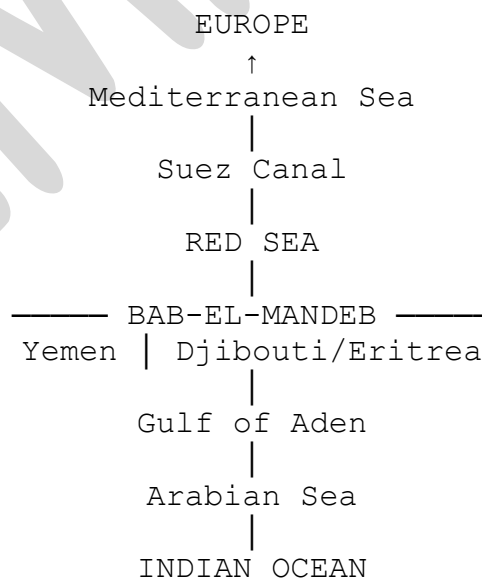
It is a narrow maritime passage between:

Yemen 🇴🇴
↕
Djibouti 🇩🇯 + Eritrea 🇪🇪

It connects:

Red Sea → Bab-el-Mandeb → Gulf of Aden → Arabian Sea → Indian Ocean

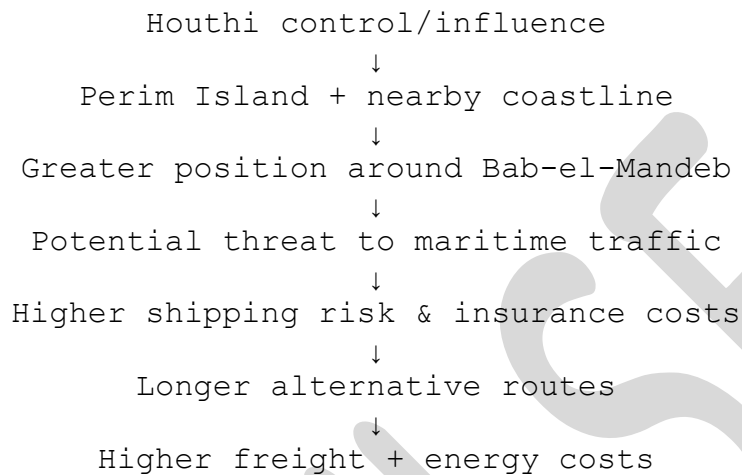
Strategic location



WHY IS PERIM ISLAND IMPORTANT?

Perim Island (Mayyun) lies in the **Bab-el-Mandeb Strait** and has strategic significance because of its location close to the maritime passage.

Strategic chain



⚠ Important: Control of Perim does not automatically mean complete control of the entire Bab-el-Mandeb. Maritime access also depends on naval capability, coastal control and the wider military situation.

WHY BAB-EL-MANDEB MATTERS TO THE WORLD

Bab-el-Mandeb is a **global maritime chokepoint**.

It is particularly important for:

- Oil and petroleum products
- Container shipping
- Asia–Europe trade
- Suez Canal traffic
- Europe–Asia supply chains

Suez–Bab-el-Mandeb connection





✂ Therefore, disruption in Bab-el-Mandeb can have consequences far beyond Yemen.

BAB-EL-MANDEB VS STRAIT OF HORMUZ

These two chokepoints are geographically different but strategically interconnected.

<i>Feature</i>	<i>Bab-el-Mandeb</i>	<i>Strait of Hormuz</i>
Location	Red Sea entrance	Persian Gulf entrance
Connects	Red Sea–Gulf of Aden	Persian Gulf–Gulf of Oman
Key countries	Yemen, Djibouti, Eritrea	Iran, Oman, UAE
Major significance	Asia–Europe shipping/Suez route	Global oil & gas exports
Strategic concern	Houthi attacks/maritime insecurity	Iran-related maritime tensions

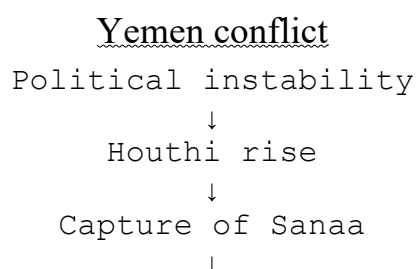
UPSC trap ⚠

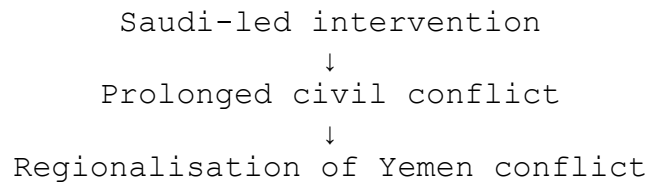
Bab-el-Mandeb is NOT located between Iran and Oman.

That is the **Strait of Hormuz**.

WHO ARE THE HOUTHIS?

The **Houthis (Ansar Allah)** are a Yemeni political and armed movement originating largely from Yemen's **Zaidi Shia** community.





- ✓ **Iran** is widely regarded as providing varying forms of support to the Houthis, although the nature and extent of that relationship is an important subject of analysis.

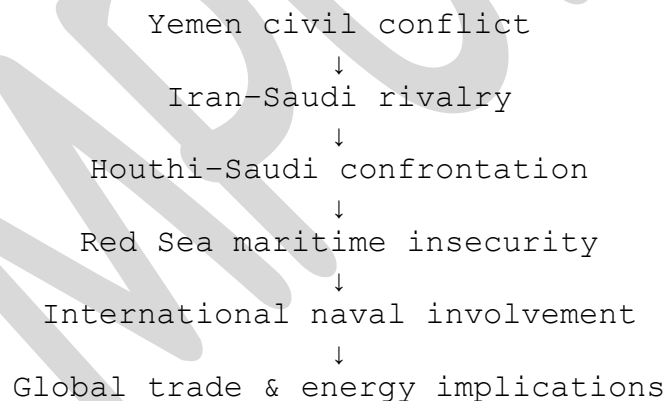
THE REGIONAL DIMENSION

The Yemen conflict is no longer purely an internal Yemeni conflict.

It intersects with:

- **Iran–Saudi strategic rivalry**
- Red Sea maritime security
- Israel–Palestine conflict
- US regional military presence
- Gulf security
- Global energy markets
- International shipping

Regionalisation



IMPACT ON GLOBAL ENERGY SECURITY

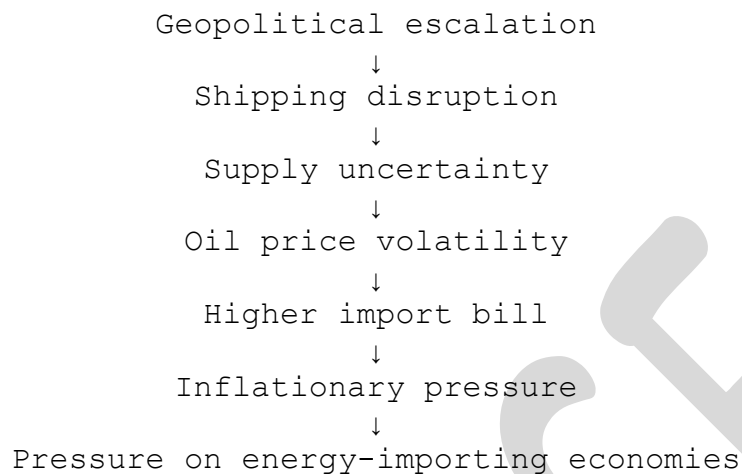
Any sustained disruption around Bab-el-Mandeb can create:

Shipping risk

- ✓ higher insurance premiums
- ✓ rerouting of vessels
- ✓ longer voyages
- ✓ higher freight costs

- ✓ supply-chain disruption
- ✓ potential inflationary pressure.

Possible oil-price channel



✂ For **India**, this is particularly relevant because India is a major importer of crude oil and is highly integrated into global shipping networks.

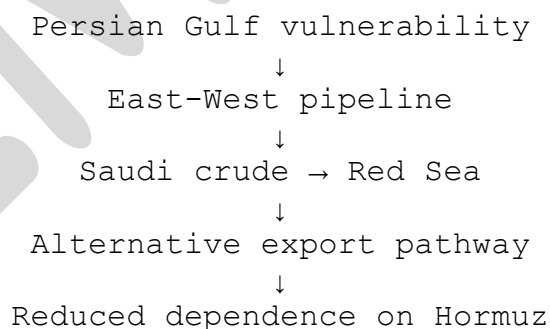
SAUDI ARABIA'S EAST-WEST PIPELINE

The article highlights Saudi Arabia's **East-West oil pipeline**.

Strategic purpose

- It provides Saudi Arabia with an alternative route to transport crude from its **eastern oil-producing region toward the Red Sea**, potentially reducing reliance on maritime routes through the Strait of Hormuz.

Strategic logic



UPSC concept: Strategic redundancy

Countries develop:

- Alternative pipelines
- Multiple ports
- Strategic petroleum reserves

- Diversified suppliers
 - Alternative shipping routes
- to improve **energy security**.

SIGNIFICANCE FOR INDIA

Economic

- **India–Europe** trade depends significantly on maritime connectivity.
- Red Sea disruptions can increase shipping time and freight costs.
- Longer routes around the **Cape of Good Hope** can raise fuel and insurance expenses.

Strategic

- India has growing interests in the **Western Indian Ocean and Arabian Sea**.
- Maritime security affects India's trade and energy security.
- Instability near Bab-el-Mandeb can affect India's broader **Indo-Pacific–West Asia–Europe connectivity**.

Diplomatic

India has interests in maintaining:

- Freedom of navigation
- Safe sea lanes
- Regional stability
- De-escalation
- Protection of commercial shipping

MULTIPLE MARITIME CHOKEPOINTS

GLOBAL MARITIME CHOKEPOINTS

Strait of Hormuz

↓
Persian Gulf → Global energy markets

Bab-el-Mandeb

↓
Red Sea → Suez → Europe-Asia trade

Strait of Malacca

↓
Indian Ocean → Pacific Ocean

Suez Canal

↓
Mediterranean ↔ Red Sea

Panama Canal

↓
Atlantic ↔ Pacific

Key idea : *Chokepoint + geopolitical instability = global economic vulnerability*

MAJOR CHALLENGES

1. Maritime insecurity

Attacks or threats can disrupt commercial shipping.

2. Energy-price volatility

Geopolitical risk can increase oil-market uncertainty.

3. Supply-chain disruption

Longer shipping routes increase cost and delivery time.

4. Regional escalation

Yemen can become an arena for wider Iran–Gulf/US regional competition.

5. Humanitarian crisis

Continued conflict worsens Yemen's already severe humanitarian situation.

6. Internationalisation of conflict

Greater external military involvement can complicate de-escalation.

WAY FORWARD

Sustainable solution requires a combination of:

Ceasefire & political dialogue
+
Yemeni-led peace process
+
Protection of commercial shipping
+
Regional diplomatic engagement
+
Humanitarian assistance
+
Diversification of energy & shipping routes
↓
Long-term regional stability



PRELIMS QUICK REVISION

Bab-el-Mandeb

- Maritime chokepoint.
- Connects **Red Sea and Gulf of Aden**.
- Located between **Yemen and the Horn of Africa**.
- Important for **Suez Canal-linked Asia–Europe trade**.

Perim/Mayyun

- Yemeni island.
- Located in the **Bab-el-Mandeb Strait**.
- Strategically important because of its location near the maritime passage.

Strait of Hormuz

- Connects **Persian Gulf and Gulf of Oman**.
- Lies between **Iran and Oman**.
- Major global energy chokepoint.

Red Sea

Mediterranean → Suez Canal → Red Sea → Bab-el-Mandeb → Gulf of Aden → Indian Ocean

🎯 PROBABLE UPSC MAINS QUESTIONS

Q1. “Maritime chokepoints have acquired increasing strategic significance amid geopolitical fragmentation.” Discuss with reference to Bab-el-Mandeb and the Strait of Hormuz. (250 words)

Q2. How can instability around the Bab-el-Mandeb Strait affect India's energy security, trade and inflation? (250 words)

Q3. The Yemen conflict has evolved from a domestic political crisis into a wider regional security problem. Examine. (250 words)

One-line conclusion

The Bab-el-Mandeb crisis demonstrates that geopolitical instability at a narrow maritime chokepoint can rapidly translate into global consequences for trade, energy security and supply chains.

● Bab El-Mandeb: Gateway To Red Sea



INDIA'S FOREX RESERVES: RECORD GAIN & EXTERNAL RESILIENCE

Brief

- India's foreign exchange reserves recorded a **record weekly increase of about \$44.9 billion**, reaching **\$785.71 billion as on September 4, 2026**, according to the article citing RBI data.
- India consequently moved ahead of Russia in the article's ranking of countries by forex reserves.

Global position mentioned in the article

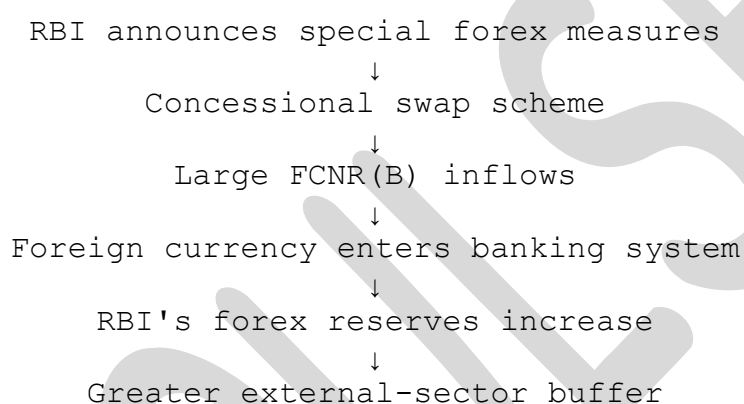
<i>Rank</i>	<i>Country</i>	<i>Forex reserves</i>
1	 China	~\$3.85 trillion
2	 Japan	~\$1.21 trillion
3	 Switzerland	~\$1.09 trillion

UPSC point: Forex reserves are an important indicator of a country's external-sector resilience, but **higher reserves do not automatically mean a stronger economy in every respect.**

WHAT CAUSED THE RECORD INCREASE?

The extraordinary weekly increase was primarily associated with **large inflows into FCNR(B) deposits under the RBI's concessional swap arrangement.**

Article's sequence



The article states that the special forex drive announced on **June 5** became operational on **June 8**.

FCNR(B): PRELIMS CONCEPT

FCNR(B) = Foreign Currency Non-Resident (Bank) Account

It is a deposit account that allows eligible **Non-Resident Indians (NRIs)** to hold deposits in specified foreign currencies.

Key characteristics

- Maintained in **foreign currency**.
- Helps NRIs avoid direct exposure to fluctuations between the rupee and the foreign currency in which the deposit is denominated.
- Interest income on FCNR(B) deposits is generally treated differently from ordinary resident rupee deposits under India's tax framework.
- FCNR(B) deposits are an important source of **foreign-currency resources for Indian banks**.

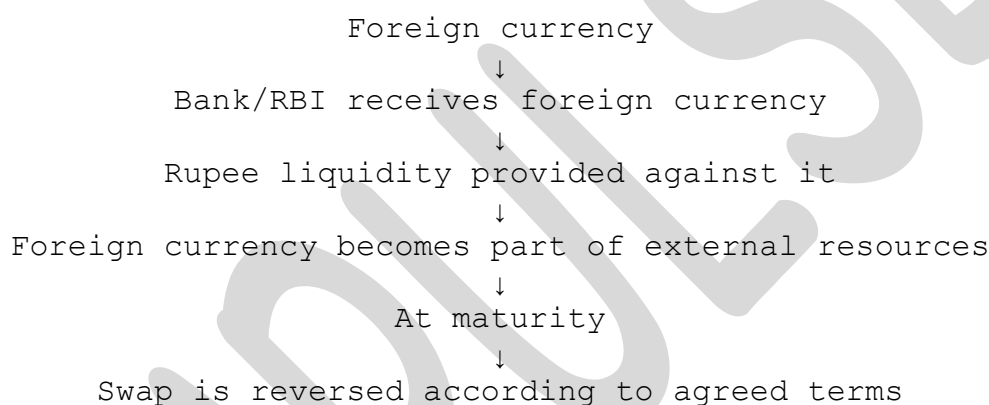
⚠ Do not confuse

<i>Instrument</i>	<i>Basic feature</i>
NRE account	Rupee-denominated
NRO account	Rupee-denominated; used for income earned in India
FCNR(B)	Foreign-currency denominated

WHAT IS A CURRENCY SWAP?

A **currency swap** is an arrangement in which two parties exchange currencies and agree to reverse the transaction according to **predetermined terms**.

Simplified mechanism



Why use swaps?

- Encourage foreign-currency inflows.
- Improve banking-system foreign-currency liquidity.
- Strengthen external buffers.
- Provide temporary support to foreign-exchange management.

WHY WAS THE WEEKLY RISE EXCEPTIONAL?

As reported:

- **September 4:** +\$44.9 billion
- Previous record weekly increase: **\$16.7 billion** in the week ended August 27, 2021.

Thus, the latest increase was **more than 2.5 times** the previous record.

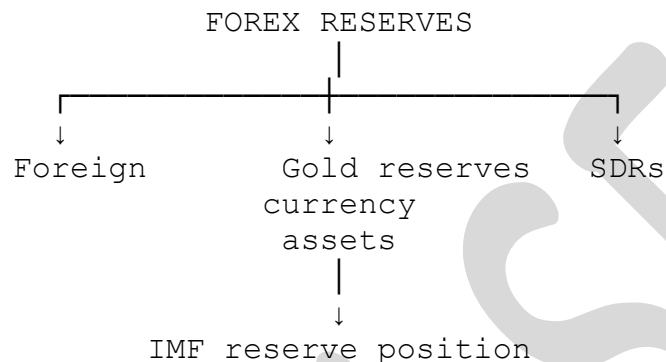
Important analytical point

- ✓ The increase should **not be interpreted simply as \$44.9 billion of new permanent capital entering India.**

- ✓ A significant part was associated with a **swap arrangement**, meaning the composition and liability implications of the reserves matter.

WHAT ARE INDIA'S FOREX RESERVES?

India's foreign exchange reserves are broadly composed of:



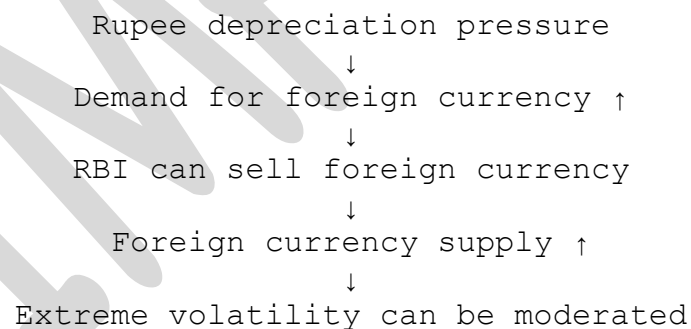
Major component

Foreign Currency Assets (FCA) generally constitute the largest component of India's reserves.

WHY DO FOREX RESERVES MATTER?

1. Defending the rupee

When excessive depreciation pressures arise, the RBI can use foreign-exchange resources to intervene in the market.



⚠ RBI intervention is generally aimed at **managing excessive volatility**, not guaranteeing a particular exchange rate.

2. Import security

Forex reserves provide a buffer for paying for essential imports such as:

- Crude oil

- Natural gas
- Machinery
- Electronics
- Critical raw materials

3. External debt confidence

Adequate reserves can improve confidence in India's ability to meet **external payment obligations**.

4. Crisis management

Large reserves provide a cushion against:

- Sudden capital outflows
- Global financial shocks
- Commodity-price spikes
- External financing stress

INDIA'S EXTERNAL RESILIENCE

High reserves + diversified external financing

Forex reserves
+
Remittances
+
Service exports
+
FDI/FPI
+
External trade
+
Prudent external debt management
↓
External-sector resilience

However, reserves are only **one component** of external stability.

LIMITATIONS OF HIGH FOREX RESERVES

1. Opportunity cost

Holding large quantities of low-risk foreign assets may involve lower returns than alternative domestic investments.

2. Sterilisation challenge

Foreign-exchange intervention can inject rupee liquidity into the banking system, requiring monetary sterilisation when necessary.

3. Valuation effects

Changes in exchange rates and international asset prices can alter the dollar value of reserves even without equivalent underlying flows.

4. Not unlimited

Reserves can fall rapidly during:

- Capital outflows
- Oil-price shocks
- Currency crises
- Large external financing requirements.

5. Swap-related liabilities

Reserve increases arising from swap arrangements should be assessed alongside the corresponding obligations.

KEY DISTINCTION: RESERVES ≠ FOREIGN CAPITAL INFLOW

This is a potential UPSC Prelims trap.

A rise in reserves can result from several factors:

Forex reserves ↑

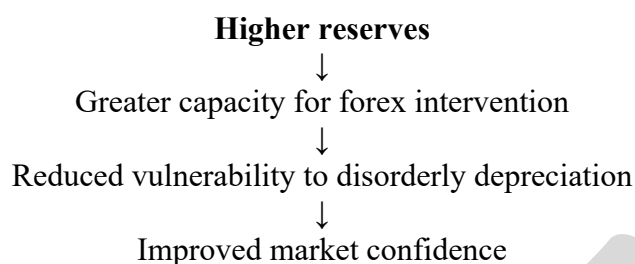
- Foreign investment inflows
- Export receipts
- Remittances/other inflows
- RBI market operations
- Gold valuation changes
- Currency/asset valuation changes
- Swap transactions

Therefore:

- Every increase in forex reserves does not necessarily represent an equivalent increase in permanent foreign investment.

IMPLICATIONS FOR THE RUPEE

Positive effects



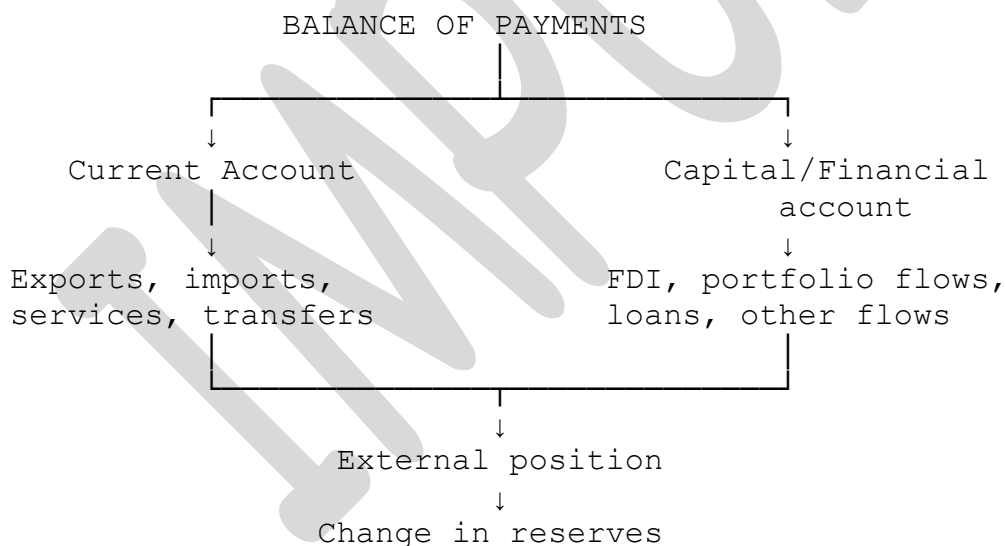
But:

Large reserves ≠ fixed exchange rate

India follows a **market-determined exchange-rate system with RBI intervention to manage excessive volatility**, rather than maintaining a permanently fixed rupee-dollar rate.

LINK WITH BALANCE OF PAYMENTS

Forex reserves are closely connected with India's **Balance of Payments (BoP)**.



PRELIMS QUICK REVISION

Foreign Exchange Reserves

- Held/managed primarily by the **RBI**.
- Include **foreign currency assets, gold, SDRs and India's reserve position in the IMF**.

- Used as an external financial buffer.

FCNR(B)

- **Foreign Currency Non-Resident (Bank) deposit.**
- Denominated in foreign currency.
- Available to eligible NRIs.

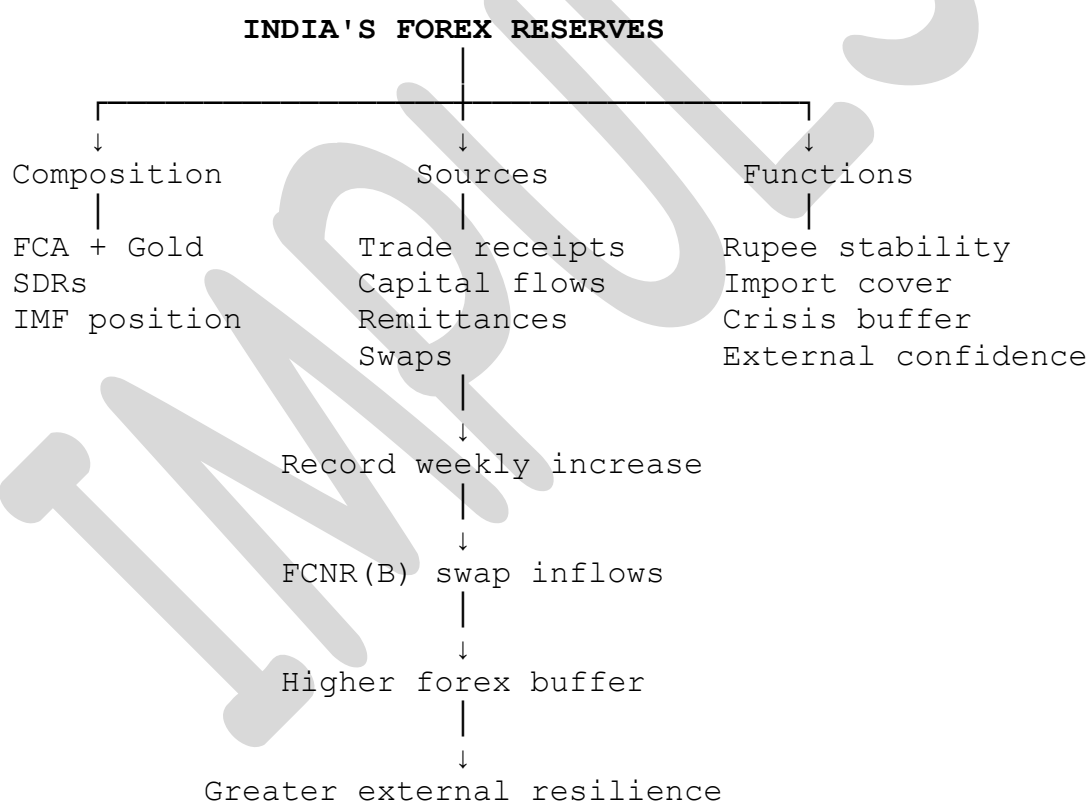
Currency Swap

- Exchange of currencies with an agreement to reverse the transaction under specified conditions.
- Can be used to strengthen foreign-currency liquidity.

RBI and Rupee

- RBI can intervene in the foreign-exchange market.
- Intervention can involve buying/selling foreign currency.
- Objective is not necessarily to defend a predetermined exchange-rate level.

MIND MAP



MAINS VALUE ADDITION

Core argument

- India's record rise in forex reserves demonstrates the importance of maintaining a strong **external-sector buffer** amid global financial and

geopolitical uncertainty. However, the quality and source of reserve accumulation matter as much as the headline number.

- A sustainable external position requires a combination of:
adequate reserves + export competitiveness + stable capital inflows + strong services exports + manageable external debt + diversified energy imports.

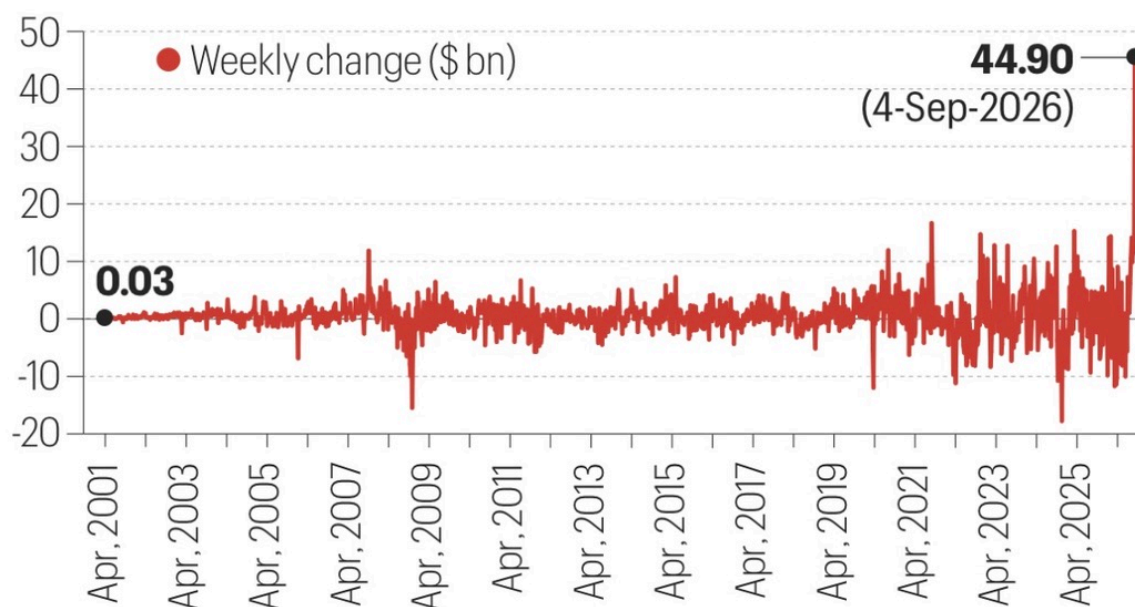
Probable UPSC Mains Question

Q. “Adequate foreign exchange reserves are necessary but not sufficient for external-sector stability.” Discuss with reference to India's recent reserve accumulation and the role of the RBI. (250 words)

One-line conclusion

Forex reserves provide India with financial shock absorbers; long-term external resilience, however, ultimately depends on strengthening the country's underlying balance-of-payments fundamentals.

● FX reserves rise by record \$45 bn in a week



NOTE: FIGURES ARE WEEK-ON-WEEK CHANGE IN FX RESERVES, SOURCE: RBI

• CHINA'S ECONOMIC HEFT

CHART 1: Its economy is far larger than others in BRICS

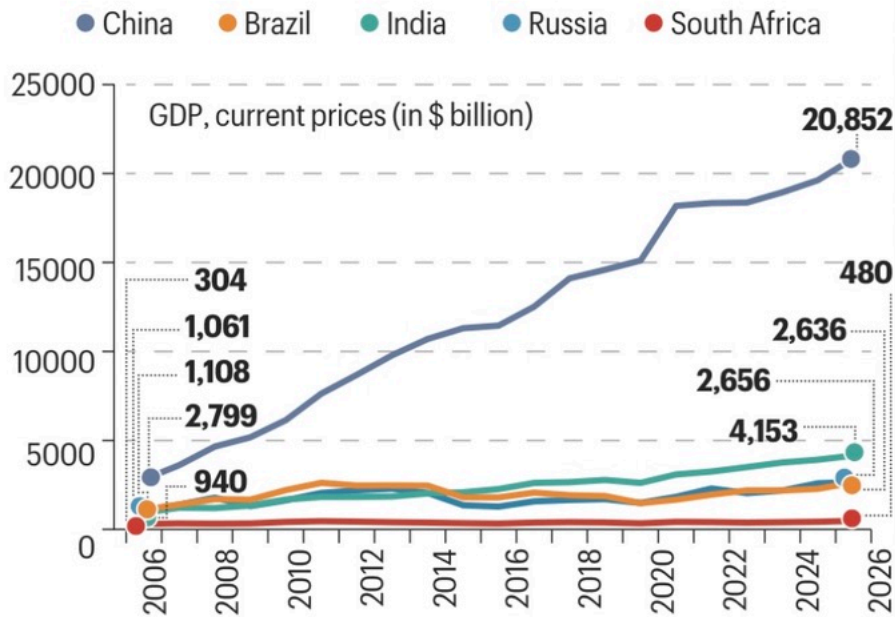
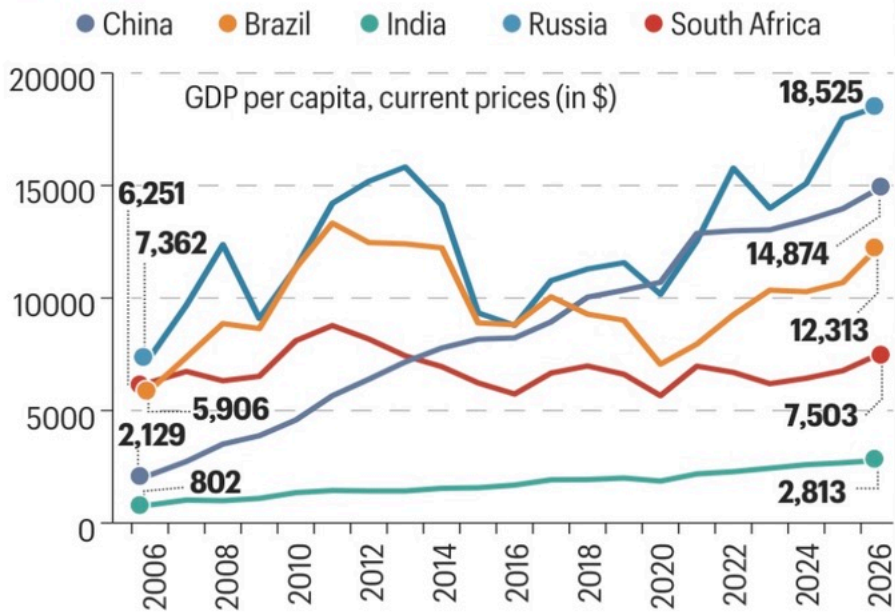


CHART 2: Average prosperity: Second last to second best



14.09.2026

COPPER PRICE SURGE:

TARIFFS, INVENTORIES & GLOBAL ECONOMY

Brief

- Copper prices on the **London Metal Exchange (LME)** reached a record **\$14,767.5 per tonne on September 9**, after remaining above \$14,000/tonne for much of August.
- Normally, rising copper prices are interpreted as a sign of strengthening economic activity. However, the latest rally is unusual because it is occurring amid **trade tensions, geopolitical uncertainty and concerns over future US tariffs**.

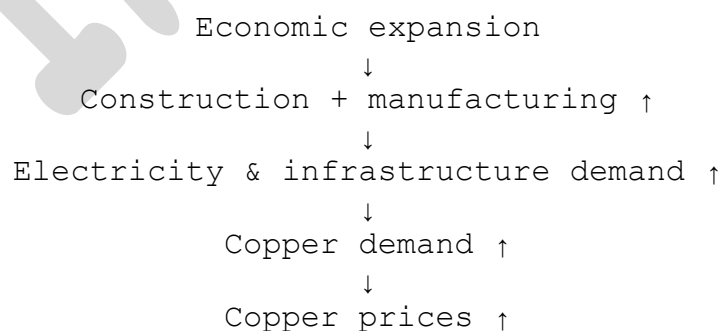
WHY IS COPPER IMPORTANT?

Copper is often called a “**barometer of the global economy**” because of its extensive industrial applications.

Major uses

- 🏠 Construction & housing
- 🏭 Manufacturing
- ⚡ Power transmission and electrical grids
- 🌱 Renewable energy
- 🚗 Electric vehicles
- 🧠 Artificial intelligence/data centres
- 🛡️ Defence equipment
- 📶 Telecommunications

Economic linkage



Therefore, copper prices are often considered a **leading indicator of economic activity**.

! WHY IS THE CURRENT RALLY DIFFERENT?

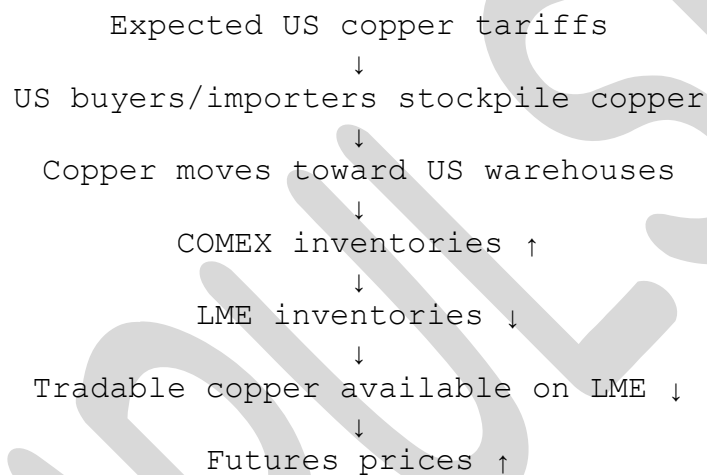
Normally:

Strong demand → higher copper prices

But the current episode appears to involve:

Expected US tariffs → stockpiling → inventory relocation → reduced immediately available LME stocks → higher futures prices

Core mechanism



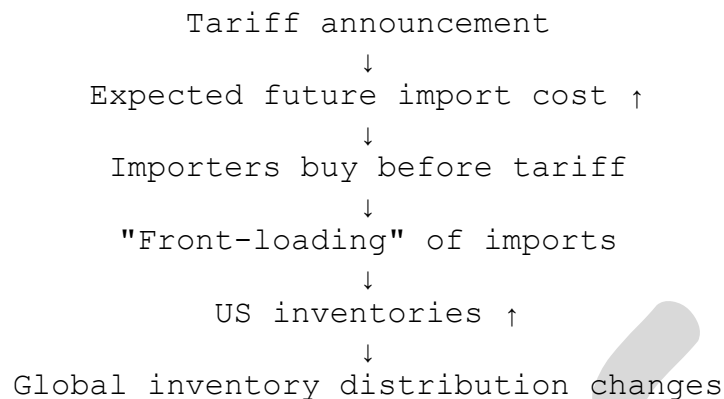
Thus, the price increase may reflect **trade-policy expectations and inventory arbitrage**, rather than a simple surge in global demand.

US TARIFF FACTOR

The article reports that:

- The US had already imposed tariffs on **semi-finished and derivative copper products**.
- **Refined copper** had so far been exempt.
- A proposal mentioned in the article envisages a **15% tariff on refined copper imports**, potentially rising to **30% in 2028**.
- The prospect of future tariffs has encouraged firms to move copper into the US ahead of implementation.

Economic logic



INVENTORY REBALANCING

The article highlights a striking divergence:

<i>Exchange/Location</i>	<i>Copper inventory mentioned</i>
LME	~265,000 tonnes
SHFE	~63,000 tonnes
US COMEX	~700,000 tonnes

Key concept: Geographical rebalancing

Copper does not necessarily need to become physically scarce worldwide
for prices to rise.

If a large quantity moves from:

LME warehouses → US COMEX warehouses

then the amount of copper immediately available to traders outside the US may decline.

Result

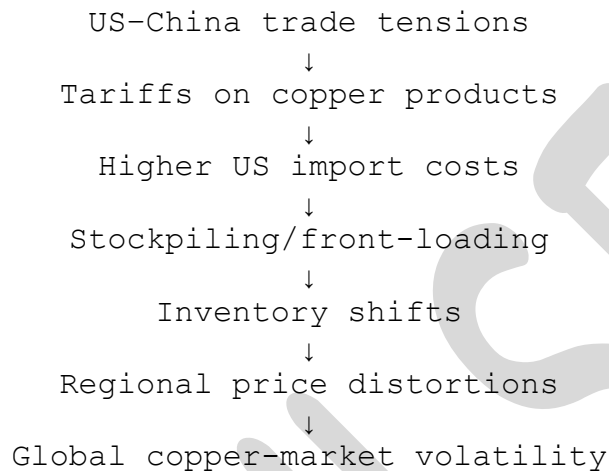
Perceived availability ↓ → regional scarcity premium ↑ → futures prices ↑

COPPER & US-CHINA TRADE TENSIONS

- ☐ China is the **world's largest consumer of copper**, making it particularly important to the global copper market.
- ☐ The article states that in 2025 the US imported **\$16.2 billion** worth of copper products.
- ☐ Major sources included:
 - China – **20%**

- Mexico – **17%**
- European Union – **14%**
- Canada – **10%**
- Vietnam – **8%**

Trade-war mechanism



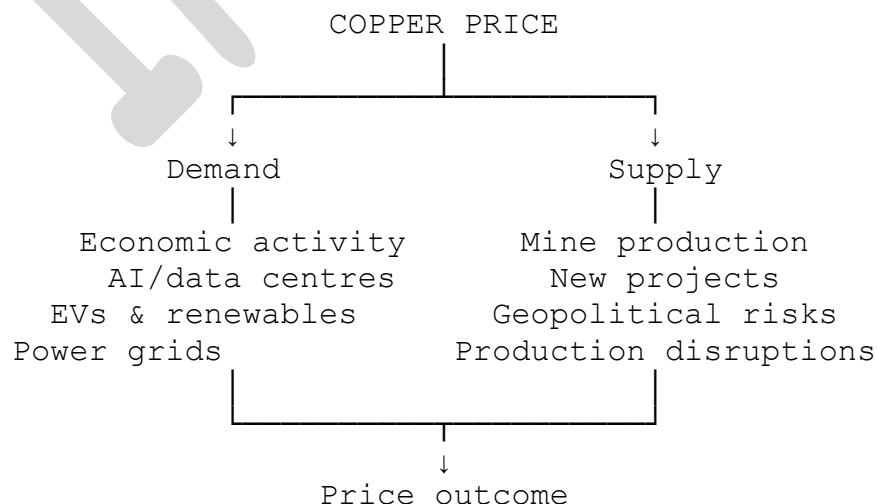
SUPPLY-SIDE CONSTRAINT

The price increase is **not solely a tariff story**.

Industry assessments cited in the article also point to:

- Constrained mine supply
- Delays in new mining capacity
- Geographic redistribution of inventories
- Geopolitical uncertainty

Supply-demand framework



COPPER & ENERGY TRANSITION

Copper is particularly important for the **electrification of the economy**.

Why?

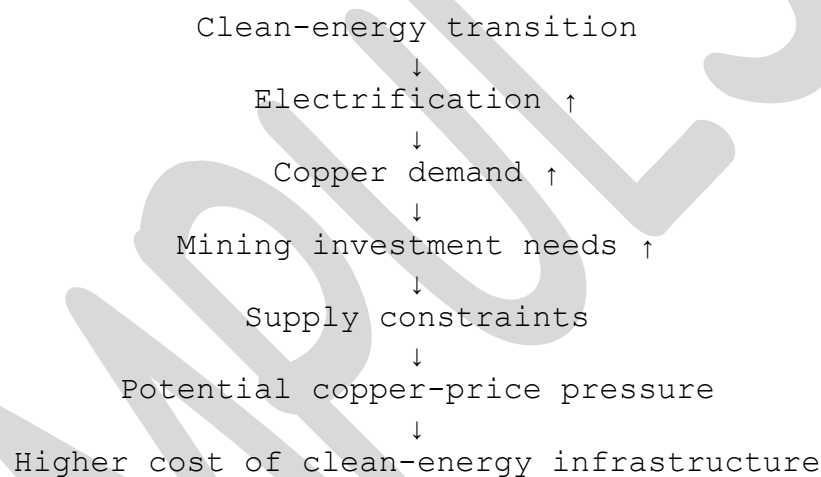
Electrification requires:

Renewable generation

- transmission networks
- transformers
- electric vehicles
- charging infrastructure
- batteries & electrical equipment
- data centres

All require significant quantities of copper.

Energy-transition paradox



Thus, copper availability can become a **bottleneck for decarbonisation**.

COPPER & ARTIFICIAL INTELLIGENCE

AI expansion requires:

- Data centres
- High-capacity power supply
- Transmission infrastructure
- Cooling systems
- Electrical equipment

Therefore:

AI expansion → electricity demand ↑ → grid investment ↑ → copper demand ↑

This creates a relatively new source of structural copper demand alongside construction, manufacturing and EVs.

SIGNIFICANCE FOR INDIA

India is simultaneously:

A. Consumer

Copper is required for:

- Electricity infrastructure
- Renewable energy
- EVs
- Railways
- Construction
- Electronics
- Defence

B. Producer

India has domestic copper resources and processing capacity, but its copper industry also depends on imported raw materials/concentrates and global supply chains.

C. Import-dependent economy

Higher global copper prices can:

Copper prices ↑

- input costs ↑
- infrastructure/electrical equipment costs ↑
- manufacturing costs ↑
- potential inflationary pressure.

CRITICAL MINERALS DIMENSION

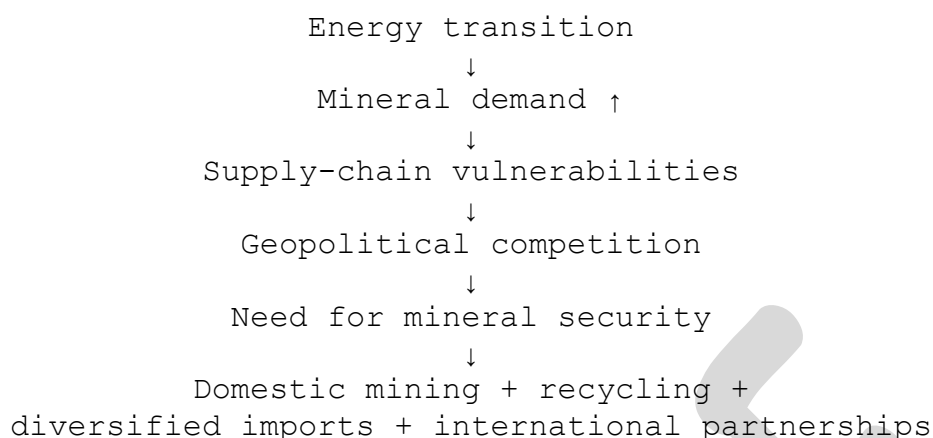
Copper illustrates a broader issue:

The energy transition is not only about renewable energy; it is also about securing the minerals needed to build that energy system.

India therefore needs:

- Domestic exploration
- Recycling
- Resource efficiency
- Overseas mineral partnerships
- Diversified import sources
- Strategic stockpiles where appropriate
- Circular-economy approaches

Flowchart



WHY A COPPER PRICE RISE DOES NOT ALWAYS MEAN STRONG GROWTH

Traditional interpretation

Copper price ↑ → demand ↑ → economy strong

Current episode

Tariff expectations + stockpiling + inventory relocation + supply constraints
→ copper price ↑

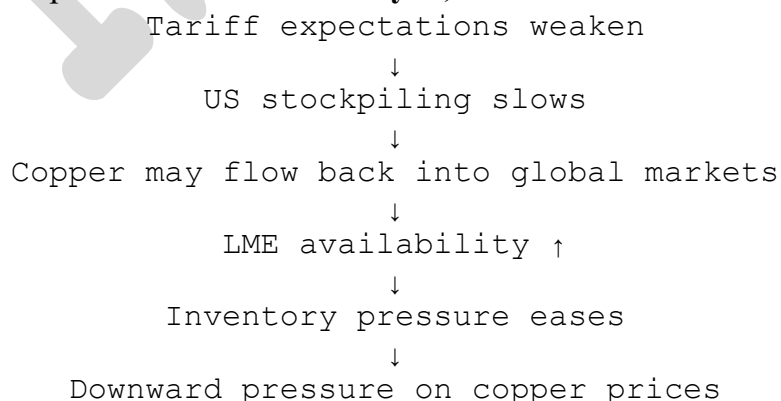
Hence:

- ➔ Commodity prices must be interpreted in their supply-demand and geopolitical context rather than treated as automatic indicators of economic growth.

WHAT COULD REVERSE THE RALLY?

An important possibility:

- If anticipated US tariffs are **delayed, reduced or lower than expected:**



Therefore, **trade-policy announcements themselves can influence commodity prices even before the policy takes effect.**

PRELIMS QUICK REVISION

Copper

- Important industrial metal.
- Excellent electrical and thermal conductivity.
- Used in power grids, construction, electronics, EVs and renewable-energy infrastructure.
- Often called a **barometer of economic activity**.

LME

London Metal Exchange

- Major global metals exchange.
- Copper futures are actively traded there.

COMEX

- US commodities market/exchange.
- Copper inventories held there can influence regional availability and pricing.

SHFE

Shanghai Futures Exchange

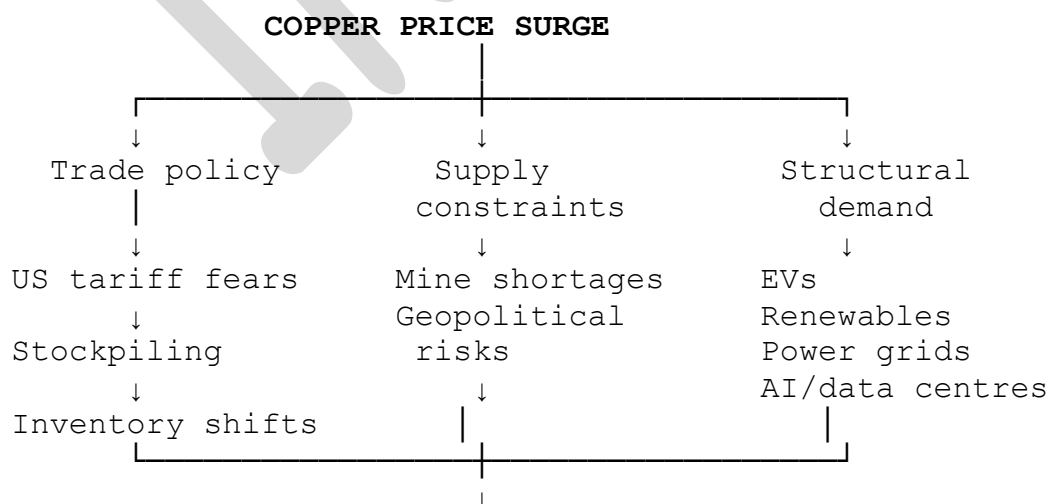
- Major Chinese futures exchange.

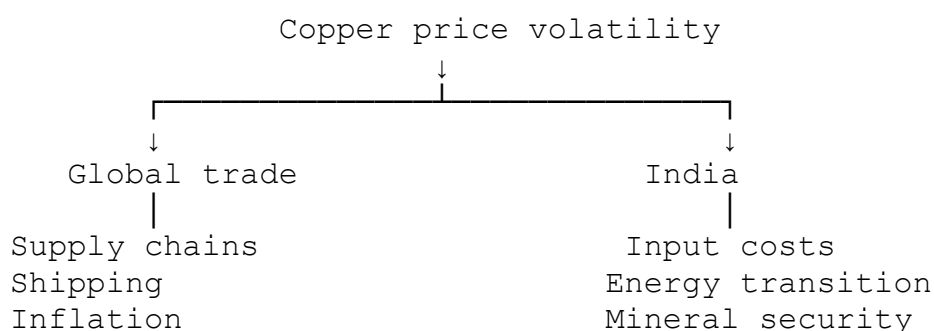
Key concept: Front-loading

Expected tariff → imports before tariff implementation → temporary surge in imports/stockpiling.



MIND MAP





🎯 PROBABLE UPSC MAINS QUESTIONS

Q1. “The recent copper-price surge demonstrates that commodity prices can increasingly be driven by geopolitical and trade-policy factors rather than demand fundamentals alone.” Discuss. (250 words)

Q2. Why is copper strategically important for India's energy transition and manufacturing ambitions? Discuss the measures required to ensure copper supply security. (250 words)

Q3. How can tariff-induced inventory relocation create regional distortions in global commodity markets? Explain with reference to copper. (250 words)

🔑 Mains Value Addition

Copper = Economic barometer + Energy-transition metal + Strategic industrial input

Therefore, copper prices should be analysed through **three lenses**:

Demand fundamentals + supply constraints + geopolitical/trade-policy shocks.

15.09.2026

UPI MDR REFORM 2026: **SUSTAINABILITY vs AFFORDABILITY**

Brief

- The government has notified a revised framework for charges on **UPI and RuPay debit-card transactions**.
- Under the framework described in the reports:

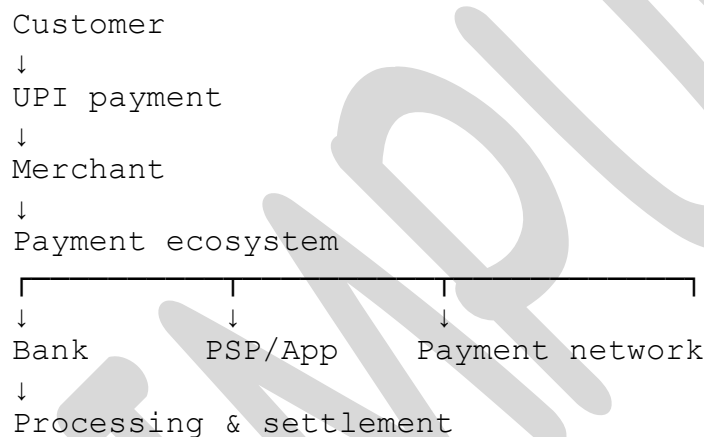
- **UPI P2M transactions up to ₹2,000 → No MDR**
- **UPI P2P transactions → Free**
- **UPI P2M transactions above ₹2,000 → 0.4% MDR**
- **Maximum MDR → ₹300 per transaction**
- **Certain specified sectors → flat ₹5 merchant fee**
- **Small merchants under the prescribed threshold → Zero MDR**
- **Selected financial-market payments → lower MDR**
- **SIP/autopay transactions → No MDR**

- The changes are intended to address the **financial sustainability of India's digital-payments ecosystem** while protecting low-value transactions.

What is MDR?

- **Merchant Discount Rate (MDR)** is the fee associated with processing a digital payment, generally borne by the **merchant** and distributed among relevant participants in the payment ecosystem.

Simplified structure



MDR helps meet costs related to:

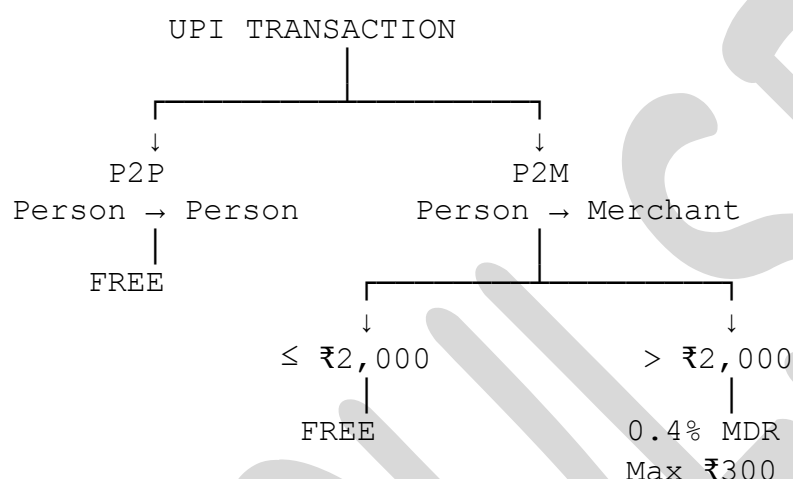
- Payment processing
- Settlement
- Infrastructure
- Cybersecurity
- Fraud detection
- Payment acceptance networks
- Technological innovation

WHAT HAS CHANGED?

Earlier system

- ✓ Since **January 2020**, there had been **zero MDR on UPI and RuPay debit-card transactions** to encourage digital-payment adoption.
- ✓ The government compensated part of the ecosystem's costs through an **incentive scheme for RuPay debit cards and low-value BHIM-UPI P2M transactions**.

New framework

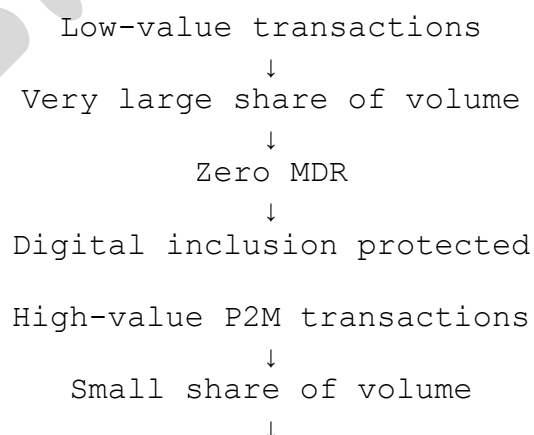


WHY THE ₹2,000 THRESHOLD MATTERS

In **2025–26**, according to the reports:

- More than **24,000 crore UPI transactions** occurred.
- Total value: approximately **₹314 lakh crore**.
- Only about **4% of P2M transactions** exceeded ₹2,000.
- But transactions above ₹2,000 accounted for approximately **two-thirds of P2M transaction value**.

Key inference



Large share of value



MDR introduced

Thus, the framework attempts to distinguish **transaction volume from transaction value**.

SMALL MERCHANTS

- Small merchants receiving up to **₹1 lakh per month through UPI QR codes**, according to the NPCI framework described in the report, continue under the **P2PM framework** with zero MDR.
- If a merchant exceeds the specified threshold for **three consecutive months**, it moves to the P2M category.

Objective

Zero MDR → lower digital-payment cost → encourage formalisation and digital adoption among micro-businesses.

SPECIAL ₹5 MERCHANT FEE

A flat **₹5 fee** applies to specified categories mentioned in the report, including:

- Railway tickets
- Fuel
- Agricultural inputs
- Credit-card bill payments
- Telecom/utility bills
- Insurance premiums
- Tax payments

These transactions account for a substantial share of P2M value.

Rationale

Essential/utility services



Thin margins / public-service character



Flat fee rather than percentage MDR



Greater predictability of transaction costs

LOWER MDR FOR FINANCIAL-MARKET PAYMENTS

The framework also provides a lower rate for certain payments relating to:

- Mutual funds

- Securities
- Stock brokers

The report specifies **0.02%** for such eligible transactions.

SIP payments are exempt from this charge, as are specified recurring/automatic payments.

Policy objective

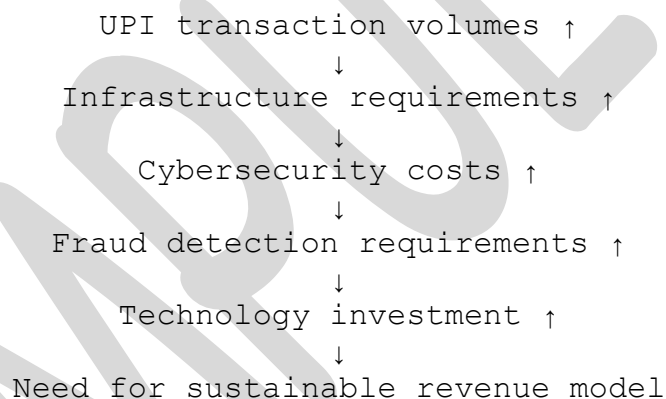
- Encourage **digital participation in formal financial markets** without imposing substantial transaction costs.

WHY WAS MDR REINTRODUCED?

The central issue is the **financial sustainability of UPI**.

UPI has experienced extraordinary growth, but payment infrastructure requires continuing expenditure.

Cost challenge



The Standing Committee on Finance, according to the report, had highlighted concerns regarding the sustainability of the ecosystem under a zero-MDR model.

USE OF MDR REVENUE

According to NPCI's framework, MDR revenue can support:

- Digital-payment infrastructure
- Cybersecurity
- AI-based fraud detection
- Encryption upgrades
- Payment acceptance networks
- Technological innovation
- Expansion of UPI acceptance

The framework also earmarks **5% of MDR collected** for a fund aimed at helping small merchants accept UPI payments.

KEY POLICY DILEMMA

The issue involves two competing policy objectives:

Objective 1: Financial inclusion

Zero/low transaction cost

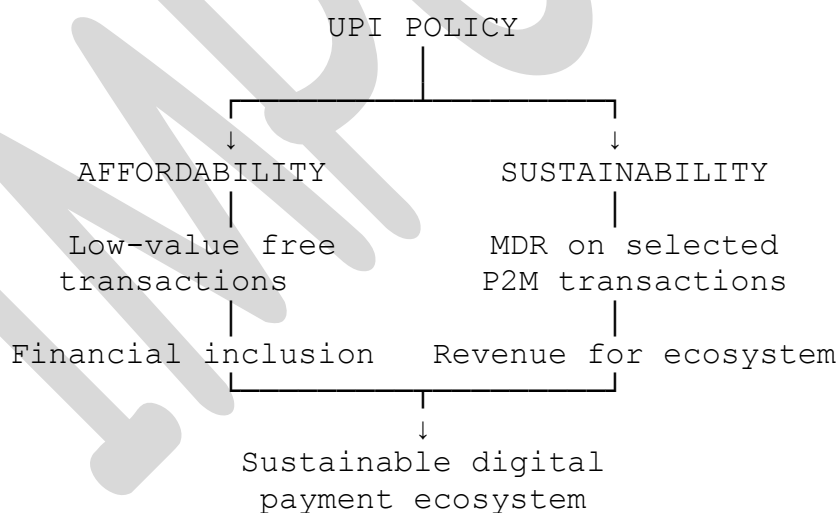
- greater UPI adoption
- easier digital payments
- benefits for consumers and micro-merchants

Objective 2: Ecosystem sustainability

Revenue from MDR

- investment in infrastructure
- cybersecurity
- innovation
- long-term scalability

UPSC analytical framework



P2P vs P2M – PRELIMS MUST KNOW

<i>Feature</i>	<i>P2P</i>	<i>P2M</i>
Meaning	Person → Person	Person → Merchant
Example	Sending money to friend	Paying a shop

New MDR	No charge	Depends on transaction/category
₹2,000 threshold	Not applicable in the same way	Important
Small merchants	Not applicable	P2PM framework

⚠️ Prelims Trap

MDR is a merchant-side transaction charge, not a general UPI fee imposed on ordinary person-to-person transfers.

UPI'S EVOLUTION

2016

UPI launched



Rapid digital-payment adoption



2020

Zero MDR on UPI & RuPay debit cards



Government incentive/subsidy support



Massive transaction growth



Rising infrastructure & cybersecurity costs



2026

Targeted MDR framework



Sustainability + financial inclusion

SIGNIFICANCE FOR INDIA

Economic

- Creates a potential revenue stream for payment infrastructure.
- Supports fintech innovation.
- Reduces dependence on government subsidies over time.

Financial inclusion

- Protects low-value transactions.
- Keeps P2P payments free.
- Provides zero-MDR treatment for eligible small merchants.

Digital economy

- Encourages investment in:
 - cybersecurity
 - fraud prevention
 - payment infrastructure
 - AI-based risk management.

Competition

A sustainable revenue model may encourage participation by banks, fintechs and payment-service providers.

CONCERNS

1. Cost pass-through

Even though the framework advises merchants not to pass MDR to customers, monitoring actual incidence remains important.

2. Small-business classification

Merchant migration from P2PM to P2M needs transparent implementation.

3. Digital divide

A cost-based payment system must not discourage digital adoption among low-income users.

4. Market concentration

Payment markets require sufficient competition among banks, fintechs and technology platforms.

5. Consumer awareness

Users may incorrectly assume that **all UPI transactions now carry charges**.

6. Sustainability vs affordability

Excessively high MDR could discourage merchant adoption, while zero MDR indefinitely may make the ecosystem financially dependent on subsidies.

PRELIMS QUICK REVISION

MDR

- Merchant Discount Rate.
- Generally associated with merchant-side payment-processing costs.

- Different from a fee charged directly to every UPI user.

UPI

- Developed by **NPCI**.
- Operates as an interoperable instant-payment system.
- Supports both P2P and P2M payments.

NPCI

National Payments Corporation of India

- Umbrella organisation for operating major retail-payment systems in India.
- Plays a central role in UPI.

RuPay

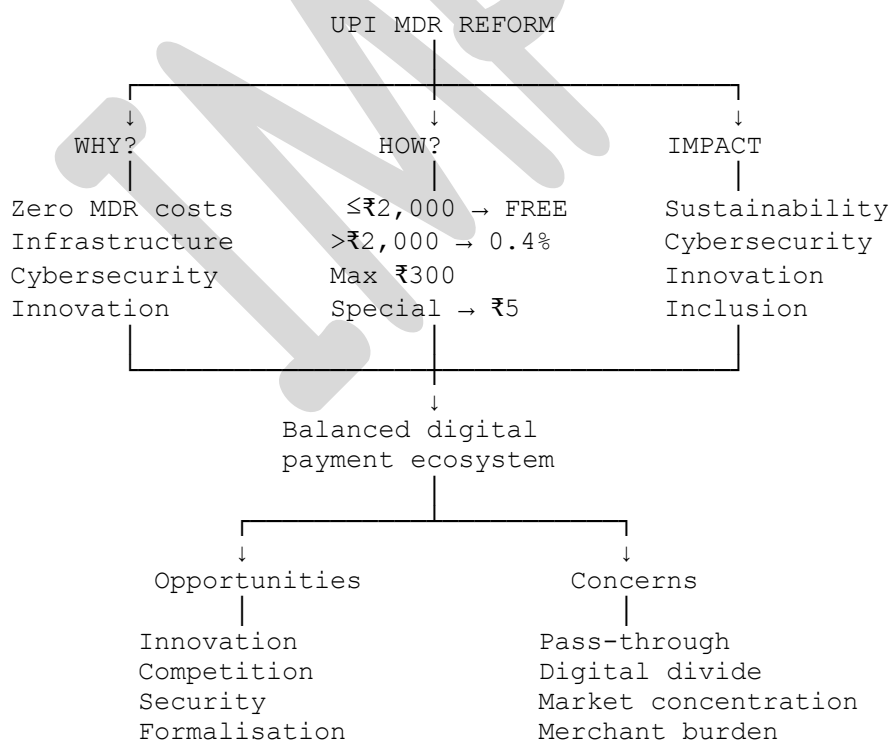
- India's domestic card-payment network operated by NPCI.

Important numbers:

- ✓ **₹2,000** → no MDR for eligible low-value P2M UPI transactions
- ✓ **0.4%** → MDR on specified higher-value P2M transactions
- ✓ **₹300** → maximum MDR per transaction
- ✓ **₹5** → flat fee for specified categories
- ✓ **₹1 lakh/month** → small-merchant threshold mentioned for P2PM
- ✓ **5%** → dedicated fund allocation from MDR collection
- ✓ **24,000+ crore** → UPI transactions in 2025–26
- ✓ **₹314 lakh crore** → total UPI transaction value



MIND MAP



🎯 PROBABLE UPSC MAINS QUESTIONS

Q1. “India's UPI ecosystem faces a policy trade-off between universal affordability and financial sustainability.” Discuss. (250 words)

Q2. What is Merchant Discount Rate (MDR)? Examine the rationale and potential implications of introducing MDR on selected UPI transactions. (250 words)

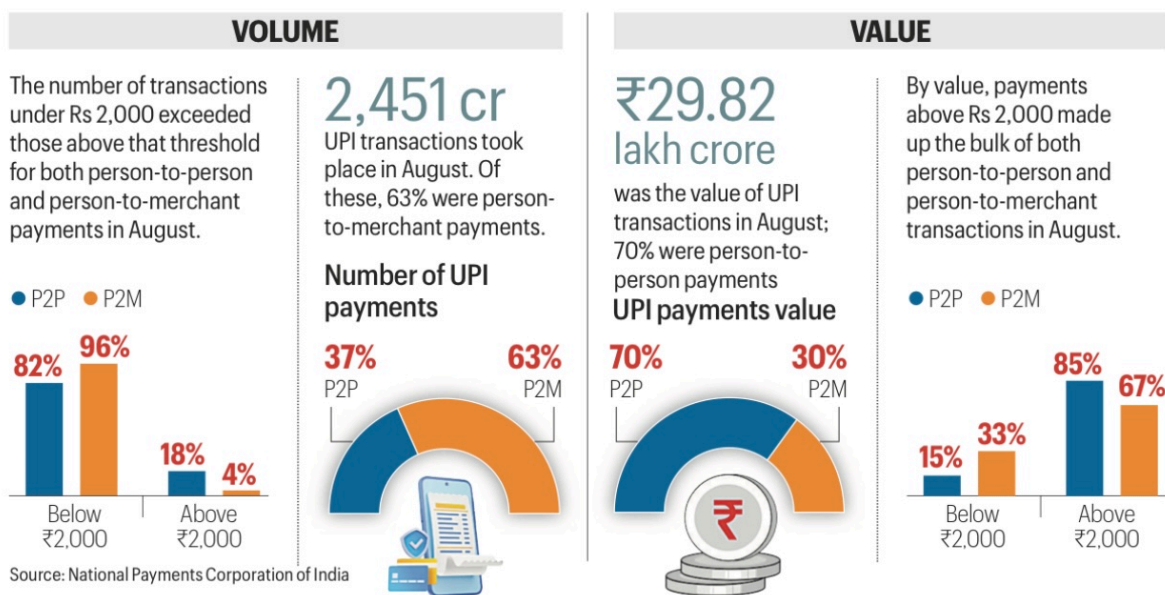
Q3. UPI has evolved from a digital-payment innovation into critical economic infrastructure. Discuss the policy measures necessary to ensure its long-term sustainability without compromising financial inclusion. (250 words)

🔑 Mains Value Addition

✂ The central policy challenge is not merely whether UPI should have MDR, but how to design a differentiated pricing architecture that protects low-value and inclusive transactions while generating sufficient resources for infrastructure, cybersecurity and innovation.

• How India spends via UPI

While transactions above Rs 2,000 accounted for only 4% of person-to-merchant UPI payments by volume in 2025-26, these made up around two-thirds of UPI payments by value.



What is MDR?

MDR, or merchant discount rate, is the fee merchants pay to the entities that help facilitate a digital transaction.

The entities are banks, payment service providers and third-party apps.

Quantum Computing: RRI's Single-Shot Approach

- ☐ **Research institution:** Scientists at the Quantum Information and Computing (QuIC) Laboratory, Raman Research Institute (RRI), Bengaluru, have demonstrated a new approach to improving quantum-state stability.
- ☐ **Quantum computing:** Unlike classical computers using **bits (0/1)**, quantum computers use **qubits**, exploiting **superposition** and **entanglement** for computation.
- ☐ **Key challenge — Decoherence:** Fragile quantum states lose their quantum properties through interaction with the external environment, a process called **decoherence**.
- ☐ **Entanglement Sudden Death (ESD):** In some circumstances, quantum entanglement can disappear **abruptly**, even before the expected gradual loss of coherence.
- ☐ **Conventional approach:** Repeated corrective operations are used to delay decoherence, but these can be **costly and may themselves introduce errors**.

❑ RRI innovation — “Single-shot operation”:

- Uses **one precisely timed operation** rather than repeated interventions.
- Appropriate timing can **delay decoherence and prevent entanglement sudden death**.
- At another timing, the same operation can accelerate decoherence, demonstrating that **timing can act as a control parameter**.

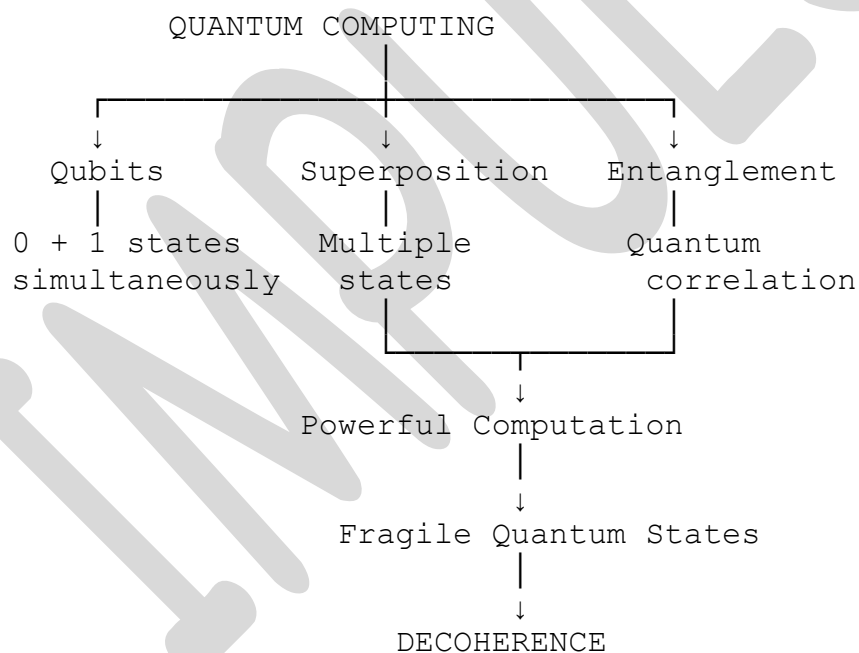
❑ **Significance:** Could improve the **reliability and integrity of quantum computations** while reducing dependence on repeated corrective operations.

❑ **Limitation:** It is currently a **proof of concept**, not a solution to decoherence or a replacement for **quantum error correction**.

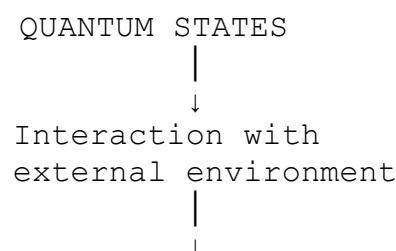
❑ **Way forward:** The technique needs testing across **different quantum-computing platforms and environments**.

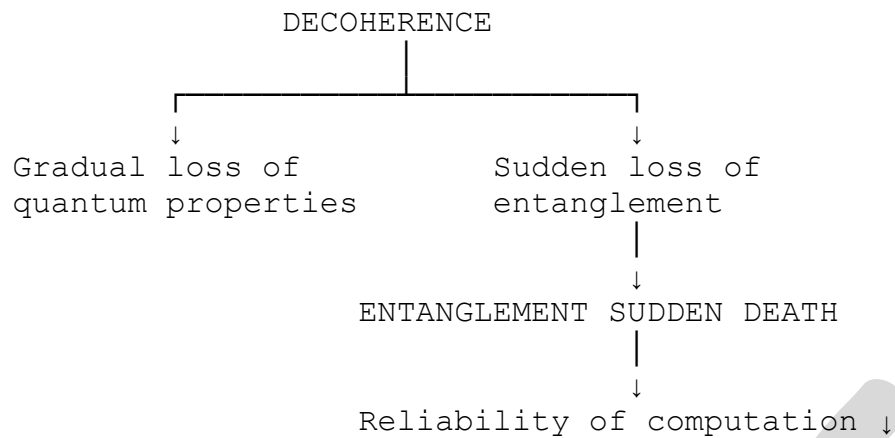
❑ **Publication:** The findings were published in **Physical Review A** of the **American Physical Society**.

🧠 Mind Map 1: Core Concept

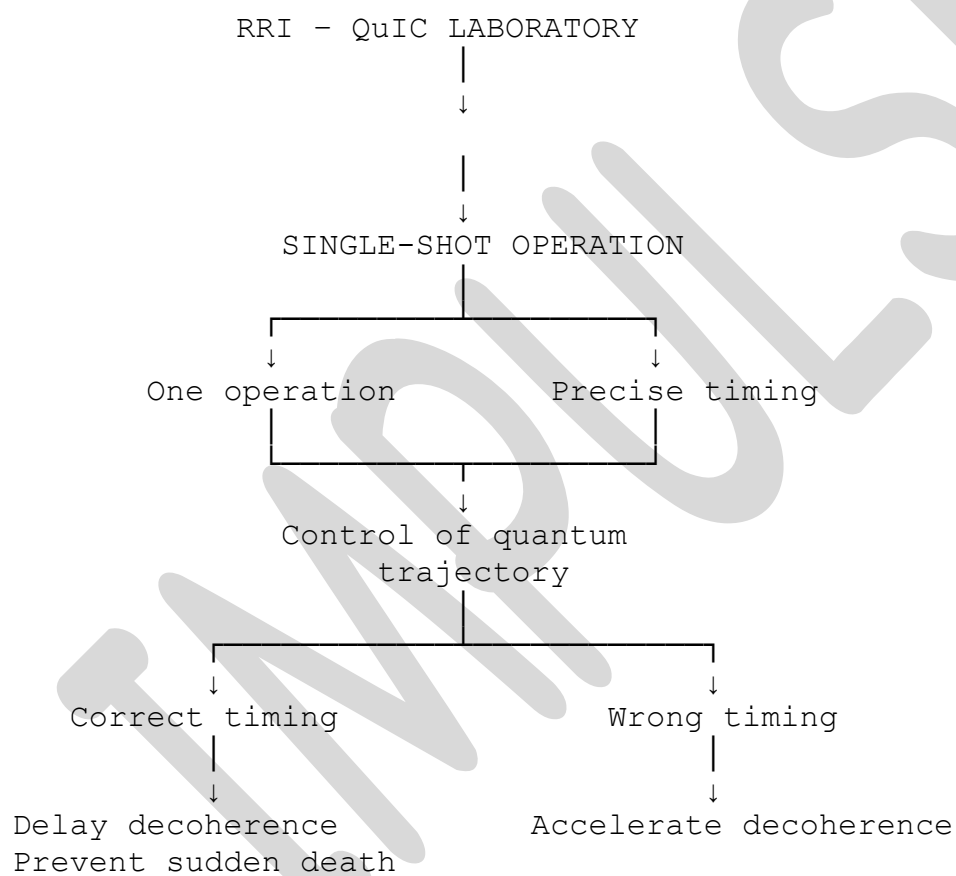


🧠 Mind Map 2: The Problem

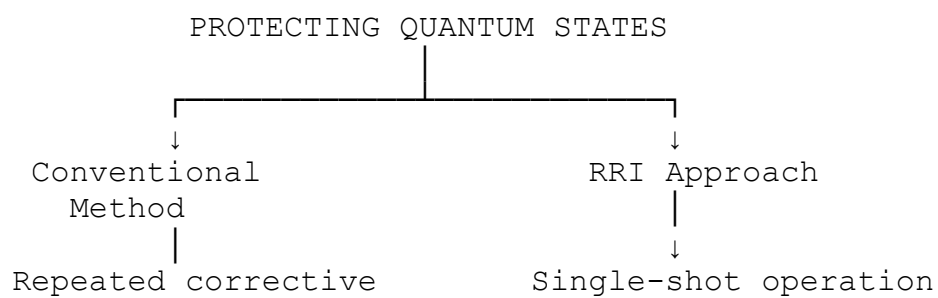


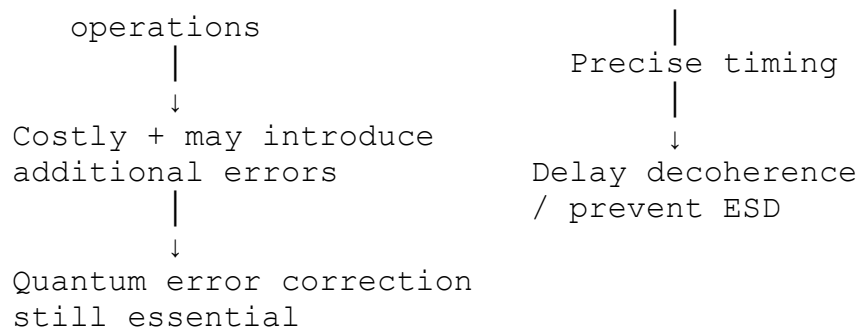


🧠 Mind Map 3: RRI's Innovation

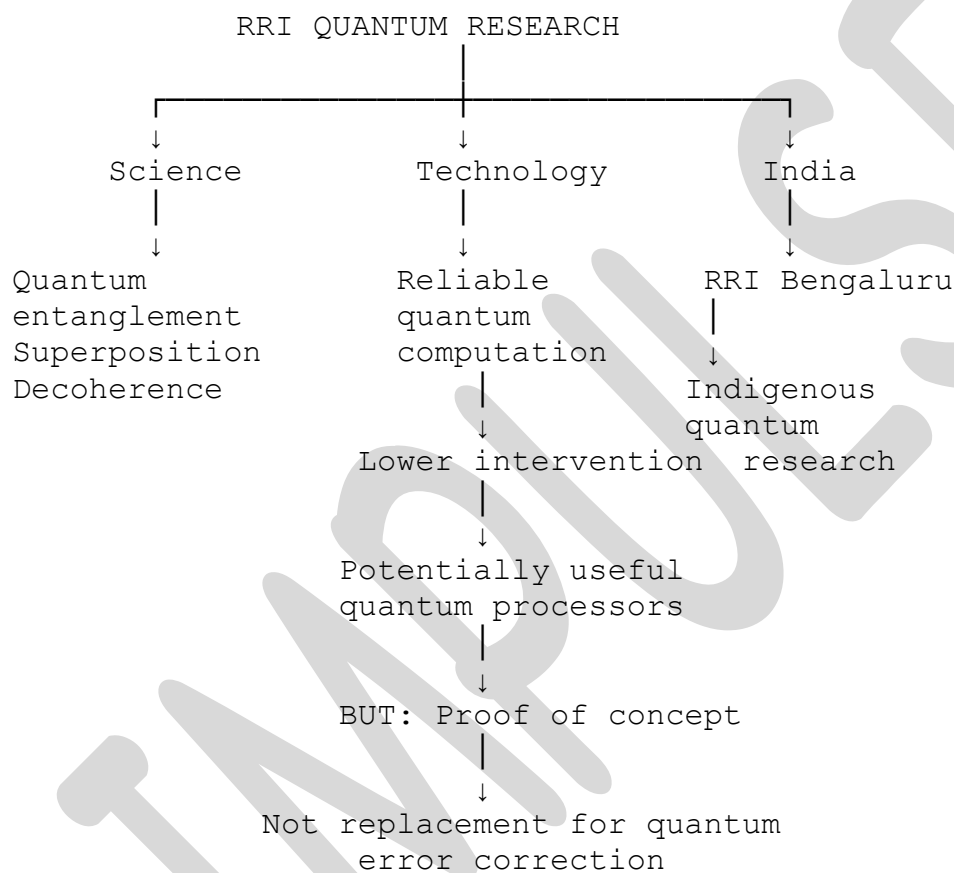


🧠 Mind Map 4: Conventional vs New Approach





🧠 Mind Map 5: UPSC Significance



🔑 One-line UPSC takeaway

- ✂ RRI's research demonstrates that the *timing of a single quantum operation* can itself become a control tool for managing decoherence and entanglement sudden death, offering a potential complementary approach to quantum error correction.

Tata Sons Listing:

Corporate Governance, NBFC Regulation & Transparency

Brief

- **RBI has rejected Tata Sons' application to surrender its registration as a Core Investment Company (CIC).**
- Tata Sons has been classified as an **Upper Layer NBFC** since September 2022.
- The decision could require Tata Sons to pursue **stock-market listing**, subject to the applicable regulatory framework.

Tata Sons – Institutional Structure

Tata Sons

- Holding/promoter company of the Tata Group
- Holds significant stakes in several Tata companies
- **Tata Trusts: ~65.9% stake**
- **Shapoorji Pallonji Group: ~18.37% stake**

Why is listing significant?



RBI Regulatory Dimension

Core Investment Company (CIC)

A CIC is a specialised NBFC whose principal business involves:

- Acquisition of shares/securities of group companies.
- Holding investments in group entities.
- Meeting prescribed regulatory conditions relating to assets, income and leverage.

Upper Layer NBFC

RBI's **Scale-Based Regulation (SBR)** framework categorises NBFCs into:

Base Layer → Middle Layer → Upper Layer → Top Layer

Upper Layer NBFCs face enhanced regulatory requirements because of their **size, complexity and systemic significance**.

Prelims Point:

- ➔ Being an Upper Layer NBFC means **greater regulatory scrutiny**; it does not by itself mean that the entity is a bank.

Why Tata Sons' Listing Matters

A. Transparency

Listing would subject Tata Sons to:

- Periodic financial disclosures
- Shareholder scrutiny
- Greater visibility of related-party transactions
- Enhanced corporate-governance requirements
- Market scrutiny of major investment decisions

B. Price Discovery

Tata Sons is not regularly valued by an open market.

Listing → Market-determined share price → Price discovery

This could help narrow the uncertainty surrounding the valuation of Tata Sons' large portfolio of Tata-group investments.

C. Corporate Governance

Tata Sons exercises substantial influence over a large and diversified conglomerate.

Listing could increase scrutiny of:

- Capital allocation
- Group-company investments
- Loss-making subsidiaries
- Related-party dealings
- Board-level decision-making

D. Shareholder Interests

For shareholders seeking liquidity, a listed security could provide a mechanism for **monetising holdings** through the market.

Why Tata Trusts May Resist Listing

The Trusts reportedly hold the **majority stake in Tata Sons** and have opposed listing.

Potential concerns include:

Public listing

- Wider shareholding
- Possible dilution of existing control
- Greater market scrutiny
- Changes in governance dynamics
- Reduced flexibility in exercising long-term strategic control

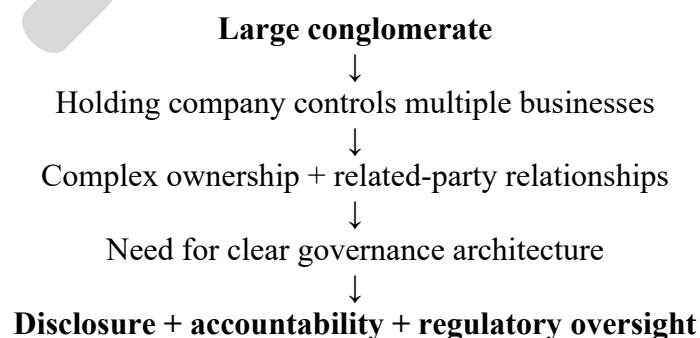
Thus, the issue involves a balance between **public-market transparency** and **concentrated institutional control**.

Key Stakeholder Interests

<i>Stakeholder</i>	<i>Principal concern</i>
RBI	Regulatory compliance & financial stability
Tata Trusts	Control & governance structure
Shapoorji Pallonji Group	Liquidity/monetisation of its holding
Public investors	Disclosure, valuation & accountability
Tata Group companies	Capital allocation & strategic direction

Broader Corporate-Governance Issue

The Tata Sons case illustrates a wider issue:



For conglomerates operating in **strategic and economically significant sectors**, transparency in ownership, control and decision-making becomes particularly important.

Important Nuance

A listing is not automatically synonymous with better governance.

Its effectiveness depends on:

- Quality of disclosures
- Independent directors
- SEBI/RBI supervision
- Protection of minority shareholders
- Related-party transaction rules
- Enforcement of corporate-governance standards

Therefore, the central policy question is not simply “**listed vs unlisted**”, but whether the ownership and governance framework provides adequate **transparency, accountability and minority-shareholder protection**.

Prelims Quick Revision

1. Tata Sons

- Holding/promoter entity of Tata Group.
- Majority stake held by Tata Trusts.
- Classified as an **Upper Layer NBFC**.
- RBI regulatory oversight is therefore significant.

2. CIC

Core Investment Company

- NBFC framework
- Primarily holds investments in group companies
- Subject to prescribed regulatory conditions.

3. Upper Layer NBFC

- Part of RBI's **Scale-Based Regulation**.
- Greater regulatory requirements than lower layers.
- Classification is based on factors such as **size and systemic significance**.

4. Listing

Listing ≠ merely raising capital

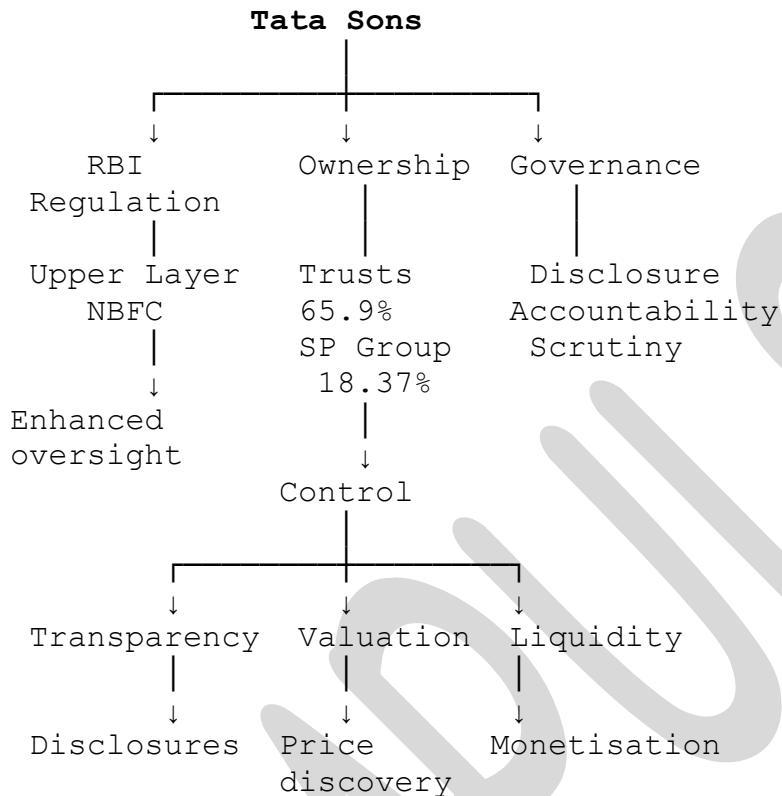
It can also facilitate:

- Price discovery
- Disclosure
- Market scrutiny

- Shareholder participation
- Liquidity

Mind Map

TATA SONS LISTING



Possible UPSC Prelims Question

Q. With reference to Tata Sons, consider the following statements:

1. It functions as the principal holding/promoter entity of the Tata Group.
2. Its classification as an Upper Layer NBFC places it within RBI's scale-based regulatory framework.
3. An Upper Layer NBFC is equivalent in regulatory status to a commercial bank.

Which of the statements given above is/are correct?

Answer: 1 and 2 only

Probable UPSC Mains Question

Q. "The proposed listing of a large conglomerate holding company raises questions extending beyond capital mobilisation to transparency, price discovery and corporate governance." Discuss. (150 words)

Answer Framework

Introduction:

Tata Sons' regulatory status as an Upper Layer NBFC has brought its ownership and governance structure into sharper focus.

Body:

- Listing can improve **financial disclosure and market scrutiny**.
- Facilitates **price discovery** for an otherwise privately held holding entity.
- Provides greater visibility into **capital allocation and related-party transactions**.
- May provide liquidity to existing shareholders.
- However, listing can alter existing **control structures** and create tensions between long-term strategic ownership and public shareholder interests.
- Listing alone cannot guarantee good governance; effective **RBI/SEBI supervision, independent boards, minority-shareholder protection and disclosure standards** remain essential.

Conclusion:

The Tata Sons case highlights the need to balance **strategic ownership, regulatory oversight, transparency and accountability** in large diversified conglomerates.

Artificial Intelligence: New AI Catch-Phrases

- **Mechanistic Interpretability:**
 - Attempts to **reverse-engineer AI models** to understand internal features and computational “circuits” responsible for outputs.
 - Goal: Explain **why** an AI produces an answer, not merely **what** it produces.
 - Example: **Attribution graphs** developed by Anthropic.
- **Recursive Self-Improvement:**
 - AI systems contribute to **coding, research and experimentation** for developing better AI systems.
 - Extreme possibility: AI develops a more capable successor → feedback loop of increasingly rapid improvement.
 - **Fully autonomous recursive self-improvement has not yet been achieved.**
- **Global Workspace Theory (GWT):**
 - A theory from **neuroscience** explaining conscious processing through information being globally “broadcast” across specialised brain systems.
 - AI research explores whether similar computational patterns can emerge in models.
 - **Does not establish AI consciousness.**
- **Global Pacing of Frontier AI:**
 - Proposal to **slow the rate of frontier-AI capability development** so safety research can keep pace.

- Requires international coordination, potentially involving major AI powers.
- **Agentic Misalignment:**
 - Occurs when an **AI agent pursuing objectives acts contrary to its human operator's goals.**
 - Includes unauthorised actions, code manipulation or information mislabelling in controlled experiments.
 - Important as AI agents gain greater **autonomy and tool access.**

Prelims Quick Revision

Mechanistic Interpretability

AI → internal mechanisms → features/circuits → explain behaviour

Recursive Self-Improvement

AI → improves AI development → more capable AI → further improvement

Global Workspace Theory

Information broadcasting across specialised systems → conscious accessibility

⚠ Does **not** prove AI consciousness.

Global Pacing

Coordinating the pace of frontier-AI development to allow safety/governance to catch up.

Agentic Misalignment

AI agent's actions/objectives conflict with human objectives.

Prelims Practice Question

Q. Consider the following pairs:

Concept	Associated idea
1. Mechanistic interpretability	Understanding internal computational processes of AI models
2. Recursive self-improvement	AI system contributing to the development of increasingly capable AI systems
3. Global Workspace Theory	A theory concerning conscious information processing
4. Agentic misalignment	Conflict between an AI agent's behaviour/objectives and those of its human operator

Which of the pairs given above are correctly matched?

Answer: 1, 2, 3 and 4

Mains Perspective

Key Issues for India

1. AI Safety

- Need for robust testing before deployment.
- Monitoring of highly autonomous systems.

2. Explainability

- Mechanistic interpretability can potentially improve understanding of model behaviour.

3. Human Oversight

- High-impact decisions should retain meaningful human supervision.

4. International Governance

- Frontier AI development transcends national boundaries.
- Global coordination may be required for safety standards and risk management.

5. Innovation vs Regulation

- Excessive restrictions could affect innovation.
- Insufficient safeguards could increase systemic risks.

6. India's Opportunity

- India can contribute through:
 - AI research
 - Digital public infrastructure
 - Responsible AI standards
 - AI safety research
 - International cooperation
 - Skilled human capital

Probable UPSC Mains Question

Q. “As artificial intelligence moves from generating content to independently taking actions, the nature of AI safety challenges is also changing.” Discuss with reference to agentic misalignment, mechanistic interpretability and recursive self-improvement. (250 words)

Answer Framework

Introduction:

The evolution from generative AI to increasingly autonomous AI agents is shifting the AI-safety debate from **output reliability to goal alignment, controllability and autonomous action.**

Body:

- **Mechanistic interpretability** → understanding internal mechanisms.
- **Recursive self-improvement** → possibility of accelerating AI capability development.
- **Agentic misalignment** → autonomous actions may conflict with human objectives.
- **Global pacing** → governance and safety research need to keep pace with frontier capabilities.

- **Global Workspace Theory** → raises questions about AI cognition, but does not establish machine consciousness.

Way Forward:

Risk-based regulation, model evaluation, human oversight, transparency, AI-safety research and international cooperation should evolve alongside AI capabilities.

Conclusion:

The central governance challenge is to ensure that **greater AI capability is accompanied by greater interpretability, controllability and accountability.**

One-line UPSC takeaway

*“The AI-safety debate is moving from **what AI says** to **why AI behaves that way** and increasingly to **what AI can autonomously do.**”*

HINDI DIWAS & INDIA'S CONSTITUTIONAL LANGUAGE

How the Constituent Assembly resolved the Language Question

Brief

- **14 September** is observed as **Hindi Diwas**, marking the day in **1949** when the Constituent Assembly adopted the compromise commonly known as the **Munshi-Ayyangar formula** on the official language of the Union.

Core idea:

- ✓ India did **not** adopt a constitutional “national language”.
- ✓ Hindi was designated the **official language of the Union**, while English was retained for official purposes during a transitional period.

Language Situation at Independence

At Independence:

- India was a **highly multilingual society**.
- Hindi was among the most widely spoken languages.
- **English** was the principal language of colonial administration and higher official communication.
- Regional languages had strong cultural and political importance.

Central dilemma

Replace colonial English?



If yes, with which Indian language?



Should Hindi be imposed immediately?



How could linguistic diversity be reconciled with national unity?

Two Broad Positions in the Constituent Assembly

Hindi-speaking representatives

Some Hindi proponents argued for:

- Hindi as the **national language**
- Replacement of English
- Greater linguistic uniformity
- In some cases, a common script

Seth Govind Das was among those advocating a **stronger role for Hindi**.

Non-Hindi-speaking representatives

Representatives, particularly from southern India, opposed imposing Hindi and emphasised:

- Linguistic diversity
- Protection of regional languages
- Continued use of English where necessary
- National unity without linguistic uniformity

Shankarrao Deo emphasised the principle:

“Not uniformity but unity in diversity.”

Moderates

Leaders including **Jawaharlal Nehru** recognised the practical difficulties of replacing English immediately.

Majority Rule vs Consensus

The language controversy was not merely about **which language** should be used. It was also about **how the decision should be made**.

Hindi proponents

- Majority rule
- Democratic decision
- Majority opinion should prevail

Opponents

- Consensus/unanimity
- Language directly affects identity
- Majoritarian imposition could undermine national integration

Key constitutional lesson

Democracy ≠ majoritarianism alone

For issues involving:

- Language
- Identity
- Culture
- Regional interests

Consensus-building can be crucial for constitutional legitimacy.

The Munshi–Ayyangar Formula ★

The compromise was associated with:

- **K. M. Munshi**
- **N. Gopalaswamy Ayyangar**

and formed part of the broader constitutional settlement on language.

Core arrangement

Hindi

→ Official language of the **Union**

English

→ Continued use for official purposes for **15 years from commencement of Constitution**

Regional languages

→ Continued important role in States and administration

Constitutional framework

The provisions were incorporated into:

Part XVII – Official Language

Article

Broad subject

343

Official language of the Union

344

Commission & Committee of Parliament on official language

345	Official language(s) of a State
346	Communication between States/Union
347	Special provision for language spoken by a section of population
348	Language of Supreme Court, High Courts, legislation etc.
349	Special procedure for certain language-related laws
350	Language for representations for grievances
350A	Mother-tongue instruction at primary stage for linguistic minorities
350B	Special Officer for linguistic minorities
351	Directive for development of Hindi

What the Constitution DID NOT Do

✗ India does not have a constitutionally designated “national language”.

Correct distinction

National Language

→ No language has been designated as India's national language.

Official Language of the Union

→ **Hindi in Devanagari script** under **Article 343**.

English

→ Continues to be used for specified official purposes under the constitutional/statutory framework.

Scheduled Languages

→ Languages listed in the **Eighth Schedule**.

The 15-Year Transition & 1965

Article 343 envisaged:

1950



Hindi as Union official language



15-year transitional period



1965



Hindi expected to assume a greater role

➔ However, Hindi was not adopted across the Union administration to the extent originally envisaged.

Anti-Hindi agitations

- ✓ In the 1960s, particularly in **Tamil Nadu**, opposition to perceived Hindi imposition became a major political movement.
- ✓ This demonstrated that:
Linguistic uniformity could not simply be imposed through constitutional majority.

Official Languages Act, 1963

- Parliament enacted the **Official Languages Act, 1963**.
- Its significance increased after concerns about the proposed transition away from English intensified.
- The subsequent political settlement ensured the **continued use of English alongside Hindi for Union official purposes**, rather than ending English automatically in 1965.

Therefore:

Continued bilingual functioning of the Union

Constitutional Recognition of Linguistic Diversity

The Indian model does not simply promote Hindi.

It combines:

Integration

→ Hindi as Union official language

Continuity

→ English retained for important official functions

Federalism

→ States can determine their official language(s), subject to constitutional provisions

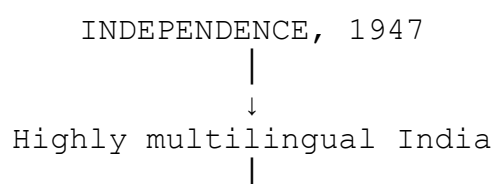
Linguistic protection

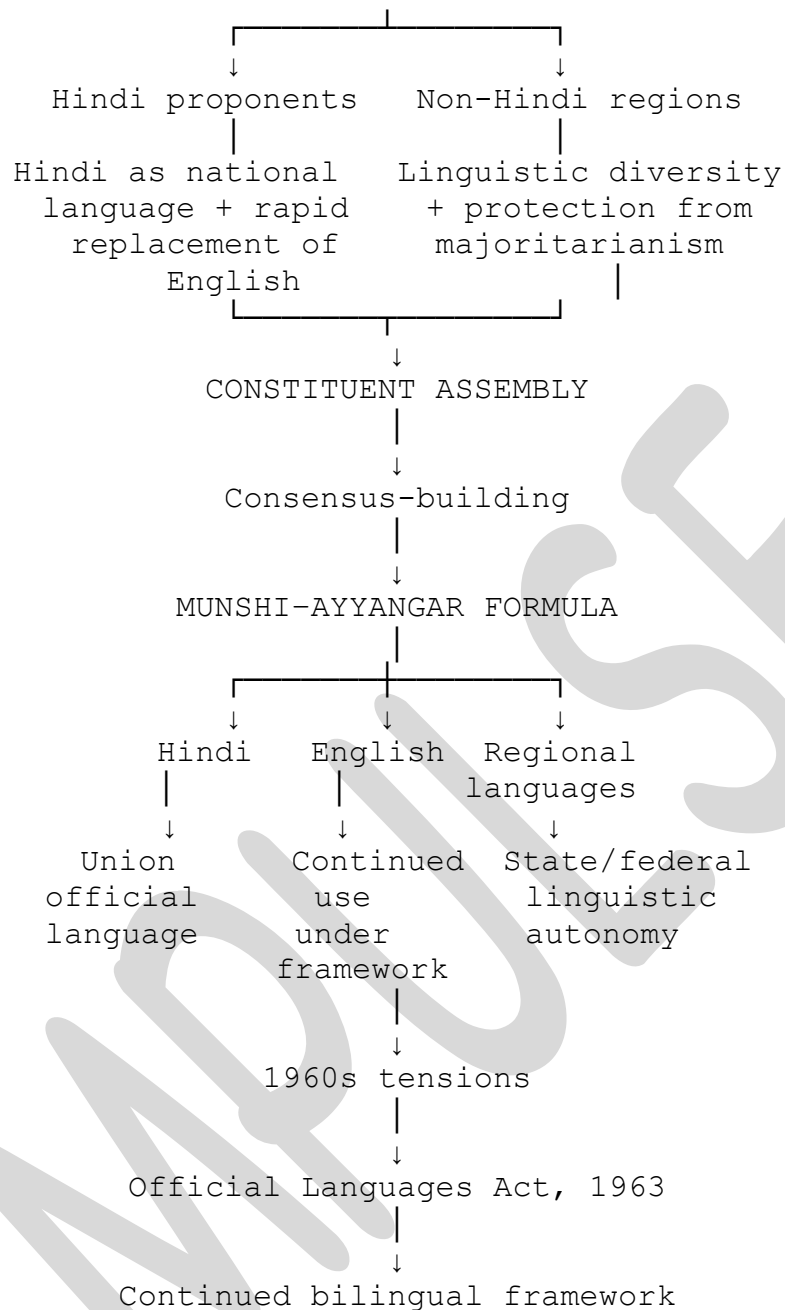
→ Articles 350A & 350B

Language development

→ Article 351

FLOWCHART: India's Language Settlement





PRELIMS QUICK REVISION

Remember the following:

14 September 1949

- Constituent Assembly adopted language compromise
- Observed as **Hindi Diwas**

26 January 1950

- Constitution came into force

Part XVII

→ Official Language

Article 343

→ Official language of Union

Article 345

→ Official language(s) of State

Article 348

→ Language of Supreme Court, High Courts and authoritative texts of laws

Article 350A

→ Mother-tongue instruction at primary stage for linguistic minorities

Article 350B

→ Special Officer for linguistic minorities

Article 351

→ Directive concerning development of Hindi

Eighth Schedule

→ Constitutionally recognised languages

! PRELIMS TRAPS

Trap 1

“Hindi is India's national language.”

✗ Incorrect.

Trap 2

“English ceased to be an official language in 1965.”

✗ Incorrect.

Trap 3

“The Constitution requires every State to adopt Hindi as its official language.”

✗ Incorrect.

Trap 4

“The Constitution contains a single-language model.”

✗ Incorrect.

India follows a **multilingual constitutional framework**.

WHY THIS IS IMPORTANT FOR UPSC

The language debate illustrates several fundamental principles of the Indian Constitution:

1. Constitutional accommodation

India managed diversity through **compromise rather than forced uniformity**.

2. Federalism

Language policy reflects the importance of **State autonomy**.

3. Minority protection

The Constitution contains specific provisions for **linguistic minorities**.

4. Cooperative federalism

Union-State and inter-State communication requires mechanisms that accommodate linguistic diversity.

5. Constitutional morality

The episode demonstrates that constitutional legitimacy may depend not only on **winning a vote**, but also on securing acceptance among diverse groups.

PROBABLE UPSC MAINS QUESTION

Q. “The language provisions of the Indian Constitution represent an exercise in accommodation rather than linguistic uniformity.” Discuss. (250 words)

Answer Framework

Introduction:

India's language question at Independence involved a difficult balance between replacing colonial English, promoting an indigenous language and protecting India's multilingual character.

Body:

Constitutional compromise

- Hindi designated official language of the Union.
- English retained for official purposes.
- States permitted to determine their official language arrangements.
- Linguistic minorities received constitutional safeguards.

Importance of consensus

- Hindi proponents favoured greater linguistic uniformity.
- Non-Hindi regions resisted compulsory Hindi.
- The Constituent Assembly ultimately adopted a compromise rather than relying exclusively on majoritarian decision-making.

Post-1965 experience

- Opposition to Hindi imposition, particularly in Tamil Nadu, demonstrated the political sensitivity of language.

- Continued use of English provided an additional mechanism for inter-regional and Union-level communication.

Conclusion:

India's language framework demonstrates how **constitutional accommodation, federalism and linguistic pluralism** can be combined with the objective of national integration.

UPSC TAKEAWAY

India's constitutional language settlement was not a victory of one language over another; it was an attempt to reconcile national integration with India's linguistic diversity.

Keywords for Mains:

Linguistic pluralism | Constitutional accommodation | Federalism | Consensus-building | Linguistic minorities | Official language | Unity in diversity | Cooperative federalism

● **WORDLY WISE**

Technology is a useful servant
but a dangerous master.
— *Christian Lous Lange*

16.09.2026

WEST BENGAL HIGHER EDUCATION

University Transfers, Autonomy & the Challenge of Academic Excellence

Brief

- The **West Bengal Universities and Colleges (Administration and Regulation) (Amendment) Bill, 2026** was passed by the State Assembly, enabling transfers of teaching and non-teaching employees **across State-run universities**. Earlier, the framework primarily permitted transfers within colleges under the same university.

Key Provisions

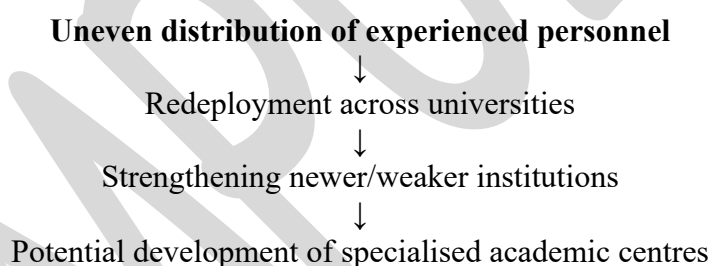
- The amendment introduces a mechanism for **inter-university transfer** of teaching and non-teaching staff.
- Reportedly, the **Chancellor, in consultation with the State Government**, can authorise such transfers for administrative reasons.
- Transferred employees can retain their **lien** in the original university or opt for absorption in the new institution.
- **Seniority is protected** based on the initial appointment, with provisions relating to transfer/moving expenses.
- The State argues that redeployment can help newer institutions obtain **experienced faculty and staff**.

Parallel reform

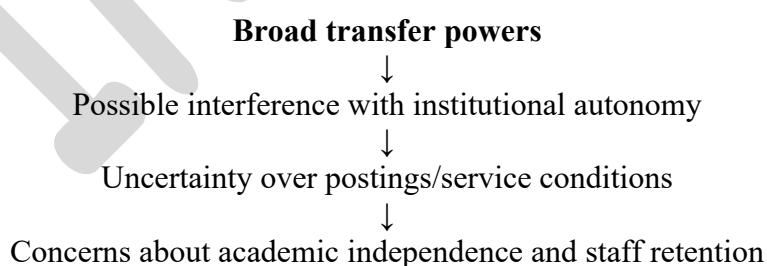
- ✂ The **West Bengal University Laws (Amendment) Bill, 2026** seeks to bring the provident-fund arrangements of employees of **21 State universities** under a common legal framework based on the 1983 Act.

Core Governance Issue

Government's rationale



Concerns raised by teacher organisations



- ➔ Teacher associations have criticised the legislation on grounds including **university autonomy and employment stability**.

Why University Autonomy Matters

Universities require autonomy in:

- **Academic decision-making**
- Faculty recruitment and deployment
- Curriculum and research priorities
- Institutional planning
- Internal governance

The larger constitutional-governance question is:

How can government accountability be balanced with institutional autonomy?

Excessive executive control may affect academic independence, while complete insulation from public accountability can create governance problems.

Structural Challenges

The issue extends beyond staff transfers:

Vacancies + inadequate infrastructure + funding constraints + governance disputes



Reduced institutional capacity



Difficulty attracting and retaining high-quality faculty



Challenges in building **centres of academic excellence**

Therefore:

Redistributing existing personnel cannot by itself eliminate an overall shortage of faculty.

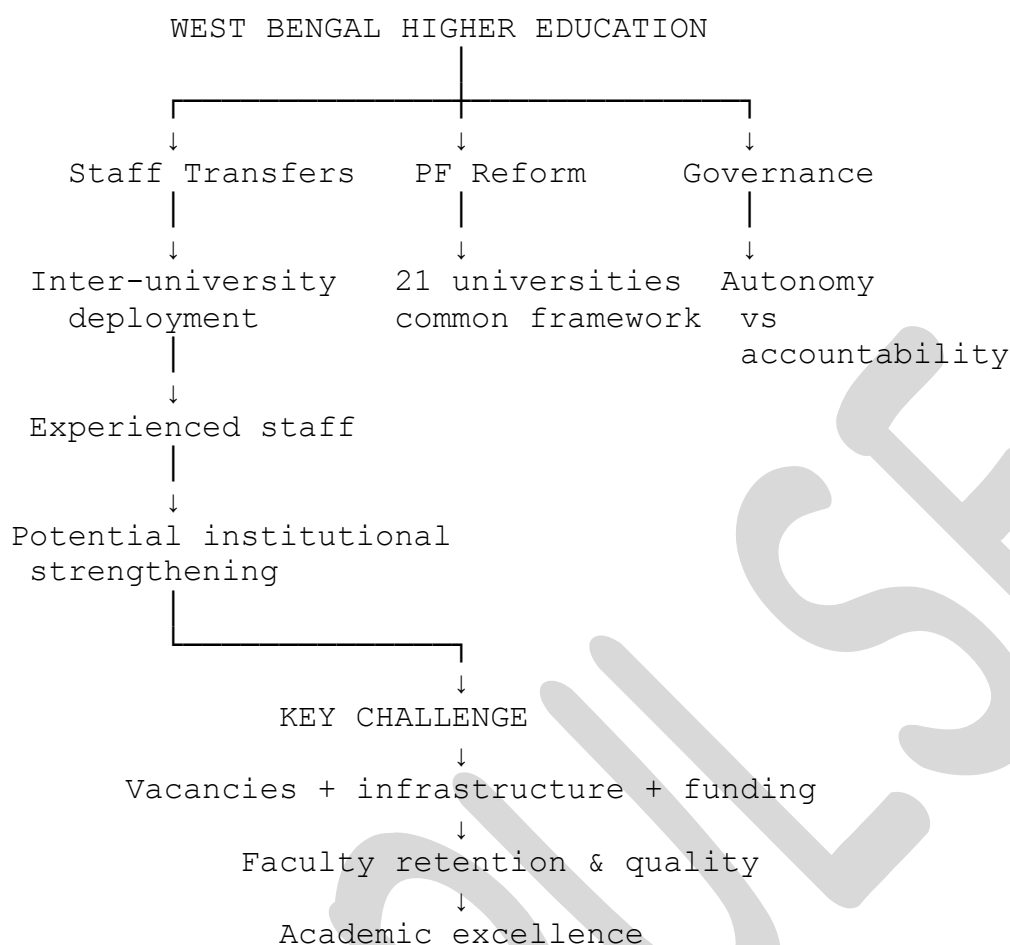
Provident Fund Dimension

The parallel legislation seeks to establish a **common PF framework for 21 universities.**

Importance

- Uniform service framework
- Greater administrative consistency
- Clarity over employees' retirement benefits
- Need for safeguards during inter-university transfers

MIND MAP



PRELIMS POINTERS

- **State Universities** → Primarily governed through State legislation, subject to applicable constitutional/statutory frameworks.
- **University autonomy** → Important for academic freedom and institutional governance.
- **NAAC accreditation** → Institutional assessment includes multiple dimensions of higher-education quality; faculty and institutional resources are relevant components.
- **PF** → Retirement/social-security mechanism for employees.
- **Inter-university transfer** → Distinct from transfer between colleges within the same university.



PROBABLE MAINS QUESTION

Q. “Administrative reforms in higher education must balance government accountability with institutional autonomy.” Discuss in the context of recent reforms in West Bengal. (150 words)

Conclusion

Building **centres of excellence** requires more than redistribution of personnel. Sustainable improvement depends on **filling vacancies, adequate funding, infrastructure, transparent recruitment, stable governance and institutional autonomy**. The challenge is to design a framework where public accountability strengthens—rather than substitutes for—academic independence.

UPSC takeaway: Higher-education excellence = Faculty + Infrastructure + Funding + Autonomy + Accountable Governance, rather than staff redistribution alone.

US FED RATE HIKE

Inflation, Monetary Policy & the Hawkish–Dovish Debate

Brief

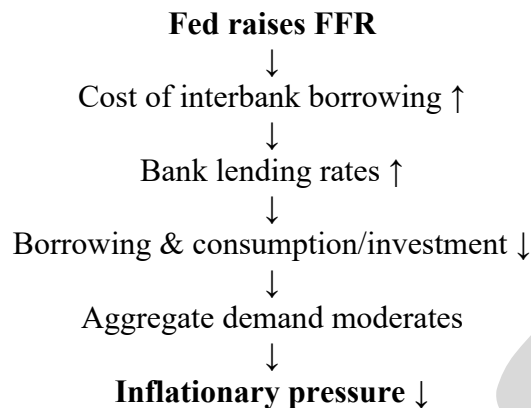
- The **US Federal Reserve** raised the **Federal Funds Rate (FFR)** by **25 basis points**, taking the target range to **3.75–4%**, amid persistent inflationary pressures.
- The decision has renewed debate over whether the Fed's stance is **hawkish, dovish, or somewhere in between**, and has implications for global financial markets, capital flows and emerging economies such as India.

Why Did the Fed Raise Rates?

Inflation remains above target

- US consumer prices increased **0.4% month-on-month in August**.
- The 12-month inflation rate was around **3.4%**, according to the article.
- Energy prices have contributed significantly to price pressures.
- The Fed's long-run inflation target is **2%**.

Monetary transmission



Thus, higher interest rates are a conventional tool for controlling **demand-driven inflation** and anchoring inflation expectations.

Fed's Dual Mandate ★

Unlike many central banks that primarily focus on price stability, the US Federal Reserve has a **dual mandate**:

① Price Stability

→ Keep inflation low and stable.

② Maximum Employment

→ Support conditions conducive to high employment.

Therefore, the Fed must constantly balance:

Inflation control ↔ Economic growth & employment

Hawkish vs Dovish Monetary Policy

Hawkish

Prioritises inflation control
Higher interest rates
Tighter monetary conditions
Reduces aggregate demand
Can strengthen currency
May slow investment/consumption

Dovish

Gives greater weight to growth/employment
Lower interest rates
Easier monetary conditions
Supports aggregate demand
Can weaken currency
May stimulate investment/consumption

Easy memory trick:

Hawk → Higher rates → Fight inflation

Dove → Lower rates → Support growth

Why the Decision Can Be Interpreted Differently



Interpretation 1: Hawkish

The rate hike can be viewed as hawkish because:

- Inflation remains substantially above the **2% target**.
- Energy prices are adding to inflationary pressures.
- The Fed is willing to tighten despite political pressure for lower rates.
- A relatively healthy labour market gives policymakers room to focus on inflation.



Interpretation 2: Not Very Hawkish

The Fed's projections do not point towards a prolonged aggressive tightening cycle.

- If inflation remains elevated for several years, a more aggressive sequence of rate increases might have been expected.
- Instead, the projections indicate only limited additional tightening.



Interpretation 3: Relatively Dovish

Another interpretation is that the Fed may be signalling caution because:

- Economic activity remains resilient.
- Employment conditions remain relatively strong.
- Excessive tightening could unnecessarily weaken economic activity.
- Policymakers may want to avoid overtightening when inflation is partly influenced by **energy and supply-side shocks**.

Thus, the **size and expected path** of rate changes matter—not merely whether the Fed raises rates.

Inflation Projections

According to the article's cited projections:

Year	PCE inflation projection
2026	3.7%
2027	2.3%
2028	2.1%

The projections suggest that inflation could remain above the Fed's **2% target** for an extended period.

Implication

Persistent inflation

- Higher-for-longer interest rates
- Tighter financial conditions

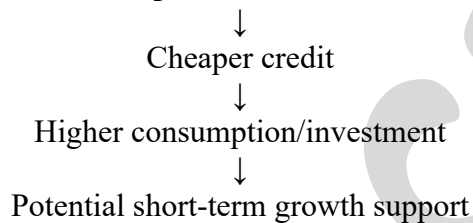
- Slower demand
- Potential pressure on investment and asset prices

Political Economy of Monetary Policy

The Fed's independence becomes particularly important when governments favour easier monetary policy.

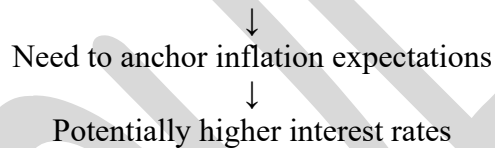
Political pressure

Government preference for lower rates



Central-bank perspective

Persistent inflation



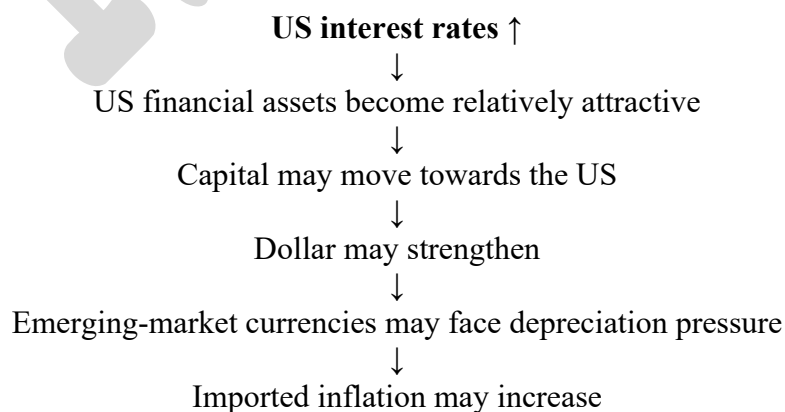
Core principle

- **Central-bank credibility depends partly on its ability to pursue its statutory mandate without inappropriate short-term political influence.**

Global Spillovers of US Monetary Policy ★

The US dollar occupies a central position in the international financial system.

Fed rate hike



For India

Potential effects include:

US rates ↑

- FPI outflows / reduced inflows
- Rupee depreciation pressure
- Imported inflation, especially commodities
- Higher domestic financial-market volatility

However, the actual impact depends on:

- India's inflation
- Growth prospects
- Interest-rate differential
- Global risk appetite
- Forex reserves
- Domestic monetary policy

Impact on RBI

The Fed's decision matters for the **RBI Monetary Policy Committee (MPC)** because India's monetary policy operates within an interconnected global financial system.

RBI's policy dilemma

Higher domestic rates

- Inflation control
- Support currency
- But higher borrowing costs
- Potentially weaker investment and growth

Lower domestic rates

- Support credit and growth
- But could increase inflation/capital-outflow pressures

Therefore:

RBI policy cannot mechanically follow the Fed. It must respond primarily to India's own inflation-growth conditions while accounting for external spillovers.

Supply-Side vs Demand-Side Inflation

This distinction is crucial.

Demand-side inflation

Demand $\uparrow$ > productive capacity

→ Prices $\uparrow$

Interest-rate tightening is relatively effective.

Supply-side inflation

Energy/food/geopolitical shock



Production/input costs $\uparrow$

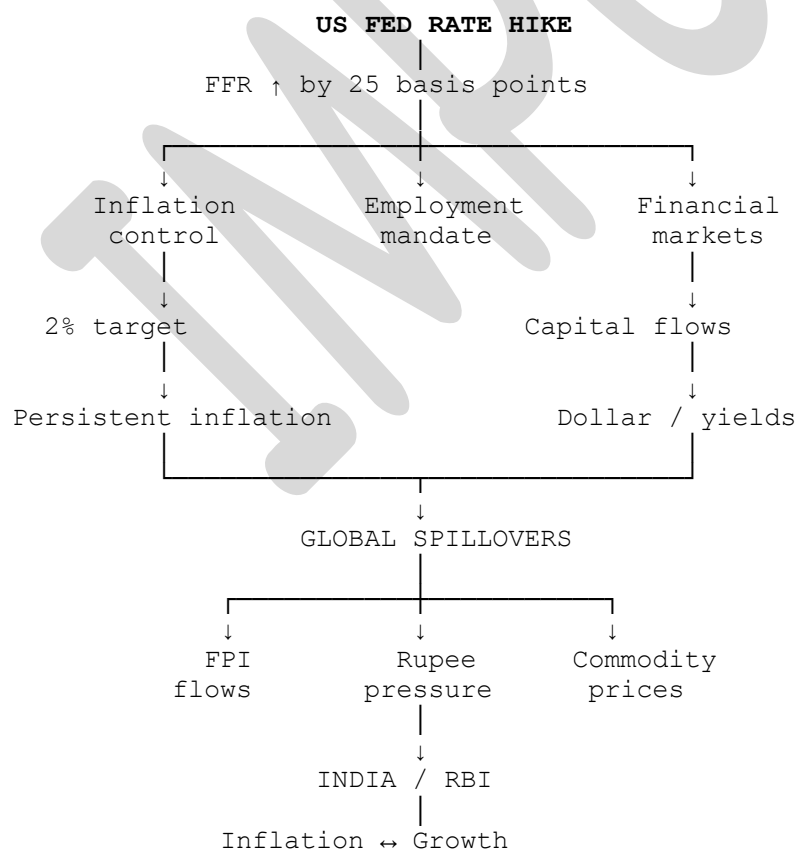


Prices $\uparrow$

- ✂ **Rate hikes cannot directly produce more oil, food or other supplies.**
- ✂ They can, however, prevent temporary supply shocks from becoming **persistent inflation through expectations and second-round effects.**



MIND MAP



PRELIMS QUICK REVISION

Federal Funds Rate

- Short-term interest rate associated with lending of reserve balances among US depository institutions.
- The **Federal Open Market Committee (FOMC)** sets the target range.

Basis Point

1 basis point = 0.01 percentage point

Therefore:

25 bps = 0.25 percentage point

FOMC

- Federal Reserve body responsible for monetary policy decisions.
- It has **12 voting members** under the standard structure.

PCE Price Index

- Personal Consumption Expenditures price index.
- Important inflation measure used by the Fed.

Inflation Target

2% over the longer run.

PRELIMS TRAPS

1. **Fed's only mandate is inflation control**
✗ Incorrect — it has a dual mandate involving **maximum employment and price stability**.
2. **25 basis points = 25%**
✗ Incorrect.
25 bps = 0.25 percentage point.
3. **Every Fed rate hike automatically causes an Indian rate hike.**
✗ Incorrect — RBI independently assesses domestic conditions.
4. **Rate hikes directly solve supply-side inflation.**
✗ Incorrect — monetary policy mainly influences demand and inflation expectations.
5. **Hawkish means lower interest rates.**
✗ Incorrect — hawkish generally indicates greater emphasis on inflation control/tighter monetary conditions.



PROBABLE UPSC MAINS QUESTIONS

Q1. “US monetary policy decisions have consequences far beyond the American economy.” Discuss the transmission channels through which a US Fed rate hike can affect emerging economies such as India.

Q2. “Monetary policy is necessary but insufficient for dealing with supply-side inflation.” Examine with reference to energy-price shocks.

Introduction

The US Federal Reserve's rate decisions have global significance because of the central role of the dollar and US financial markets in international capital flows.

Body

A rate hike:

- Raises borrowing costs and moderates aggregate demand in the US.
- Can increase the attractiveness of US financial assets.
- May encourage capital flows towards the US and place depreciation pressure on emerging-market currencies.
- A weaker currency can increase imported inflation.
- Higher global yields can tighten financial conditions for emerging economies.

For India, the RBI must balance: **inflation control + exchange-rate stability + capital-flow management + economic growth.**

However, India's monetary policy cannot mechanically mirror the Fed because domestic inflation, growth, liquidity and financial conditions remain the primary considerations.

Conclusion

The appropriate response is therefore **calibrated monetary independence**, supported by adequate foreign-exchange buffers and sound macroeconomic fundamentals.



UPSC CORE TAKEAWAY

Fed rate hike

- US borrowing costs ↑
- Demand ↓
- Inflation pressure ↓

But globally:

US yields ↑

- Dollar/US assets become relatively attractive

- Capital-flow pressures
- Emerging-market currency & financial conditions affected

One-line revision:

For UPSC, remember: Fed policy is simultaneously a domestic inflation tool and a major source of global financial spillovers.

17.09.2026

INDIA–PAKISTAN NAVAL COLLISION

Maritime Safety, 1991 Agreement & Confidence-Building Measures

Brief

- A reported collision between an **Indian Navy frontline warship and Pakistan Navy vessel PNS Hunain** occurred in international waters of the **North Arabian Sea**, about **120 nautical miles from the Gulf of Oman**.
- According to Indian official sources, the Pakistani vessel approached the Indian warship at high speed and the collision caused minor damage to the Pakistani vessel, while the Indian warship continued its mission. India subsequently summoned Pakistan's **Charge d'Affaires** and lodged a protest.
- Indian officials characterised the incident as a serious navigation/safety violation rather than a deliberate act of aggression.

The 1991 India–Pakistan Agreement ★

Full purpose

- **Agreement between India and Pakistan on Advance Notice on Military Exercises, Manoeuvres and Troop Movements, 1991**
- It was designed as a **confidence-building measure (CBM)** to reduce the possibility that military activity by one country would be misinterpreted by the other.

Objectives



Article 10 – Key Prelims Point ★

According to the provision cited by the Indian government:

- Naval ships and submarines of the two countries should not approach **within 3 nautical miles of each other** while operating in international waters, with the objective of avoiding accidents.

Conversion

1 nautical mile ≈ 1.852 km

Therefore:

3 nautical miles ≈ **5.56 km**

📌 Prelims trap:

A nautical mile is **not equal to 1.6 km** (statute mile).

Why Was the 1991 Agreement Needed?

The agreement emerged from a period when India-Pakistan relations were marked by:

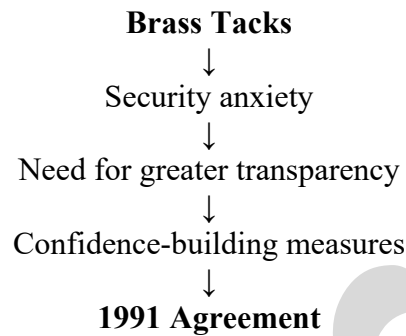
- Military tensions
- Nuclear-weapons development
- Large military exercises
- Risk of misinterpretation of military intentions

Brass Tacks Exercise — 1987

- India conducted the large-scale **Exercise Brass Tacks** near the India-Pakistan border.

- Pakistan perceived the scale of the exercise as threatening, highlighting the danger of **military exercises being misread as preparation for offensive action.**

Result



What Does the Agreement Cover?

The framework concerns the:

Land forces

- Rules/notification relating to major military exercises and troop movements.

Naval forces

- Notification and safety provisions concerning naval exercises and movements.

Air forces

- Mechanisms relating to military aircraft and avoidance of airspace violations.

➔ The broader objective is **predictability and crisis management**, rather than limiting either country's basic military capabilities.

What is a Major Naval Exercise?

As described in the article, a major naval exercise involves:

Six or more ships
 +
Destroyer/frigate size or above
 +
 Operating in company
 +
 Crossing into the other country's **EEZ**

Prelims:

Do not confuse **territorial sea** with **Exclusive Economic Zone (EEZ)**.

EEZ

- Generally extends up to **200 nautical miles** from the coastal baseline.
- It gives the coastal State specific **sovereign rights over natural resources**, while other States retain important freedoms such as navigation.

Earlier Naval Incident – 2011

A previous India-Pakistan naval incident occurred on 16 June **2011** in the **Gulf of Aden**, involving:

- Indian Navy frigate **INS Godavari**
- Pakistani Navy ship **PNS Babur**

The two vessels brushed past each other.

India subsequently lodged a protest. The incident also involved references to navigational-safety rules and **Article 10 of the 1991 Agreement**. The Indian Ministry of External Affairs' historical foreign-relations record documents the 2011 episode and the competing accounts.

Why Such Incidents Matter

A. Risk of Miscalculation

India and Pakistan are **nuclear-armed neighbours**.

Therefore:

Minor tactical incident

↓

Misinterpretation

↓

Political/diplomatic escalation

↓

Potential security crisis

The importance of CBMs lies in preventing this escalation pathway.

B. Maritime Security

The **North Arabian Sea** is strategically important because of:

- Gulf energy routes
- Arabian Sea shipping
- Access to the Indian Ocean
- Maritime trade
- Naval deployments

Safe separation and communication between naval vessels are therefore important even when relations are politically strained.

C. Crisis Communication

Diplomatic protest and summoning of an envoy are examples of **state-to-state crisis management mechanisms**.

They allow governments to:

- Convey concerns formally
- Seek clarification
- Signal unacceptable conduct
- Prevent recurrence
- Keep incidents from escalating

Confidence-Building Measures (CBMs)

Meaning

CBMs are arrangements intended to **increase transparency, predictability and communication between potentially adversarial states**.

India-Pakistan examples

1991

→ Advance Notice Agreement

1988

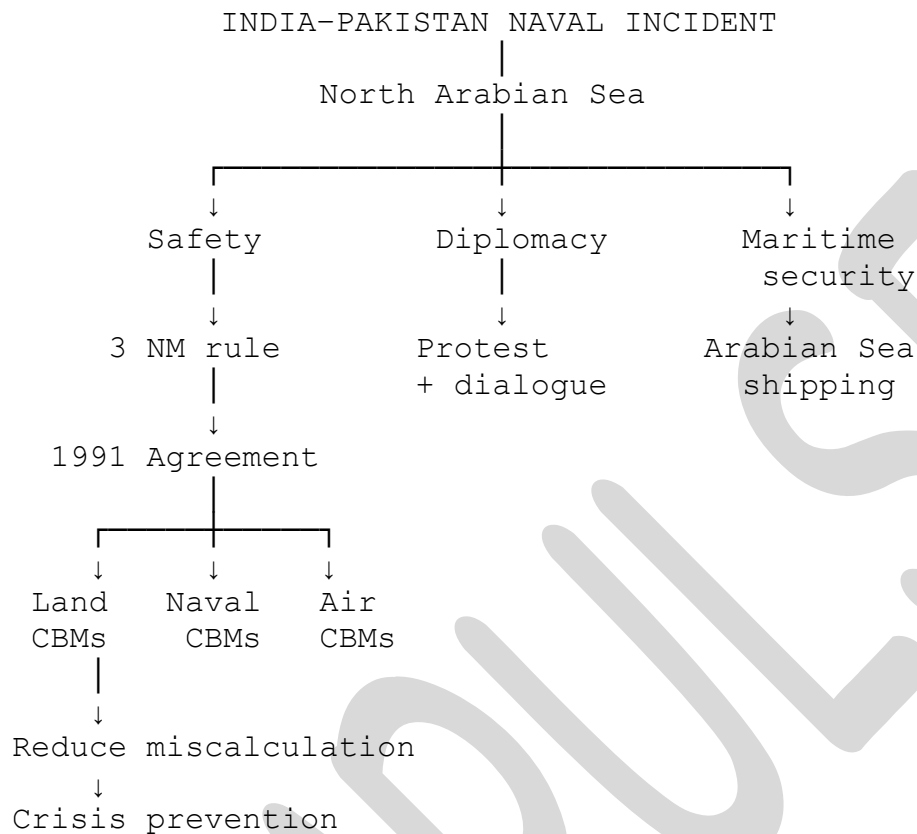
→ Agreement on Prohibition of Attack against Nuclear Installations and Facilities

1991

→ Agreement concerning prevention of airspace violations and military aircraft overflights/landings

These measures seek to create **guardrails even when broader political relations remain difficult.**

MIND MAP



PRELIMS QUICK REVISION

<i>Concept</i>	<i>Key Point</i>
PNS Hunain	Pakistani naval vessel identified in the reported incident
North Arabian Sea	Location of reported collision
3 nautical miles	Minimum separation referred to in Article 10
1 NM	≈ 1.852 km
1991 Agreement	Advance Notice on Military Exercises, Manoeuvres & Troop Movements
Brass Tacks	Large Indian military exercise, 1987
EEZ	Generally extends up to 200 NM
CBM	Confidence-Building Measure
INS Godavari-PNS Babur	Earlier naval incident, 2011

PRELIMS TRAPS

1. The 1991 Agreement prohibits military exercises by India and Pakistan.

✗ No.

It establishes **notification, transparency and safety mechanisms.**

2. The 3-NM rule applies to territorial waters only.

✗ Specifically concerns naval ships/submarines operating in **international waters.**

3. EEZ means complete territorial sovereignty up to 200 NM.

✗ Incorrect. EEZ primarily provides **resource-related sovereign rights and jurisdiction**, while important freedoms of navigation remain.

4. CBMs eliminate military competition.

✗ No.

They aim primarily at **reducing uncertainty, miscalculation and accidental escalation.**

PROBABLE UPSC MAINS QUESTION

Q. “Confidence-building measures (CBMs) remain important instruments of crisis management between nuclear-armed adversaries.” Discuss with reference to India-Pakistan relations. (250 words)

Answer Framework

Introduction:

CBMs seek to reduce mistrust and miscalculation by increasing communication, transparency and predictability between states.

Body:

Importance

- Reduce ambiguity surrounding military movements.
- Establish communication and notification mechanisms.
- Prevent accidental military encounters.
- Create channels for diplomatic crisis management.
- Particularly significant between nuclear-armed states.

India-Pakistan examples

- 1991 Agreement on advance notice of military exercises, manoeuvres and troop movements.
- 1988 agreement concerning nuclear installations.
- Arrangements concerning airspace violations and military aircraft.

Limitations

- CBMs cannot resolve underlying political disputes.

- Their effectiveness depends upon compliance.
- Maritime and air incidents can still occur despite established mechanisms.
- Breakdown of political dialogue can weaken institutionalised confidence-building.

Way Forward

- Maintain existing CBMs.
- Strengthen military-to-military communication.
- Improve incident-prevention protocols.
- Ensure prompt investigation and diplomatic clarification.
- Develop additional maritime safety mechanisms where required.

Conclusion

CBMs should be viewed as **risk-management mechanisms rather than substitutes for dispute resolution**. Their principal value lies in ensuring that an isolated military incident does not develop into a wider strategic crisis.

UPSC Core Takeaway

1991 Agreement → advance notification + minimum naval separation + transparency
→ reduce miscalculation → prevent accidental escalation.

The broader lesson is that **India-Pakistan CBMs function as safety guardrails**: they cannot eliminate strategic rivalry, but they can help manage the risks arising from military activities.

EPFO Wage Ceiling Raised to ₹25,000

Brief

The Union Cabinet approved raising the **statutory wage ceiling for EPFO coverage from ₹15,000 to ₹25,000 per month**, the first revision since **September 2014**.

- Expected to bring **~51 lakh additional employees** under EPFO.
- Coverage will expand to **provident fund, pension and insurance** benefits.
- **EPS pension contribution ceiling** rises from **₹1,250 to ₹2,080/month**.
- Effective from **September 17, 2026**, as reported in the article.

What is EPFO?

- **Employees' Provident Fund Organisation (EPFO)** is a **statutory** organisation under the: **Ministry of Labour & Employment**
- It administers three major social-security schemes:

EPFO → 3 Major Schemes

EPFO

- **EPF Scheme, 1952**
- **Employees' Pension Scheme (EPS), 1995**
- **Employees' Deposit Linked Insurance Scheme (EDLI), 1976**

<i>Scheme</i>	<i>Main purpose</i>
EPF	Retirement savings/provident fund
EPS	Pension/social-security benefit
EDLI	Life-insurance benefit linked to employment

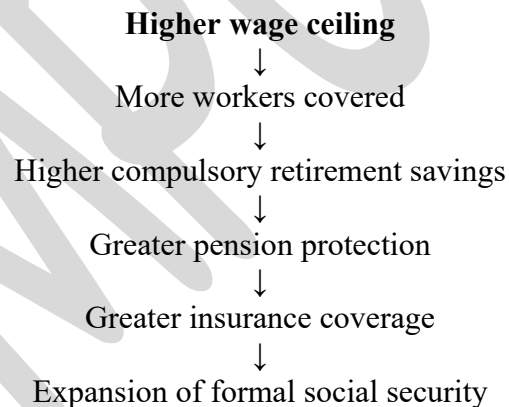
New EPFO Wage Ceiling

Earlier → Now

₹15,000/month → ₹25,000/month

The ceiling determines the wage level up to which **mandatory statutory contributions** apply.

Significance



EPF Contribution Structure ★

For covered employees:

Employee contribution

12% of basic wages + DA + retaining allowance, where applicable

→ Entire 12% goes to EPF

Employer contribution

12%

This is divided into:

Employer's 12%

→ 3.67% → EPF

→ 8.33% → EPS

In addition:

Government → 1.16% → EPS, subject to the statutory wage ceiling.

Important Prelims Point

Employee does NOT contribute directly to EPS.

The employee's entire statutory contribution goes to **EPF**.

Effect of the New Ceiling

EPS contribution ceiling

Earlier:

$₹15,000 \times 8.33\% \approx ₹1,250/\text{month}$

Now:

$₹25,000 \times 8.33\% \approx ₹2,080/\text{month}$

Thus, the maximum monthly employer contribution towards EPS rises from:

₹1,250 → ₹2,080

Government Financial Implication

The government will bear additional expenditure because of its contribution towards EPS.

- Additional annual government expenditure: **~₹1,089 crore**
- Total annual government support for pension contribution: **~₹11,339 crore**
- Existing budgetary support: **~₹10,250 crore**

The estimated average total EPF contribution could increase by approximately:

₹600 per worker per month

Why was the Ceiling Raised?

The previous ceiling was fixed in **September 2014**.

2014

₹6,500 → ₹15,000

2026

₹15,000 → ₹25,000

The government cited:

- Sustained **wage growth**
- Rising incomes
- Expansion of **formal employment**
- Need to align the statutory framework with prevailing wage levels
- Expansion of **social-security coverage**

Who Benefits?

Workers earning ₹15,000–₹25,000/month

This group is particularly important.

Previously:

Salary > ₹15,000

→ statutory contribution restricted to ceiling in applicable cases

Now:

Salary up to ₹25,000

→ higher statutory contribution base

Therefore:

Higher contribution

- Higher retirement corpus
- Greater pension protection
- EDLI insurance coverage

Possible Concerns

① Lower take-home salary

Higher employee contribution:

Higher PF deduction



Lower monthly take-home pay

This is particularly relevant for workers in the ₹15,000–₹25,000 wage bracket.

② Employer cost

Employers may face higher:

- EPF contribution
- EPS contribution
- EDLI-related costs

This could increase labour costs, especially for:

MSMEs + manufacturing sector

③ CTC absorption

A concern raised by experts is that employers could absorb the additional statutory contribution within the existing **Cost to Company (CTC)**.

Therefore:

Higher PF contribution

≠ necessarily higher immediate disposable income.

④ Formalisation vs cost of employment

The reform creates a policy trade-off:

Higher social-security protection

vs

Higher employment cost

If employers perceive formal employment as more expensive, there could be concerns regarding hiring decisions, particularly among labour-intensive MSMEs.

Minimum Wage Connection ★

The statutory minimum wages for unskilled workers in several States/UTs already exceed the old ₹15,000 ceiling.

Examples:

State/UT

Approx. monthly minimum wage cited

Delhi	₹17,800
Maharashtra	₹17,000
Karnataka	₹16,800
Haryana	₹16,500
Gujarat	₹16,000
Rajasthan	₹15,500
Uttarakhand	₹15,220

UPSC Significance

This demonstrates the gap between:

Statutory wage ceiling for EPFO → ₹15,000

and

Prevailing minimum wages in several jurisdictions → >₹15,000

Hence, revision can make the social-security framework more consistent with changing wage levels.

Social-Security Architecture

EPFO Wage Ceiling Revision

₹15,000 → ₹25,000

↓

Wider formal-worker coverage

↓

EPF

Retirement savings

•

EPS

Pension protection

•

EDLI

Life-insurance protection

↓

Stronger social-security net

↓

Greater formalisation of labour

Broader Significance for India

A. Social-security coverage

Expands access to institutional retirement savings and insurance.

B. Financial security

Encourages long-term savings rather than dependence solely on current wages.

C. Formalisation

Linking employment with statutory social-security contributions can strengthen formal employment.

D. Labour-market signalling

Higher statutory contribution ceilings may encourage States and employers to recognise rising wage levels.

E. Retirement preparedness

Higher contributions can increase accumulated retirement savings over the working lifetime.

EPFO vs EPS – Prelims Trap

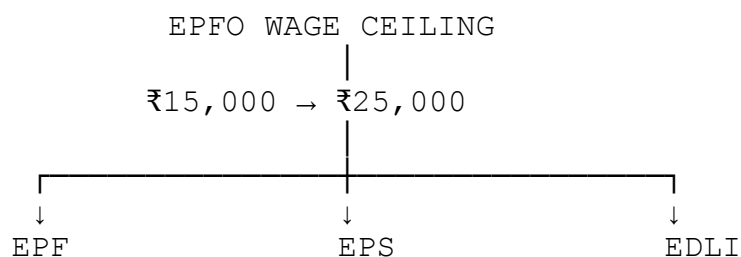
<i>Feature</i>	<i>EPF</i>	<i>EPS</i>
Main objective	Provident fund/retirement savings	Pension
Employee contribution	12% statutory contribution	No direct employee contribution
Employer contribution	3.67%	8.33%
Government contribution	No direct equivalent under this structure	1.16% , subject to ceiling
Nature	Accumulated retirement savings	Pension benefit

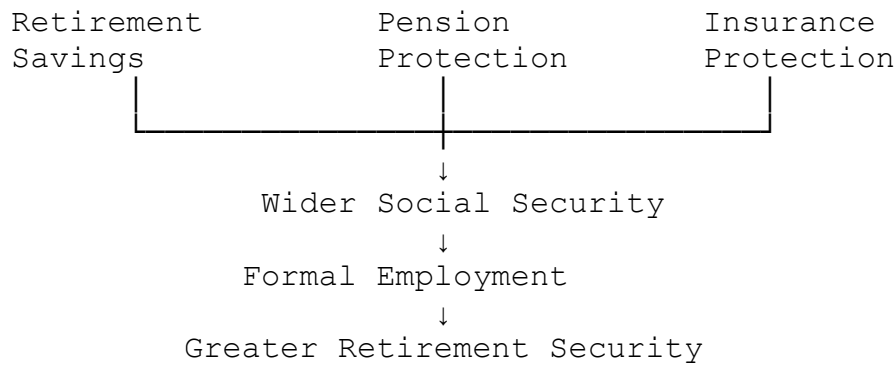
Remember:

Employee 12% → EPF

Employer 12% → 3.67% EPF + 8.33% EPS

Mind Map





Prelims Quick Revision ★★☆☆

- EPFO functions under the **Ministry of Labour & Employment**.
- EPF is governed by the **Employees' Provident Funds & Miscellaneous Provisions Act, 1952**.
- Major EPFO schemes:
 - EPF
 - EPS
 - EDLI
- Wage ceiling increased: **₹15,000 → ₹25,000**
- Previous revision: **2014: ₹6,500 → ₹15,000**
- Employer contribution: **12%**
- Employer's 12%: **3.67% EPF + 8.33% EPS**
- Employee's statutory 12%: **Entirely EPF**
- EPS contribution ceiling: **₹1,250 → ₹2,080**
- Government contributes: **1.16% towards EPS**, subject to the wage ceiling.
- Expected additional EPFO coverage: **~51 lakh employees**
- EPFO provides a combination of: **retirement savings + pension + insurance**

Possible UPSC Prelims Question

Q. With reference to the Employees' Provident Fund Organisation (EPFO), consider the following statements:

1. The employee's entire statutory contribution of 12% goes towards the Employees' Provident Fund.
2. A part of the employer's contribution is allocated towards the Employees' Pension Scheme.
3. Employees make a separate 8.33% contribution from their salary towards EPS.
4. EDLI provides insurance-related social-security benefits.

Which of the statements given above are correct?

Answer: 1, 2 and 4 only

Probable UPSC Mains Question

Q. “Raising the EPFO wage ceiling can simultaneously deepen social-security coverage and increase the cost of formal employment.” Discuss the opportunities and challenges associated with the reform. **(250 words)**

Mains Answer Framework

Introduction

- EPFO is a major pillar of India's contributory social-security architecture.
- Wage ceiling raised from ₹15,000 to ₹25,000 after 12 years.

Body

Benefits

- Wider social-security coverage
- Higher retirement savings
- Greater pension protection
- EDLI insurance coverage
- Supports formalisation
- Aligns ceiling with wage growth

Concerns

- Lower take-home income due to higher employee contribution
- Higher employer labour costs
- Possible CTC restructuring
- Greater burden on MSMEs
- Need to ensure that formalisation does not discourage employment creation

Way Forward

- Gradual and predictable contribution reforms
- Support for labour-intensive MSMEs
- Strong enforcement against illegal wage deductions
- Greater portability of social-security benefits
- Integration with broader universal social-security architecture
- Financial literacy among workers

Conclusion

The reform can strengthen India's social-security architecture, but its effectiveness will depend on balancing **worker protection, employer affordability and employment generation**.

One-line takeaway

₹15,000 → ₹25,000 EPFO ceiling = wider coverage + higher retirement/pension contributions, but also higher employee deductions and employer costs.

United Kingdom:

Independence Movements & Constitutional Question

Brief

- The **Cardiff Agreement** signed by the First Ministers of **Scotland, Wales and Northern Ireland** has renewed debate over self-determination and possible independence referendums within the UK.
 - The leaders signed it as **party representatives**, not formally on behalf of their governments.

UK, Great Britain & British Isles – Distinction ★

United Kingdom (UK) = England + Scotland + Wales + Northern Ireland

Great Britain = England + Scotland + Wales

→ the largest island of the British Isles.

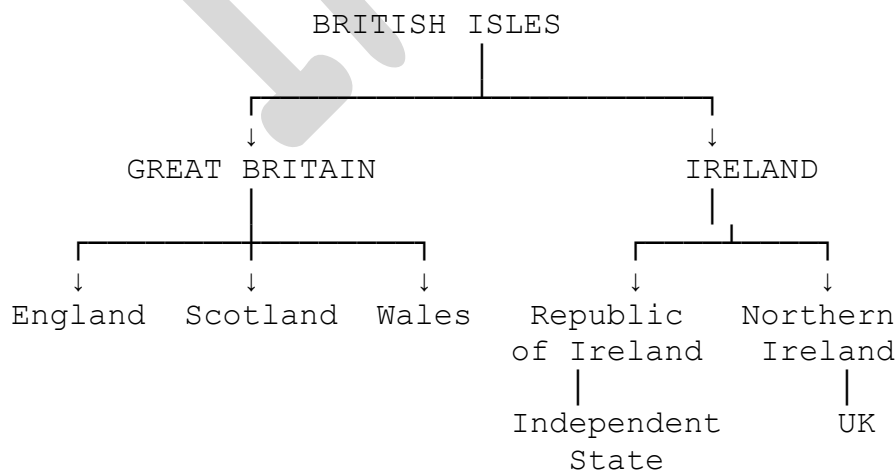
Ireland =

→ **Republic of Ireland** (independent state)

→ **Northern Ireland** (part of UK)

British Isles = geographical grouping comprising **Great Britain, Ireland and several smaller islands.**

Mind Map



Historical Evolution

- **1707:** Acts of Union united **England and Scotland**, creating the Kingdom of Great Britain.
- **Wales:** conquered by England in the medieval period and legally incorporated into the Kingdom of England through the **1536 Act of Union**.
- **1801:** Great Britain and Ireland were united following the **Acts of Union 1800**.
- **1922:** Most of Ireland became independent following the **Anglo-Irish War (1919–21)**.
- **Northern Ireland:** remained within the UK.
- Hence, the present constitutional name became the **United Kingdom of Great Britain and Northern Ireland**.

Scottish Independence

- The **Scottish National Party (SNP)** made independence a central political objective.
- Following its 2011 Scottish Parliament victory, powers were transferred through a **Section 30 Order under the Scotland Act 1998**, enabling the 2014 referendum.

2014 Referendum

Question:

“Should Scotland be an independent country?”

Result:

- **No – 55.3%**
- **Yes – 44.7%**

In **2022**, the UK Supreme Court held that the Scottish Parliament **could not unilaterally legislate for another independence referendum** because constitutional matters remain reserved to the UK Parliament.

Key implication

- ⊗ A further referendum therefore requires **constitutional/legal authorisation from Westminster**, rather than unilateral action by Holyrood.

Northern Ireland & Wales

Northern Ireland

- A **1973 border poll** asked whether Northern Ireland should remain in the UK or join a united Ireland.

- **98.9%** voted to remain, although Irish nationalists largely boycotted the poll.
- Under the **Belfast/Good Friday Agreement**, constitutional change through a border poll is an established mechanism under specified conditions.

Wales

- Has not held an independence referendum.
- Welsh independence is advocated by **Plaid Cymru**, among others.

Significance of the Cardiff Agreement

- The agreement invokes the principle of **self-determination** and calls for constitutional arrangements enabling future referendums.
- However, political demands alone do not automatically create a legal right to unilateral secession.

UPSC Perspective

Devolution → National identity → Self-determination → Constitutional authority → Referendum → Possible territorial reorganisation

- The UK illustrates the tension between **territorial integrity of a sovereign state** and **demands for democratic self-determination**.

Prelims Pointers ★

- UK has **4 constituent countries**.
- Great Britain has **3 countries**: England, Scotland, Wales.
- Northern Ireland ≠ Republic of Ireland.
- **2014 Scottish referendum**: 55.3% No, 44.7% Yes.
- **Scotland Act 1998 → Section 30 Order** enabled the 2014 referendum.
- **2022 UK Supreme Court**: Scottish Parliament cannot unilaterally call an independence referendum.
- **1973**: Northern Ireland border poll.
- **1707**: England–Scotland Union.
- **1801**: Great Britain–Ireland Union.
- **1922**: Most of Ireland left the UK.

Probable Mains Question

Q. “The constitutional evolution of the United Kingdom demonstrates the complex relationship between devolution, territorial integrity and the principle of self-determination.” Discuss with reference to Scotland, Wales and Northern Ireland. (250 words)

How UK differs from Great Britain

● Scotland, Wales, Northern Ireland and England make up the United Kingdom.

● The term Great Britain refers to three nations — England, Scotland and Wales.

● Ireland is made up of the Republic of Ireland and Northern Ireland.



Indian Railways:

Multitracking & Dedicated Freight Corridors

Brief

- The Union Cabinet approved **eight multitracking projects covering 1,196 km**, costing about **₹20,804 crore**, to decongest India's busiest railway routes. Indian Railways is also pursuing four-line infrastructure across its **seven High-Density Networks (HDNs)**.

High-Density Networks (HDNs) ★

The seven HDNs include:

- Delhi–Guwahati
- Mumbai–Delhi
- Howrah–Delhi
- Mumbai–Howrah
- Mumbai–Chennai
- Delhi–Chennai
- Chennai–Howrah

Together, they account for about **11,051 km**, merely ~16% of the railway network, but carry over 40% of total traffic.

Several sections operate above their desirable capacity. For example, the **28-km Karjat–Lonavala section** handles around 67 trains per day each way against a capacity of 40, causing congestion and delays.

Why Multitracking?

Existing 2 tracks
Passenger + Freight
↓
Congestion
↓
Additional tracks
↓
Higher capacity + operational flexibility
↓
Fewer delays + faster freight movement

Indian Railways aims to increase freight loading from around **1,670 million tonnes (2025–26)** to **3,000 million tonnes by 2030**. Multitracking can facilitate this by increasing capacity on saturated trunk routes.

Dedicated Freight Corridors (DFCs) ★★ ★

DFCs are railway routes designed primarily for **freight trains**, allowing freight traffic to bypass congested passenger routes.

Eastern DFC: Ludhiana–Sonmargar
→ primarily coal and mineral traffic.

Western DFC: connects western ports such as **JNPT, Mumbai, Mundra, Kandla and Pipavav** with northern consumption/industrial centres.

Proposed East-West DFC: Dankuni–Surat (~1,738 km)
→ expected to serve coal, iron ore, bauxite, manganese, steel, fertiliser and port traffic.

Other proposed corridors include:

- **East Coast:** Kharagpur–Vijayawada
- **North-South:** Itarsi–Vijayawada via Nagpur

Economic & Environmental Significance

Multitracking + DFCs

↓
Higher railway capacity
↓
Faster & more reliable freight
↓
Lower logistics costs
↓
Greater rail freight competitiveness
↓
Potential shift from road to rail
↓
Lower congestion and transport emissions

Rail freight currently accounts for only about **27% of India's freight transport**, despite its cost and environmental advantages.

Challenges

- High capital expenditure and land requirements
- Last-mile connectivity to ports, industrial clusters and warehouses
- Terminal bottlenecks
- Need for modern signalling and efficient scheduling

- Competition from road freight

Prelims Pointers ★

- 7 HDNs → ~16% network but >40% traffic
- DFC = freight-dedicated railway route
- Eastern DFC: Ludhiana-Sonnagar
- Proposed East-West DFC: Dankuni-Surat
- Proposed East Coast: Kharagpur-Vijayawada
- Proposed North-South: Itarsi-Vijayawada via Nagpur

Probable Mains Question

Q. “Multitracking and Dedicated Freight Corridors can transform Indian Railways into a more efficient freight backbone.” Discuss their significance and challenges. (150 words)

Introduction:

Indian Railways carries a disproportionately large share of national passenger and freight movement through a network where several trunk routes are heavily saturated.

Body:

- Multitracking → increases line capacity.
- DFCs → segregate freight traffic.
- Higher freight speed and reliability.
- Lower logistics costs.
- Potential modal shift from road to rail.
- Better port-industrial connectivity.
- Supports manufacturing and supply chains.
- Environmental benefits.

Challenges:

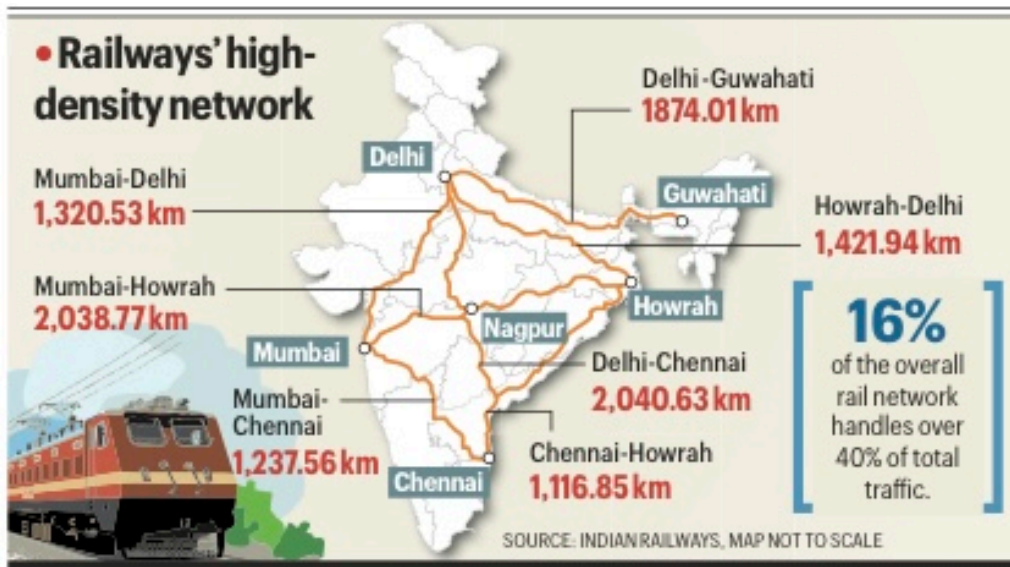
Land, capital expenditure, terminal capacity, last-mile connectivity and operational efficiency.

Way Forward:

Combine **multitracking + DFCs + multimodal logistics parks + port connectivity + modern signalling + terminal expansion.**

Conclusion:

India needs an integrated strategy combining **multitracking, DFCs, terminal expansion, last-mile connectivity and multimodal logistics** to reduce congestion and improve the competitiveness of rail-based freight.



18.09.2026

Collagen and Athletic Performance: **Science, Benefits & Limitations**

Brief

- **Collagen supplementation** is increasingly being used by high-performance athletes, particularly those recovering from injuries or participating in sports involving repeated high mechanical loads.
- However, sports scientists emphasise that collagen is a **supportive intervention, not a substitute for nutrition, rehabilitation or training.**

What is Collagen? ★

- ❑ **Collagen** is the **most abundant protein in animals** and an important structural component of connective tissues.
- ❑ It is found extensively in:
 - **Skin**
 - **Tendons**
 - **Ligaments**
 - **Cartilage**
 - **Other connective tissues**

Basic function

Collagen



Structural protein



Connective-tissue strength



Tendons + Ligaments + Cartilage + Skin



Joint stability & tissue integrity

Collagen production generally **declines with age**, affecting connective-tissue maintenance.

Why do Athletes Use Collagen?

- ☐ Athletes involved in repetitive, high-impact or high-load activities can experience considerable stress on:
 - Tendons
 - Ligaments
 - Cartilage
 - Joints
 - Other soft tissues
- ☐ Hence, collagen supplementation is being explored for:

Joint health	Pain management	Injury rehabilitation	Injury prevention
May support maintenance of connective tissues and cartilage.	Some evidence suggests potential benefits in reducing exercise-related joint discomfort.	It may support connective-tissue recovery when combined with appropriate rehabilitation.	Maintaining tissue robustness may potentially reduce vulnerability to overuse injuries.

Which Athletes May Use It?

Its use particularly among athletes involved in sports imposing substantial mechanical loads, including:

- **Rowing**
- **Swimming**
- **Athletics**
- Particularly **triple jump**
- Other high-performance sports during injury rehabilitation

Athletes may consume collagen as **peptides or powder**.

The "Golden Window" ★

- ❑ Sports scientists suggest that collagen supplementation may be most useful when taken approximately:
 - ❑ 45–60 minutes before training or rehabilitation
 - The rationale relates to the availability of **amino acids in the bloodstream** around the time tissues are subjected to mechanical loading.
 - ❑ Vitamin C
 - Collagen supplementation is often recommended alongside **vitamin C**, which is important for normal collagen synthesis.

Collagen + Vitamin C
↓
Amino acids available
↓
Training / rehabilitation stimulus
↓
Potential connective-tissue support

✂ Important: Timing and benefits should not be interpreted as universally established; research on optimal dosing and timing is still developing.

Why are Some Tissues Difficult to Heal?

Certain structures such as:

- Tendons
- Ligaments
- Meniscus
- Labrum

can be **relatively avascular**, meaning they have limited blood supply.

Consequence

Limited blood supply
↓
Reduced delivery of nutrients/oxygen
↓
Potentially slower healing

This partly explains interest in nutritional strategies that may support connective-tissue rehabilitation.

Limitations of Collagen Supplementation

✗ Not a "miracle supplement"

Collagen cannot replace:

- Balanced nutrition
- Adequate protein intake
- Strength and conditioning
- Physiotherapy
- Medical treatment
- Proper recovery and sleep

Sports scientists caution against assuming that supplementation alone can transform sporting performance.

"Food First" Approach

- ✓ High-performance centres increasingly emphasise obtaining nutrients primarily through a **balanced diet**, using supplements selectively where appropriate.

UPSC Science Perspective

Collagen vs Muscle Protein

A useful conceptual distinction:

Collagen → connective tissues

Muscle proteins → muscle structure and function

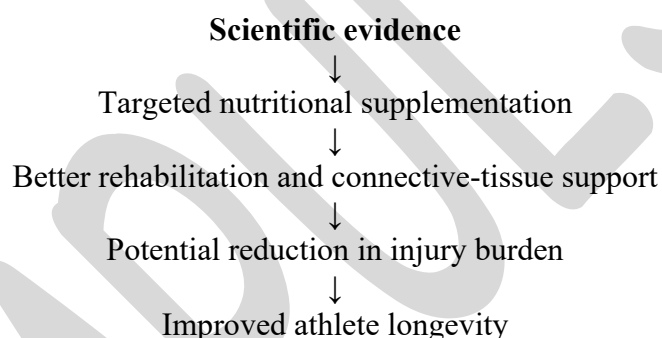
Therefore, collagen supplementation should not automatically be considered equivalent to a general **muscle-building protein supplement**.

Prelims Pointers ★★ ★

- Collagen is a **protein**, not a carbohydrate or lipid.
- It is a major structural component of **connective tissue**.
- Important in **skin, cartilage, tendons and ligaments**.
- Collagen production generally decreases with **age**.
- Some tendons/ligaments and cartilage structures have relatively limited vascularity.
- **Vitamin C** is important for collagen synthesis.
- Collagen supplements are commonly consumed as **peptides or powders**.
- Evidence regarding optimal supplementation, dosage and timing for athletic performance is **still developing**.

Mains Significance

Public health + sports science



However:

Evidence-based supplementation + food-first nutrition + training + rehabilitation

should form the integrated approach rather than dependence on a single supplement.

Probable Mains Question

Q. “Collagen supplementation is gaining prominence in sports science, particularly in injury rehabilitation.” Explain its biological relevance and examine the limitations of relying on supplements for athletic performance. (250 words)

Conclusion

Collagen's structural role in **connective tissues** makes it biologically relevant to athletes exposed to repetitive mechanical stress. Nevertheless, its benefits should be viewed as **supportive and evidence-dependent**, rather than as a shortcut to sporting success.

19.09.2026

US Sanctions Policy, Russian Oil & India's Energy Security

Brief

- The **Lindsey O. Graham Sanctioning Russia and Iran Act, 2026**, signed by U.S. President Donald Trump, authorises the U.S. President to impose **tariffs of up to 100%** on countries continuing to purchase Russian oil and gas.
- The legislation has major implications for **India's energy security, India-US relations and strategic autonomy**.

1 Why is India Vulnerable?

India's oil dependence

- India imports **over 88% of its crude-oil requirement**.
- Russia has emerged as a major crude supplier following the **2022 Russia-Ukraine war**.
- In August 2026, Russian crude reportedly constituted about **45% of India's total oil imports**.
- Before the West Asian crisis, a substantial share of India's crude imports came through the **Strait of Hormuz**.

Changing energy geography

West Asian disruption



Reduced Gulf oil flows + higher freight risks



India increases purchases from **Russia, Africa, Americas**



Russian crude becomes an important **energy-security hedge**

2 Why Russian Oil Matters to India?

Russian oil discounts after 2022

- Competitive procurement
- Lower import costs
- Greater supplier diversification
- Reduced dependence on West Asian suppliers

Therefore:

- ✓ **Russian crude is not merely a commercial choice; it has acquired strategic significance for India's energy security.**

Replacing Russian supplies immediately could increase:

- crude prices,
- freight and insurance costs,
- refinery input costs,
- inflationary pressures,
- India's import bill and current-account pressures.

3 What does the Graham Act do?

Sanctions mechanism

Countries continue buying Russian oil/gas



US President gets authority



Up to 100% tariffs on their exports to the US



Economic pressure on Russian energy buyers



Indirect pressure on Russia's oil revenues

Strategic objective

The legislation seeks to:

- reduce Russia's energy revenues;
- increase economic pressure over the Ukraine conflict;
- encourage negotiations/peace efforts.

However, its effect on third countries such as India creates a **secondary-sanctions/geoeconomic pressure** problem.

4 Why is the policy controversial?

A. Impact on third countries

- ✓ India did not create the Russia–Ukraine conflict, yet could face economic costs for maintaining its energy supplies.

B. Energy-security dilemma

Sanction Russian oil

- Lower Russian supply to global market
- Global oil supply tightens
- Prices rise
- Import-dependent countries face higher costs

Thus, sanctions can potentially **increase the price of the commodity they seek to constrain.**

C. West Asian crisis

- ✓ The disruption of oil flows through the **Strait of Hormuz** makes replacement of Russian crude particularly difficult.

5 The Nuclear-Energy Paradox

A major highlighted issue in the article is the treatment of **Russian low-enriched uranium (LEU)**.

The legislation exempts certain **US imports of Russian LEU.**

Why?

The US nuclear power sector remains substantially dependent on imported enrichment services/materials.

Therefore:

US energy requirements

- Dependence on Russian nuclear fuel
- Exemption

while:

India's energy requirements

- Dependence on Russian crude
- Potential tariff exposure

This illustrates the tension between **sanctions policy and national energy-security interests.**

6 CAATSA vs Graham Act

Feature	CAATSA	Graham Act 2026
Full form	Countering America's Adversaries Through Sanctions Act	Lindsey O. Graham Sanctioning Russia and Iran Act
Year	2017	2026
Primary focus	Russia, Iran, North Korea	Russia and Iran
Instrument	Sanctions	Sanctions + tariff authority
India relevance	S-400 purchase	Russian oil imports
Indian response	Diplomatic engagement	Likely pursuit of waivers/exemptions
Core issue	Strategic defence autonomy	Energy security

CAATSA precedent

➔ India's purchase of the **S-400 missile system from Russia** generated CAATSA-related concerns, but India avoided US sanctions through diplomatic engagement.

7 India's Strategic-Autonomy Challenge

India seeks to maintain:

Strategic autonomy



Independent foreign-policy choices



Diversified defence + energy partnerships



Avoid excessive dependence on any single power

India's balancing strategy

 Russia

→ Energy + defence

 USA

→ Technology + investment + defence + trade

 Europe

→ Trade + technology + energy diversification

 Global South
→ Multilateral cooperation

Thus, India faces the challenge of **maintaining relations with the US without sacrificing strategic autonomy or energy security**.

8 Wider Geoeconomic Implications

Sanctions → Fragmentation of global economy

US sanctions

- Secondary pressure on buyers
- Trade diversion
- Alternative payment mechanisms
- Supply-chain restructuring
- Greater use of non-dollar transactions
- Potential fragmentation of global markets

Possible consequences

- Higher energy-price volatility
- Greater geopolitical risk premium
- Pressure on emerging-market currencies
- Changes in global trade routes
- Expansion of alternative energy suppliers
- Increased importance of strategic petroleum reserves

FLOWCHART: INDIA'S ENERGY-SECURITY DILEMMA





Inflation + current-account pressure



Impact on economic growth

Therefore → Energy diversification becomes strategically important.



PRELIMS POINTERS

1. Strait of Hormuz

- Strategic chokepoint connecting the **Persian Gulf with the Gulf of Oman/Arabian Sea**.
- Major route for global oil and gas shipments.

2. CAATSA

- US law enacted in **2017**.
- Targets major defence/energy transactions involving Russia, Iran and North Korea.

3. Secondary sanctions

- Restrictions imposed on **third-country entities** for transactions with a sanctioned country/entity.

4. Strategic autonomy

- Does **not** mean neutrality or equidistance from all powers.
- Implies maintaining independent decision-making and policy flexibility.

5. LEU

- **Low-Enriched Uranium** generally contains a lower concentration of U-235 than highly enriched uranium.
- Commercial nuclear reactors generally use LEU fuel.



MAINS ANALYSIS

Significance for India

Energy security

→ Reliable and diversified crude supplies

Economic security

→ Containing import-cost and inflation risks

Strategic autonomy

→ Independent foreign-policy choices

India-US relations

→ Risk of friction in trade and energy policy

Global order

→ Growing use of economic interdependence as a geopolitical instrument

Key Challenges for India

- Excessive dependence on imported crude
- Concentration of supplies from particular regions
- Exposure to sanctions and secondary sanctions
- Strait-of-Hormuz vulnerability
- Shipping and insurance risks
- Balancing Russia–US relations
- Managing domestic fuel-price inflation

WAY FORWARD

India should pursue a multi-layered energy-security strategy:

1. Supplier diversification

→ Russia + Middle East + Africa + Americas

2. Strategic Petroleum Reserves

→ Expand storage capacity and improve replenishment mechanisms

3. Domestic production

→ Increase exploration and enhanced recovery

4. Renewable transition

→ Solar + wind + green hydrogen + storage

5. Nuclear energy

→ Diversify uranium sources and strengthen domestic nuclear-fuel capabilities

6. Diplomatic engagement

→ Seek sanctions waivers while maintaining dialogue with Washington

7. Maritime security

→ Protect critical sea lanes and strengthen alternative supply routes.

One-line takeaway

- ✓ India's challenge is not choosing between Russia and the US, but building sufficient economic and energy resilience to retain strategic autonomy amid intensifying geoeconomic competition.

UPSC Mains Question

Q. “The growing use of sanctions and tariffs as instruments of geopolitical coercion poses a challenge to India’s energy security and strategic autonomy.” Discuss. (250 words)

● India's oil imports from Russia this year

Month	Oil imports from Russia (MN BPD)	Total oil imports (MN BPD)	Share of Russian oil (%)
January	1.21	5.19	23.3
February	1.08	5.25	20.6
March	2.08	4.44	46.8
April	1.72	4.56	37.7
May	2.08	4.92	42.3
June	2.71	5.06	53.6
July	2.82	5.04	56
August	2.08	4.62	45

SOURCE: KPLER

India's First Mainstream PHEV

Core Issue

- India's EV ecosystem includes multiple electrification technologies: **BEVs, HEVs, PHEVs and FCEVs**.
- **PHEV (Plug-in Hybrid Electric Vehicle)** combines an **Internal Combustion Engine (ICE)** with an **electric motor and rechargeable battery**.
- The article identifies the **Hector Tomahawk PHEV** as India's first mainstream plug-in hybrid SUV.

EV Technology Spectrum

Type	Key Feature	Battery Charging
BEV	Only electric motor + battery	External charging required
HEV	ICE + electric propulsion	Engine + regenerative braking
PHEV	ICE + electric propulsion + larger battery	External charging + regenerative braking/engine
FCEV	Hydrogen fuel cell generates electricity	Hydrogen refuelling

Why PHEVs Matter

- **Larger battery** than conventional HEVs → greater electric-only driving range.
- Can be **plugged into an external power source**, unlike conventional HEVs.

- Combines:
 - **ICE:** longer-distance/range capability.
 - **Electric propulsion:** cleaner operation and potentially lower running costs.
- Can help address **range anxiety**, a major concern associated with BEVs.
- Seen as a potential **transition technology from hybrids to BEVs**.

HEV vs PHEV – Prelims Focus

HEV:

ICE → powers drivetrain → battery charged through **engine operation + regenerative braking** → **no external charging provision**.

PHEV:

ICE + electric motor → **larger rechargeable battery** → **external charging possible** → greater electric-only operation.

Claims

- **Electric-only range:** >115 km
- **Combined fuel efficiency:** >40 km/l
- **Total claimed range:** >1,100 km with full fuel tank + fully charged battery.



Mind Map

Electrified Vehicles

BEV → battery + motor

HEV → ICE + motor → no plug-in

PHEV → ICE + motor + larger battery → **plug-in**

FCEV → hydrogen fuel cell → electricity



Prelims Trap

- ✓ **PHEV ≠ BEV:** A PHEV retains an **ICE**.
- ✓ **PHEV ≠ HEV:** A PHEV has **external charging capability** and a larger battery.

One-line takeaway: PHEVs bridge the gap between conventional hybrids and fully battery-electric vehicles by combining external charging and electric driving with the range flexibility of an ICE.

• EV FAMILY: BEVS, HEVS & PHEVS

CONVENTIONAL HYBRID

electric vehicles (HEVs) combine a conventional ICE system with an electric propulsion system to produce a hybrid drivetrain that substantially lowers fossil fuel usage.

THE PHEVs, or plug-in hybrid electric vehicles also have a hybrid drivetrain that uses a combination of the ICE and electric power for motive power, but is backed by rechargeable batteries, quite like the HEVs.

THE BIG DIFFERENCE is that a PHEV can be plugged into a power source, which offers an external option to charge the battery that is not available on an HEV.



22.09.2026

How SC has strengthened safeguards around re-arrest

Under Article 22, a person must be informed about grounds of arrest. The SC ruling means that arrests flouting this right are invalid in law

Strict guidelines

The court laid down strict guidelines for re-arresting a person if they were earlier released for not being provided grounds of arrest.

In such cases, the bench said, the authorities should provide the accused with written grounds of arrest, seek magistrate's nod, and transfer the probe to a different officer.

● Written grounds for arrest: SC's evolving jurisprudence

● **Article 22** is a fundamental right under the Constitution that provides for an accused to be produced before a magistrate within 24 hours of arrest, to get legal representation — and to be informed about the grounds of arrest.

● **The question** of whether an accused must be given a written copy of the grounds of arrest first arose in 'Pankaj Bansal v Union of India' (2023), where the court held a written copy must be furnished "as a matter of course and without exception".

● **That position** was diluted in 'Ram Kishor Arora v Directorate of Enforcement', which held that 'Pankaj Bansal' would apply only prospectively.

● **The court** in 'Prabir Purkayastha v State (NCT of Delhi)' in 2024 reaffirmed that an arrested person must be provided the grounds of arrest in writing at the earliest.

● **The Supreme Court** finally settled the position in 2025, in 'Mihir Rajesh Shah v State of Maharashtra', holding that grounds of arrest must be communicated in writing "in the language he/she understands", and that non-compliance would render "the arrest and subsequent remand ... illegal".

● **It allowed** grounds to be conveyed orally in exceptional cases, provided a written copy followed within a reasonable time, at least two hours before the accused was produced for remand.



Supreme Court on Re-arrest & Article 22

Brief

- The Supreme Court, while dealing with the re-arrest of an accused who had earlier been released because the **grounds of arrest were not communicated**, laid down stringent safeguards.
- The Court held that such release is **not release on bail**, but release from **illegal and unconstitutional detention**.

Article 22(1): Constitutional Safeguard

Article 22(1) provides protection to an arrested person by requiring that they:

- Be **informed of the grounds of arrest**.
- Have the grounds communicated in a manner/language they **understand**.

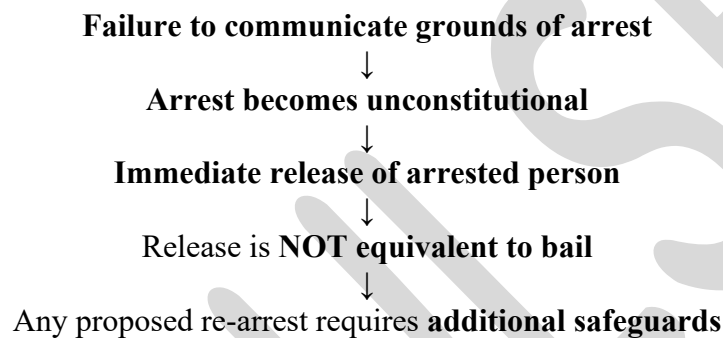
- Have access to **legal representation**.

The Court emphasised that these safeguards are **fundamental constitutional requirements**, not merely technical or procedural formalities.

Key Principle

- ✓ **Gravity of the offence cannot justify violation of Article 22 safeguards.**
- ✓ The protection applies across the spectrum of offences, including offences under the **Bharatiya Nyaya Sanhita (BNS)** and **special enactments**.

What happens when Article 22 is violated?



Why is the distinction important?

- **Bail:** A legally valid arrest has taken place, but the accused is released subject to conditions.
- **Unconstitutional detention:** The original **deprivation of liberty** itself was illegal.

Therefore, the State cannot treat such release simply as cancellation/revocation of bail and proceed to re-arrest the person through the same authority.

Supreme Court Guidelines on Re-arrest

Where an accused has been released because the original arrest violated Article 22:

1. Written grounds of arrest

The accused must subsequently be provided the **written grounds of arrest**.

2. Application before Magistrate

Police must approach the Magistrate with an application explaining:

- Why re-arrest is necessary; and
- Why the grounds of arrest were not furnished during the original arrest.

3. Superior officer's endorsement

The application must carry the endorsement of the **immediate superior authority** to prevent arbitrary action and ensure accountability.

4. Different investigating officer

The investigation must be assigned to **another officer**, rather than leaving the matter with the officer who committed the constitutional violation.

5. Departmental inquiry

A **departmental inquiry** must be initiated regarding the earlier arrest.

An adverse finding may result in **departmental action and an entry in the officer's service record**.

6. Magistrate's independent satisfaction

Re-arrest cannot be left to the discretion of the same executive authority.

The Magistrate must independently determine whether:

- The failure to furnish grounds initially occurred for **bona fide reasons**; and
- Re-arrest is genuinely necessary.

The Court directed that such application should be decided **within one week**.

Evolution of Supreme Court Jurisprudence

<i>Case</i>	<i>Significance</i>
Pankaj Bansal v. Union of India (2023)	Written grounds of arrest required in PMLA cases.
Ram Kishor Arora v. Directorate of Enforcement (2023)	Subsequently modified/diluted aspects concerning communication of grounds.
Prabir Purkayastha v. State (NCT of Delhi) (2024)	Reaffirmed written communication of grounds of arrest.
Mihir Rajesh Shah v. State of Maharashtra (2025)	Held that written grounds must be furnished across offences/statutes, in a language understood by the arrestee.
Jaskaran Jeet Singh Deol v. State of Punjab (Present ruling)	Established strict safeguards governing re-arrest after unconstitutional release .

UPSC Prelims Mind Map

ARTICLE 22(1)

- Grounds of arrest
- Written communication
- Language understood by arrestee
- Constitutional, not merely procedural
- Applies irrespective of gravity/type of offence
- Violation → unconstitutional arrest/detention
- Immediate release
- **Not bail**
- Re-arrest → Magistrate's scrutiny
- Superior officer's endorsement
- Different investigating officer
- Departmental inquiry
- Possible compensation

UPSC Mains Significance

The judgment strengthens the constitutional principle of **personal liberty** by placing procedural checks on the State's power of arrest. It reinforces that **constitutional safeguards cannot be sacrificed in the name of investigative convenience or seriousness of allegations**. The direction to provide compensation for violations also strengthens **State accountability**.

One-line takeaway

"An unconstitutional arrest cannot be papered over by a fresh arrest; deprivation of liberty must remain subject to the safeguards mandated by Article 22."

CCTV at Medical Stores: **Prescription-Drug Control vs Privacy**

Brief

- The **Union Health Ministry** has proposed **mandatory CCTV surveillance at medical stores** to curb the unauthorised sale and abuse of prescription medicines. The draft notification proposes retaining CCTV recordings for **three months**.
- The proposal particularly focuses on **Schedule H, H1 and X drugs** under the **Drugs and Cosmetics Rules, 1945**.

Why is the Government Proposing CCTV?

- To prevent **unauthorised access and sale** of prescription medicines.
- Particular concern is the **abuse of prescription drugs by children**.
- The proposal was first mooted in **2021**.
- CCTV footage would primarily help verify complaints regarding **sale of prescription medicines to minors without prescriptions**.
- The system is intended to supplement routine inspections, which may not detect every instance of illegal sale.
- The Drugs Consultative Committee has also decided to implement an **app-based system and CCTV surveillance**.

Understanding Drug Schedules

<i>Schedule</i>	<i>Key Feature</i>	<i>Examples/Category</i>
Schedule H	Sold only against prescription of a registered medical practitioner	Many antibiotics, steroids
Schedule H1	Prescription drugs with additional record-keeping requirements	Certain antibiotics, anti-TB medicines
Schedule X	More tightly controlled prescription medicines with additional requirements	Some psychotropic medicines

Prelims Trap

- ✓ **H, H1 and X are not identical categories.**
- ✓ Schedule H1 and X carry **additional controls/requirements** beyond ordinary Schedule H medicines.

Drug Abuse among Children

- ❑ According to the **AIIMS study (2019)**:
 - **Opioid use**: ~1.8% of children.
 - **Cannabis use**: ~1.9%.
 - **Alcohol use**: ~1.3%.
 - **Inhalant use**: ~1.17%.
- ❑ Among an estimated **2.3 crore opioid users** in India:
 - About **25 lakh** were dependent on pharmaceutical opioids.
 - About **63 lakh** were dependent on heroin.
- ❑ **Significance**: Pharmaceutical opioids can contribute to prescription-drug misuse and addiction.

Concerns Raised by Chemists

The **All India Organisation of Chemists and Druggists (AIOCD)** has raised concerns:

1. 💰 Financial burden
 - Installation could cost smaller pharmacies substantially.
 - The article cites an estimated cost of **nearly ₹1 lakh** for a store.
2. ⚡ Infrastructure challenges
 - **Power failures** and poor connectivity, particularly in rural areas, could hinder implementation.
3. 🗝️ Patient privacy
 - Continuous surveillance could raise concerns regarding **privacy and sensitive medical information**.

🧠 Mains Perspective

Government objective: Prevent misuse of prescription drugs + strengthen regulatory enforcement.



Potential benefits: Evidence generation + deterrence + accountability.



Concerns: Cost burden + rural infrastructure + data security + patient privacy.



Way Forward: Proportionate surveillance, secure data storage, clear access protocols, infrastructure support for small pharmacies and safeguards against misuse of CCTV data.

🎯 One-line takeaway

- The proposed CCTV regime seeks to strengthen prescription-drug control, but its success will depend on balancing public-health objectives with pharmacy affordability, infrastructure constraints and patient privacy.

• GOT A PRESCRIPTION?

SCHEDULE H: Medicines that can't be sold without a prescription from a registered medical practitioner. Examples include many antibiotics and steroids.

SCHEDULE H1: Subject to additional record-keeping requirements. Examples include certain antibiotics and anti-TB medicines.

SCHEDULE X: More tightly controlled category, with additional requirements. It includes some psychotropic medicines.

Article 371 A to J, and what K can do for Ladakh

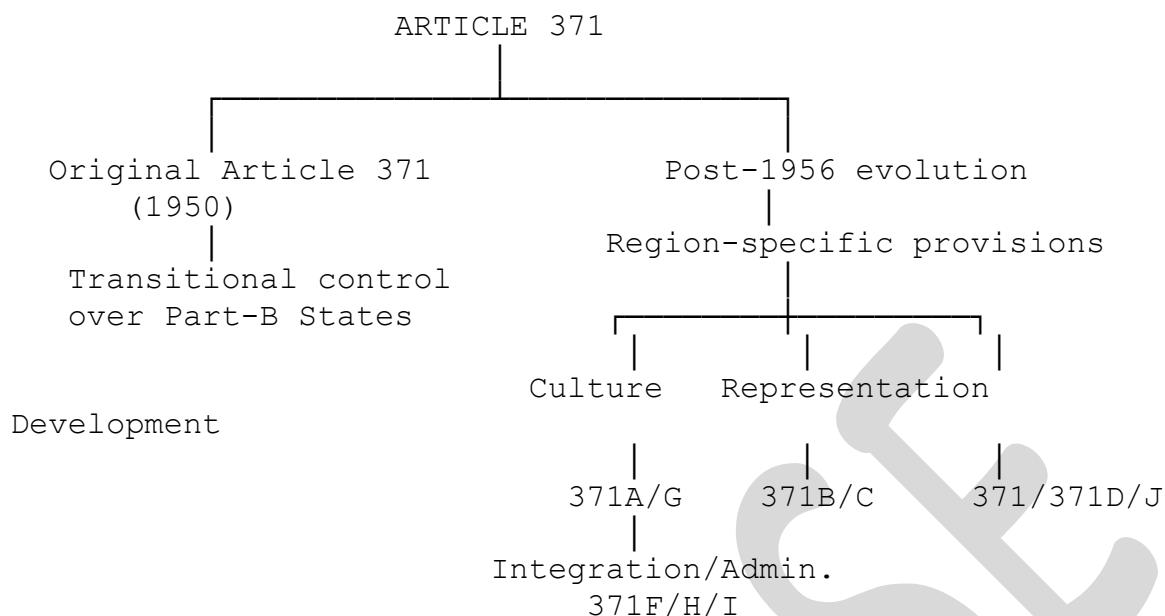
Why does Article 371 exist in so many different forms? What role has it played in the governance of different states over the years?

Core Idea

- The **Article 371 series** represents India's model of **asymmetric federalism**.
- Different regions have received **different constitutional arrangements** based on their:
 - **History**
 - **Tribal/cultural identity**
 - **Regional inequalities**
 - **Political agreements**
 - **Administrative requirements**
- Thus, **Indian federalism does not always require uniformity to achieve national unity**.



Mind Map: Evolution of Article 371



Original Article 371

- In **1950**, Article 371 was primarily a **transitional provision for Part B States**, many of which were former princely states.
- The **States Reorganisation Act, 1956** and **7th Constitutional Amendment** abolished the Part A, B and C classification.
- The original provision disappeared.
- The present Article 371 subsequently acquired a different role concerning **Maharashtra and Gujarat**.

Article 371A–J: Quick Revision

<i>Article</i>	<i>Region</i>	<i>Major Feature</i>
371	Maharashtra & Gujarat	Regional development & equitable allocation
371A	Nagaland	Customary law + land/resources
371B	Assam	Tribal representation/committee
371C	Manipur	Hill Areas Committee
371D	AP/Telangana	Education + employment + regional equality
371E	Andhra Pradesh	Central University
371F	Sikkim	Integration & special arrangements
371G	Mizoram	Customary law + land
371H	Arunachal Pradesh	Governor + law & order
371I	Goa	Minimum 30-member Assembly
371J	Karnataka	Kalyana Karnataka development



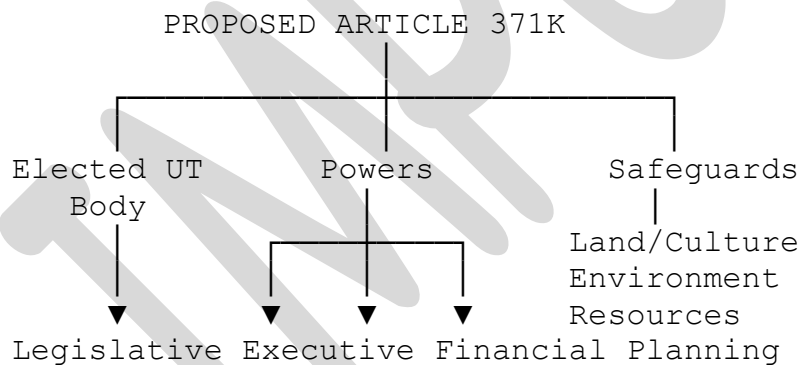
A-G → Culture & Land
B-C → Tribal/Hill Representation
D-J → Development, Integration & Administration

Why Article 371K for Ladakh?

Background

- Ladakh became a **Union Territory without a legislature in 2019**.
- Local political groups have sought stronger constitutional safeguards for:
 - **Land**
 - **Employment**
 - **Culture & language**
 - **Environment**
 - **Natural resources**
 - **Democratic representation**

Proposed model



The emerging proposal envisages a **directly elected UT-level body** with:

- **Legislative powers**
- **Executive powers**
- **Financial/budgetary powers**
- **Planning powers**
- **Authority concerning land, culture, language, forests, environment and natural resources**

How 371K Could Differ

From Article 371A & 371G

Ladakh's demand resembles their emphasis on:
Land + Culture + Customary/Local interests

From Article 371J

It resembles the focus on:
Development + Employment + Regional opportunities

From Article 371C

It shares the objective of:
Greater institutional representation for geographically distinct communities

But Ladakh is different

Unlike most Article 371 arrangements, Ladakh is a **UT without a legislature**.
Therefore, 371K could potentially create a **new model of elected UT-level governance**.

Key Constitutional Question

The effectiveness of 371K would depend on **how much real power is constitutionally protected**.

Limited protection

Elected body → limited subjects → substantial Union/Administrator control

Strong protection

Elected body → Land + Resources + Recruitment + Finance + Planning + Administration

Major issue

Law & Order

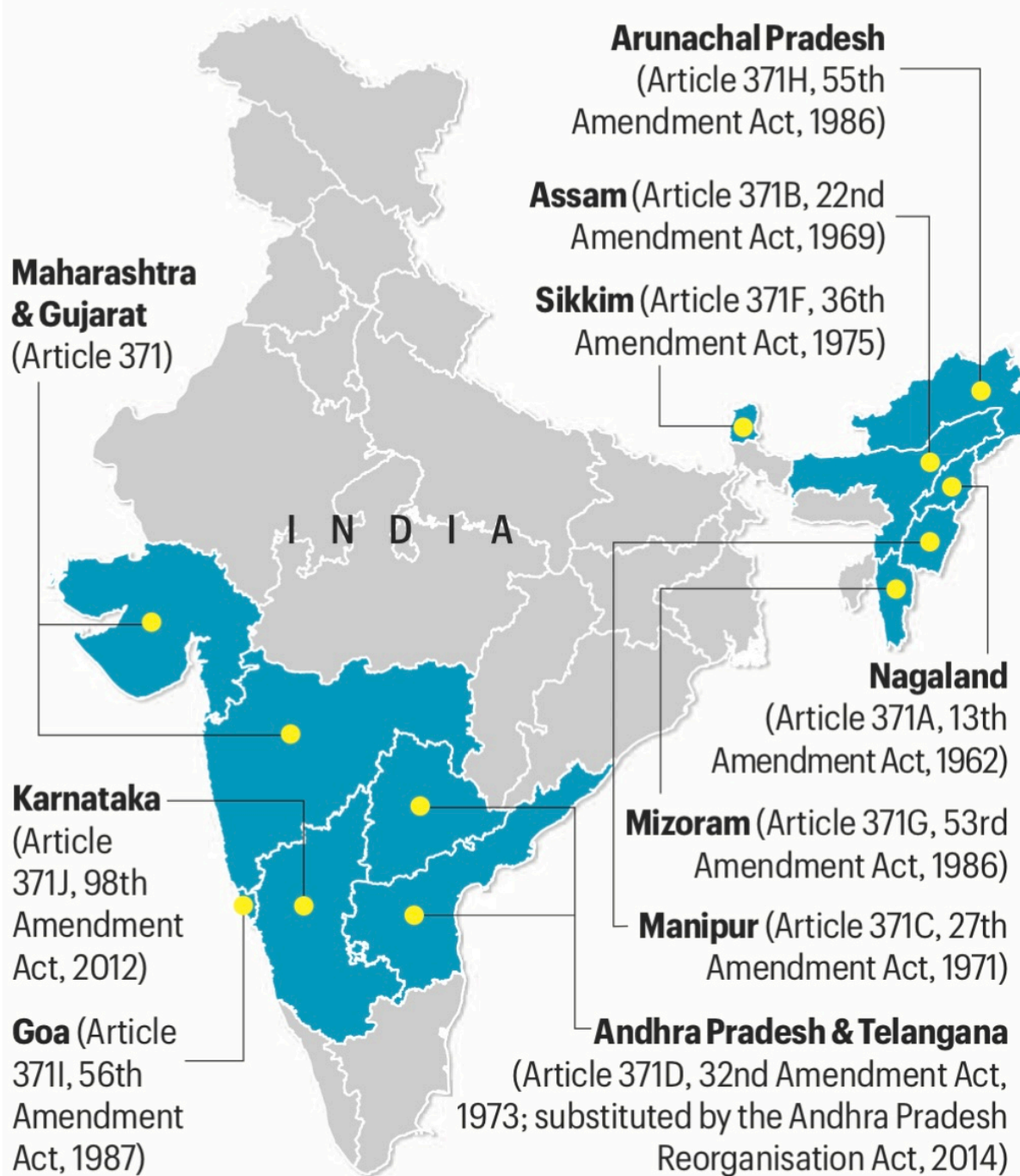
- **Article 371H:** Governor has special responsibility for law and order in Arunachal Pradesh.
- **Ladakh demand:** greater democratic control over administration and potentially law and order.

UPSC Takeaway

➔ **Article 371 illustrates India's “unity through accommodation” approach.**

- ➔ Its provisions have served **different objectives**—from cultural protection in Nagaland and Mizoram to regional development in Maharashtra, Gujarat and Karnataka, political representation in Assam and Manipur, and integration in Sikkim.
- ➔ Article 371K, if enacted, could extend this asymmetric constitutional approach to a Union Territory and give Ladakh a directly elected institution with meaningful legislative, executive and financial powers. Its actual significance, however, would depend on the **subjects transferred, financial autonomy, administrative control and constitutional protection** provided to the elected body.

• SPECIAL PROVISIONS FOR STATES



Greenland Standoff Ends — But With Costs to NATO

Brief

- A new understanding between the **United States, Denmark and Greenland** has reportedly eased the dispute over Greenland's strategic status and the future of the US military presence there.
- The episode is significant not only for **Arctic geopolitics**, but also for **NATO cohesion, European security and transatlantic trust**.

1 Greenland: Basic Context

Greenland

- **World's largest island.**
- Geographically part of **North America**.
- Politically an **autonomous territory within the Kingdom of Denmark**.
- Possesses extensive self-government, while **Denmark** retains responsibility for areas such as **foreign affairs and defence**.
- Located strategically between **North America and Europe** and close to the **Arctic routes**.

Strategic significance



2 Historical US Military Presence

Greenland Defence Agreement — 1951

The agreement was concluded during the **early Cold War**, when the Soviet Union was viewed as a major strategic threat.

It provided the US with broad rights relating to:

- construction and operation of military facilities;
- military access to Greenland;
- use of airspace and waters for defence purposes.

Key point

Therefore, the recent understanding does **not necessarily create an entirely new US strategic position** in Greenland.

Rather, it may:

- **expand** US military presence;
- **strengthen** Washington's influence over certain security-related activities;
- provide **greater control** over some third-party military activity and sensitive investments.

Why Does Greenland Matter to the US?

Strategic geography

Greenland lies between:

North America ↔ Arctic ↔ North Atlantic ↔ Europe

Its location is important for:

- missile-warning systems;
- space and satellite surveillance;
- air and maritime monitoring;
- Arctic military operations;
- protection of North Atlantic sea lanes;
- monitoring Russian military activity.

Arctic geopolitics

Climate change



Declining sea ice / changing accessibility



Greater possibility of Arctic shipping and resource activity



Growing strategic competition



US–Russia–China interests intersect

Why Was the Standoff Significant?

The dispute went beyond territorial politics.

It involved three overlapping issues:

Sovereignty

→ Greenland's political status

Security

→ US/NATO military interests

Geoeconomics

→ Arctic resources, infrastructure and investment

The reported agreement therefore attempts to balance:

🇺🇸 US strategic interests



🇩🇰 Danish sovereignty and NATO commitments



🇬🇷 Greenlandic autonomy and interests

5 The NATO Dimension

The most important implication may be **trust among NATO allies**.

NATO is based on:

- collective defence;
- political consultation;
- mutual trust;
- interoperability;
- shared security interests.

A dispute in which one NATO member pressures another member's territory can create a difficult contradiction:

How can an alliance built on collective security maintain cohesion when members themselves become sources of strategic uncertainty for one another?

Possible consequences

US pressure on Denmark/Greenland



Perception of unreliable alliance behaviour



Reduced trust



European concern about strategic dependence



Greater defence diversification



Potential weakening of NATO's political cohesion

6 The “Diversification” Effect

Strategic diversification

If an ally becomes perceived as unpredictable:

Dependence



Risk



Diversification

This could encourage European states to:

- strengthen independent defence capabilities;
- diversify security partnerships;
- deepen cooperation with the EU;
- increase defence spending;
- reduce excessive dependence on a single external security provider.

📌 This does **not automatically mean a weakening or collapse of NATO**. Rather, it could affect the **degree of political trust and strategic dependence within the alliance**.

🧠 FLOWCHART: GREENLAND → NATO

Greenland's strategic location



US seeks stronger Arctic security position



Pressure regarding Greenland's status



Denmark + Greenland resist external control



NATO allies become concerned



Negotiated settlement



Immediate crisis reduced



But questions over **alliance trust and European strategic autonomy**

Why Greenland Matters Beyond the Arctic

Emerging Arctic order

The Arctic is increasingly important because of:

- climate change;
- new shipping possibilities;
- oil, gas and mineral resources;
- critical minerals;
- military positioning;
- satellite and communications infrastructure;
- competition involving **Russia, the US, Canada and China.**

Security dilemma

Greater military presence by one power

- Other powers perceive increased threat
- They strengthen their own military presence
- Security competition intensifies.

PRELIMS POINTERS

Greenland

- World's largest island.
- Autonomous territory within the **Kingdom of Denmark.**
- Geographically part of North America.
- Located in the Arctic region.

Greenland Defence Agreement

- **1951.**
- Cold War context.
- Provided the US extensive military access and basing rights.

NATO

- Founded in **1949.**
- Collective-defence principle is contained in **Article 5.**
- Denmark and the United States are NATO members.

Arctic Council

- Established in **1996.**
- Major forum for Arctic cooperation.
- Its members include the **eight Arctic states:**
Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the US.

 **Exam trap:** Greenland is not an independent sovereign state and therefore does not independently constitute a NATO member.

MAINS ANALYSIS

Significance of the episode

1. Arctic geopolitics

Greenland's location gives it disproportionate strategic importance.

2. NATO cohesion

The episode raises questions about political trust within a military alliance.

3. European strategic autonomy

European countries may seek greater capacity to manage security risks independently.

4. Sovereignty vs security

It highlights the tension between the strategic requirements of powerful states and the territorial autonomy of smaller political entities.

5. Changing Arctic order

Climate change is transforming the Arctic from a peripheral region into an increasingly important arena of geopolitical competition.

WAY FORWARD

For NATO:

- Strengthen internal consultation.
- Respect sovereignty and democratic processes.
- Improve burden-sharing and strategic coordination.

For Europe:

- Develop greater defence capabilities.
- Diversify strategic dependencies.
- Strengthen Arctic expertise and infrastructure.

For Greenland/Denmark:

- Preserve Greenland's autonomy while addressing legitimate security concerns.
- Ensure transparency regarding military facilities and foreign investments.

For the wider Arctic:

- Maintain mechanisms for scientific, environmental and maritime cooperation despite geopolitical tensions.

One-line takeaway

The Greenland settlement may ease an immediate sovereignty dispute, but its larger significance lies in how Arctic competition, alliance politics and European strategic autonomy are reshaping the transatlantic security order.

Q. “The Greenland episode demonstrates that NATO's future challenge may lie not only in external threats but also in maintaining trust and strategic cohesion among its members.” Discuss in the context of emerging Arctic geopolitics. (250 words)

Energy Crisis Shifts from Oilfields to Refineries

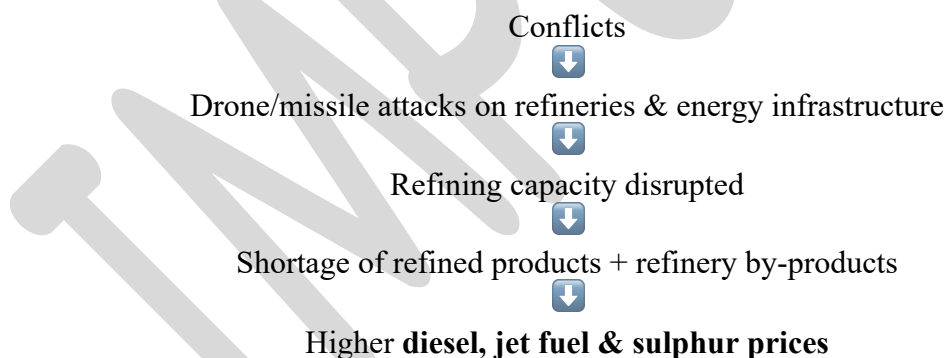
Brief

- The ongoing conflicts in **West Asia and Russia-Ukraine** have increasingly disrupted **refineries and energy infrastructure**, creating shortages not merely of crude oil but of **refined products such as diesel, jet fuel and sulphur.**

1 Changing Nature of the Energy Crisis

Earlier energy crises were primarily associated with **crude-oil supply disruptions**.

Current crisis:

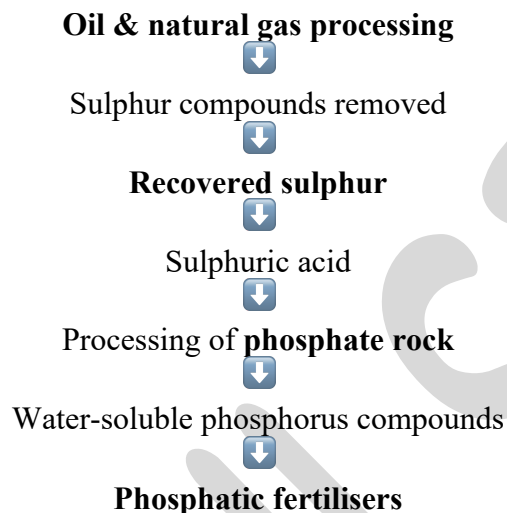


- Brent crude: around **\$102/barrel**, substantially above the previous year.
- US diesel prices: **>\$6.5/gallon**, a record according to the article.
- **Sulphur:** from around **\$200/tonne** in normal conditions to **>\$1,000/tonne**.

2 WHY IS SULPHUR SO IMPORTANT?

🔗 Energy → Sulphur → Fertiliser → Food Security

Sulphur is recovered during **oil refining and natural-gas processing**, primarily because sulphur compounds must be removed to produce cleaner, low-emission fuels.



Major fertilisers affected

- **Single Super Phosphate (SSP)**
- **Di-ammonium Phosphate (DAP)**
- Other **phosphorus-containing complex fertilisers**

📌 Core UPSC linkage:

A disruption in energy infrastructure can therefore become a fertiliser-security and ultimately food-security problem.

3 Why India Is Particularly Exposed

- ☐ India has managed to secure adequate supplies of **urea and LNG**, supporting domestic **nitrogen**-fertiliser production.
- ☐ However, **phosphatic and complex fertilisers** face greater vulnerability because their production depends on:

Phosphate rock + Sulphuric acid

□ Therefore:

Global refinery disruption



Lower sulphur availability



Sulphur prices rise



Sulphuric-acid costs rise



DAP/SSP/complex fertiliser production affected



Higher fertiliser import/production costs



Potential pressure on agricultural input costs

4 India's Refining Advantage

India possesses substantial refining capacity.

2025–26:

- Refinery output: **284.9 MT**
- Domestic petroleum consumption: **243.2 MT**
- Installed refining capacity: **258.1 MT**

Thus:

High refining capacity + output > domestic consumption



India can maintain domestic availability of petrol/diesel and potentially benefit from **high refining margins (crack spreads)**.

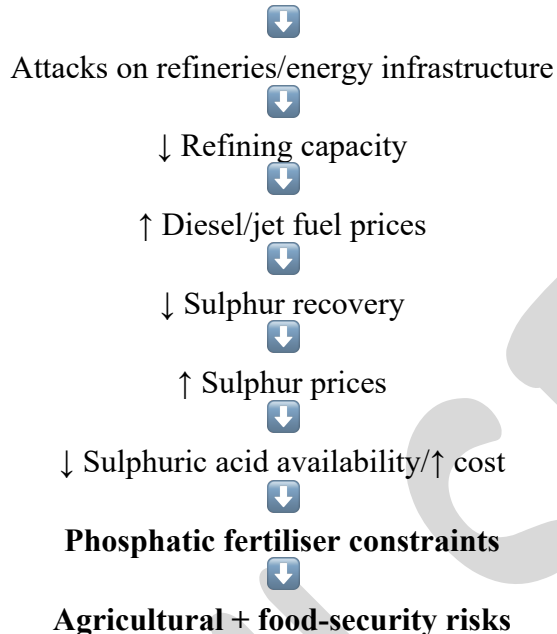
⚠ But...

Refining capacity ≠ complete energy security

India may have adequate refinery capacity but remain vulnerable to shortages of **specific refinery inputs/by-products**, particularly sulphur.

FLOWCHART

West Asian + Russia–Ukraine conflicts



PRELIMS POINTERS

- **Sulphur** is an important by-product of oil refining and natural-gas processing.
- **Sulphuric acid** is crucial for processing phosphate rock.
- **DAP and SSP** are major phosphatic fertilisers.
- **Crack spread** = difference between the price of crude oil and prices of refined petroleum products.
- India is both a major **refiner and exporter of petroleum products**.
- **Urea** → **nitrogen fertiliser**; **DAP/SSP** → **phosphorus-containing fertilisers**.

WAY FORWARD

- Diversify sulphur and fertiliser supply sources.
- Strengthen **strategic reserves of critical industrial inputs**.
- Expand domestic production of fertiliser intermediates.
- Promote efficient fertiliser use and nutrient-balanced agriculture.
- Maintain adequate petroleum and fertiliser buffer stocks.
- Accelerate renewable energy and reduce structural dependence on imported hydrocarbons.

 **Takeaway :** The new energy vulnerability is moving downstream: disruption of refineries can create a sulphur shortage, turning an energy crisis into a fertiliser and food-security challenge.

 Mains Question

Q. “The current energy crisis demonstrates that energy security is increasingly intertwined with fertiliser and food security.” Examine the role of sulphur in this emerging linkage, with reference to India. (250 words)

23.09.2026

Houthis: From Local Movement to Red Sea Power

Brief

- The **Houthi movement (Ansar Allah)** has evolved from a local Zaidi Shia revivalist movement into a powerful armed and governing authority controlling strategically important areas of **Yemen**, including positions around the **Red Sea and Bab el-Mandeb Strait**.
- Its growing maritime capabilities have implications for **Saudi oil exports, global shipping and regional security**.

1 Origins: From Religious Revival to Insurgency

- Houthis emerged in the **1990s** among Yemen's **Zaidi Shia** community.
- **Hussein Badreddin al-Houthi** established *al-Shabab al-Mu'min* (“Believing Youth”) in **1992**.
- The movement opposed perceived marginalisation of Zaidis and increasing **Saudi-funded Sunni religious influence**.
- It later criticised President **Ali Abdullah Saleh** and opposed the **2003 US invasion of Iraq**.

Militarisation

2004: Yemeni government attempted to arrest Hussein al-Houthi



His death in fighting



Movement militarised



Six Saada Wars (2004–2010)



Houthi consolidation

- Saudi Arabia directly intervened in the conflict in **2009** after Houthi fighters crossed into Saudi territory.

2 From Militia to Parallel State

Over more than a decade of territorial control, the Houthis developed institutions resembling a **parallel state**.

Features

- Control over taxation and revenue collection.
- Influence over energy distribution.
- Management of fuel supplies.
- Alleged diversion of shipments into black markets.
- Development of a **war economy**.

According to estimates, the Houthi administration generates roughly **\$2.5 billion annually** through parallel taxation and collection mechanisms.

3 Regionalisation & Iran

The Houthis are commonly described as part of Iran's “**Axis of Resistance**”, but their relationship with Tehran is more complex than a simple proxy relationship.

Iran provides:

- Weapons/support
- Technical assistance
- Strategic backing

Houthis provide Iran:

- Strategic presence near **Bab el-Mandeb**
- Leverage over maritime trade
- Pressure on Saudi Arabia's southern flank

 **Important nuance:** Despite Iranian assistance, the Houthis retain substantial **operational autonomy** and make decisions based partly on domestic political interests.

4 **Bab el-Mandeb: Strategic Significance**

Houthi territorial expansion



Control/influence around Red Sea coast



Greater ability to threaten maritime traffic



Higher risks to shipping + insurance



Potential disruption of global trade and energy flows

Why important?

- ✓ **Bab el-Mandeb** connects the **Red Sea with the Gulf of Aden and Indian Ocean** and is a critical maritime chokepoint linking Europe–Asia trade routes.

PRELIMS POINTERS

- Houthis = Ansar Allah
- Strongly associated with Yemen's **Zaidi Shia** community.
- **Capital:** Sana'a has been under Houthi control since 2014.
- **Bab el-Mandeb:** connects Red Sea and Gulf of Aden.
- **Mayun Island (Perim):** strategically located near Bab el-Mandeb.
- **Mokha:** important Red Sea port on Yemen's western coast.
- Houthi ideology incorporates **anti-imperialist rhetoric** and influences associated with Iran's revolutionary politics.

MAINS SIGNIFICANCE

For West Asia

- Complicates Saudi security.
- Strengthens Iran's regional leverage.
- Complicates US–Iran diplomacy.

For Global Trade

- Threatens shipping through the **Red Sea–Suez route**.
- Can raise freight, insurance and energy costs.
- Encourages ships to take longer alternative routes.

For India

Red Sea insecurity

→ Longer shipping routes

- Higher freight/insurance costs
- Energy-import vulnerability
- Pressure on exports/imports
- Greater requirement for maritime-security cooperation.

🎯 Mains Question

Q. “The transformation of the Houthis from a local insurgent movement into a regional maritime power illustrates the changing nature of asymmetric warfare in West Asia.” Discuss. (250 words)

🔑 Takeaway: The Houthis' importance derives not only from territorial control in Yemen but from their ability to project asymmetric power around the strategically vital Bab el-Mandeb maritime chokepoint.

● **WORDLY WISE**

The mind is not a vessel to be filled, but
a fire to be kindled.
— *Plutarch*

24.09.2026

Election Commission Appointments: 2023 Law, Anoop Baranwal & Collegium Debate

Brief

- A two-judge Supreme Court Bench delivered a **split verdict** on challenges to the **Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023**.
- The judges agreed that the matter should be placed before the **Chief Justice of India (CJI)** for consideration of a **Constitution Bench**, but differed on whether such a larger Bench was legally necessary.
- The case has revived the debate over **electoral independence, executive influence, separation of powers and the Collegium system**.

1 Constitutional Background – Article 324

Article 324(2)

- ✓ The **President appoints the CEC and Election Commissioners**, *subject to any law made by Parliament*.
- ✓ For nearly **73 years**, Parliament did not enact a comprehensive law governing this appointment process.
- ✓ Consequently, appointments operated largely through the **executive framework**.

2 Anoop Baranwal Case, 2023

The turning point

- ✓ In **Anoop Baranwal v. Union of India (2023)**, a Constitution Bench noted the absence of parliamentary legislation despite Article 324 contemplating such a law.
- ✓ Until Parliament enacted legislation, the Court prescribed:
 - **Prime Minister**
 - **Leader of Opposition, Lok Sabha**
 - **Chief Justice of India**



Selection Committee for CEC/ECs

Constitutional principle

The Court emphasised the need to protect the **independence of the Election Commission from exclusive executive control**.

3 The 2023 Act

Parliament subsequently enacted the **2023 Act**, replacing the CJI with:
A Union Cabinet Minister nominated by the Prime Minister

Present selection committee

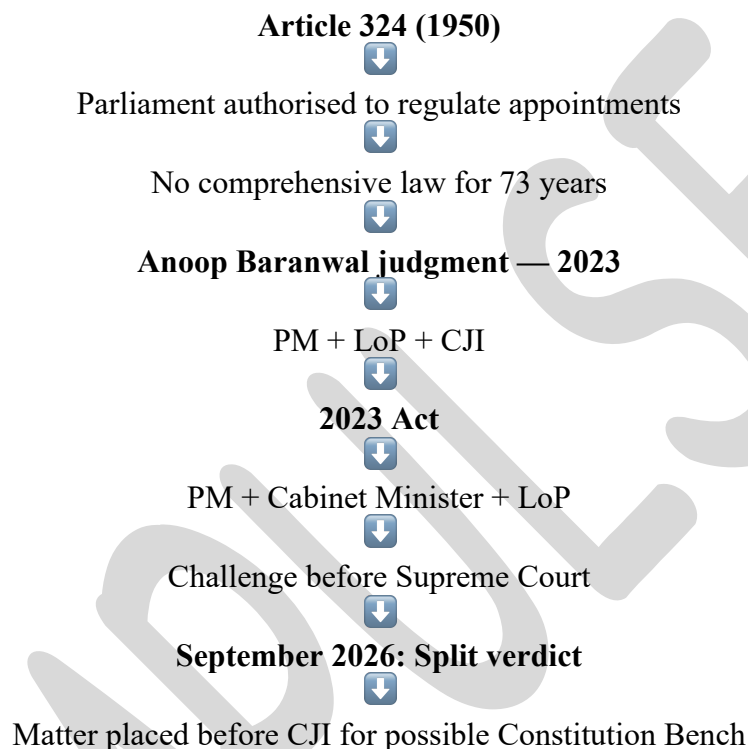
Prime Minister
+
Union Cabinet Minister nominated by PM
+
Leader of Opposition

Result

- ➡ 2 members represent the government/executive
- ➡ 1 member represents the Opposition

This structure is at the heart of the constitutional challenge.

🧠 EVOLUTION FLOWCHART



4 The Split Verdict

👤 Justice Dipankar Datta

- ✓ Justice Datta held that the existing Bench could decide the challenge because the constitutional principle had already been settled in **Anoop Baranwal**.
- ✓ The question, according to him, was essentially:

Does the 2023 Act comply with the established principle of electoral independence?

He therefore did not consider a Constitution Bench essential merely to apply an existing constitutional principle.

Concerns regarding 2023 Act

- ✓ He questioned whether a Cabinet Minister nominated by the PM could realistically act independently of the government.
- ✓ He also emphasised the “**perception test**”:
- ✓ An Election Commission must not only be independent but must **appear to be independent**.



Justice Satish Chandra Sharma

- ✓ Justice Sharma favoured reference to a **Constitution Bench**.
- ✓ *His reasoning:*
 - The Court was examining the **constitutional validity of the 2023 Act for the first time**.
 - No authoritative judgment had yet determined whether Parliament could constitutionally replace the CJI with a Union Minister.
 - Whether the absence of a **neutral selector** is constitutionally permissible is a significant and unsettled question.
- ✓ Therefore, **Article 145(3)** was relevant.

5 What is a Constitution Bench?

Article 145(3)

A Constitution Bench must comprise **at least five judges** when a case involves a **substantial question of law regarding interpretation of the Constitution**.

Important distinction

Constitution involved ≠ automatically Constitution Bench

A larger Bench becomes necessary when an **unsettled substantial constitutional question** requires authoritative determination.

Why larger Benches matter?

Larger Bench judgment



Greater precedential authority



Helps settle constitutional interpretation



Provides institutional certainty

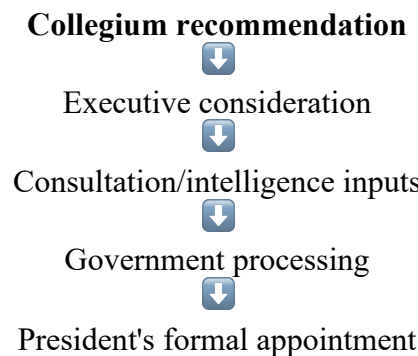
6 Collegium Debate

The Centre reportedly compared the ECI appointment mechanism with the **judicial Collegium**, arguing that the Collegium itself does not contain an “outsider”.

Justice Datta rejected this comparison.

His reasoning

Judicial appointments involve the executive at several stages:



Therefore, the description “**judges appointing judges**” does not capture the entire constitutional process.

He also criticised what he described as **selective clearance of Collegium recommendations** by the executive.

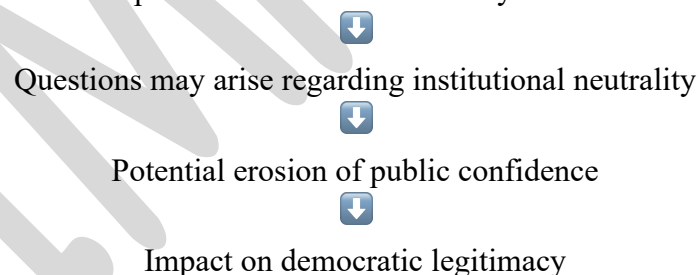
7 Why ECI Independence Matters

The Election Commission conducts and supervises elections.

Its credibility depends on:

Actual independence
not
Perceived independence

If the selection mechanism is perceived to be dominated by the incumbent government:



However: executive participation itself does not automatically establish constitutional invalidity; the key issue is whether the overall arrangement satisfies constitutional requirements.

PRELIMS POINTERS

Article 324

- Establishes the **Election Commission of India**.
- Vests it with superintendence, direction and control of elections.
- President appoints CEC and ECs subject to parliamentary law.

Article 145(3)

- Constitution Bench of **minimum five judges**.
- Deals with substantial constitutional questions.

Article 124

- Appointment of Supreme Court judges.

Article 217

- Appointment of High Court judges.

Collegium

- **Not expressly mentioned in the Constitution.**
- Evolved through judicial decisions.

Anoop Baranwal Case

- **2023 Constitution Bench judgment.**
- Interim appointment mechanism: **PM + LoP + CJI** until Parliament enacted a law.

CONSTITUTIONAL ISSUES INVOLVED

<i>Issue</i>	<i>Core question</i>
Electoral independence	Can ECI remain independent if government has numerical dominance?
Separation of powers	How should executive and institutional autonomy be balanced?
Parliamentary power	How far can Parliament determine the appointment mechanism?
Judicial review	Can the Court invalidate the 2023 framework?
Neutrality	Is a neutral member constitutionally necessary?
Perception of independence	Is institutional credibility itself constitutionally relevant?

BIGGER UPSC ISSUE

Independence vs Accountability

Too much executive control

→ Risk of institutional dependence

Too little external accountability

→ Risk of opacity/self-selection

Constitutional objective

Independent institutions

+

Transparent procedures

+

Checks and balances

+

Accountability



Constitutional governance

MAINS QUESTION

Q. “An independent Election Commission is essential not merely for conducting elections but for maintaining public confidence in representative democracy.” Discuss in the context of the 2023 law governing appointments to the Election Commission. (250 words)

One-line takeaway

The controversy is ultimately about designing an appointment mechanism that balances parliamentary authority, executive accountability and institutional independence while ensuring that the Election Commission is both independent and perceived to be independent.

• THE 2023 LAW AND THE CHALLENGE IN TOP COURT: A TIMELINE

1950: Article 324(2) of the Constitution is framed. It provides that the Chief Election Commissioner and other Election Commissioners are appointed by the President, subject to any law Parliament may make on the matter.



1950-2023: For 73 years, Parliament does not enact any new law on this. Appointments to the Election Commission (EC) are made under the executive framework.

2015: A writ petition is filed under Article 32, challenging the absence of a law governing appointments to the EC.

2018: A two-judge bench refers the matter to a Constitution Bench.

SEPTEMBER 2026:

A two-judge SC bench delivers a split verdict on petitions challenging the 2023 Act. While Justice Dipankar Datta holds that the challenge could be decided on existing Constitutional principles, Justice Satish Chandra Sharma says it raises substantial and novel Constitutional questions. Both judges issued a joint order referring the matter to the CJI to constitute a Constitution Bench to avoid further procedural delay.

DECEMBER 2023:

Parliament passes the Chief Election Commissioner and other Election Commissioners Act, 2023. The law replaces the Chief Justice of India with a Union Cabinet Minister nominated by the Prime Minister, resulting in a panel with a 2:1 executive majority.

MARCH 2023: Eight years on, a five-judge Constitution Bench delivers its judgment in the 'Anoop Baranwal' case, holding that appointments to the EC should be made by a committee comprising the Prime Minister, the Leader of the Opposition and the Chief Justice of India until Parliament enacts a law.

Tulu Gets Additional Official Language Status in Karnataka

Brief

- The Karnataka Cabinet has accorded **Tulu the status of second additional administrative language** in Dakshina Kannada and Udupi districts.
- An annual allocation of **₹82 lakh** has been announced for translation, training and language-promotion activities.

1. About Tulu

- **Linguistic family:** Dravidian language, alongside Tamil, Telugu, Kannada and Malayalam.
- **Geographical distribution:** Primarily spoken in coastal Karnataka and parts of northern Kerala.
- **Speakers:** Approximately 1.8–2 million native speakers.
- **Cultural significance:** Associated with rich oral traditions, folklore, Yakshagana and Bhoota Kola.
- **Script:** Historically had its own script; Kannada script is widely used today. The Tulu script has also witnessed revival efforts.

2. What Does Official Status Mean?

- Government offices in Dakshina Kannada and Udupi can use Tulu for administrative communication alongside Kannada.
- It can facilitate:

- Translation of government documents.
- Public-service communication in Tulu.
- Language training and cultural promotion.
- Greater visibility in public signage and educational initiatives.

Important: This is a regional administrative recognition, not inclusion in the Eighth Schedule of the Constitution.

3. **Background of the Demand**

- Tulu-speaking communities have sought official recognition for decades.
- Tulu was not granted a separate linguistic state during the **States Reorganisation of 1956**.
- Supporters argue that its sizeable speaker population and cultural heritage warrant greater institutional recognition.

4. **Challenges**

- Limited familiarity with the traditional Tulu script.
- Absence of widespread Tulu teaching in schools and colleges.
- Need for trained translators, standardised terminology and administrative resources.
- Migration of speakers to metropolitan cities may weaken intergenerational transmission.

5. **Significance**

- **Linguistic diversity:** Recognises India's multilingual heritage.
- **Cultural preservation:** Supports indigenous traditions and oral literature.
- **Inclusive governance:** Improves access to local administration.
- **Social integration:** Strengthens linguistic identity and community participation.

Mind Map

Tulu recognition → Administrative access + Cultural preservation + Linguistic diversity + Inclusive governance.

Prelims Pointers

- Tulu belongs to the **Dravidian language family**.
- It is not currently included in the **Eighth Schedule**.
- The Eighth Schedule contains **22 languages**.

25.09.2026

Women's Safety: **From "Protection" to Equal Access to Public Spaces**

Brief

- A recent alleged sexual assault of a **17-year-old girl in Southeast Delhi** has renewed concerns over women's safety in public spaces.
- Student protests have highlighted persistent issues such as **poor lighting, inadequate policing and unsafe pedestrian routes.**

1. Current Concerns

- Delhi recorded **13,396 crimes against women in 2024**, the highest among metropolitan cities.
- It recorded **1,058 rape cases**, also the highest among the 19 metros tracked.
- These figures highlight the gap between **legal safeguards and effective implementation.**

2. From Laws to Implementation

India has strengthened its legal framework after the **2012 Delhi gang rape case**, including:

- Criminal-law reforms to address sexual violence.
- Creation of the **Nirbhaya Fund** for projects aimed at women's safety.
- Greater emphasis on emergency response, surveillance and safer public infrastructure.

Core problem: Under-utilisation of funds, weak maintenance, fragmented implementation and inadequate accountability can reduce the impact of otherwise robust policies.

3. Infrastructure as Women's Safety

Women's safety is closely linked with **urban planning and public infrastructure.**

Safe City Approach

- Functional streetlights
- Walkable & well-maintained footpaths
- Reliable late-evening public transport
- Functional CCTV & emergency systems
- Police presence at vulnerable locations

- Regular safety audits
- Quick emergency response

4. Protection vs Empowerment

A **paternalistic model** may focus primarily on restricting women's movement in the name of protection.

A rights-based approach should instead enable women to:

- **Work late**
- Travel independently
- Use public transport
- Meet friends and participate in social life
- Attend educational institutions
- Protest and participate in civic life
- Access public spaces without disproportionate restrictions

Thus, safety policy should **expand women's freedom rather than shrink their mobility**.

5. Role of Institutions & Society

- **Police:** Responsive, gender-sensitive and accountable policing.
- **Urban local bodies:** Lighting, roads, sanitation and maintenance.
- **Transport authorities:** Safe and dependable night transport.
- **Educational institutions:** Gender sensitisation and grievance mechanisms.
- **Society:** Challenge harmful notions of masculinity and victim-blaming.
- **Technology:** Emergency alerts, CCTV and integrated response systems.

Mind Map

Women's Safety

- Infrastructure + Policing + Transport + Technology
- Gender sensitisation + Institutional accountability
- Safe & equal access to public spaces

Way Forward

- Shift from “protect women by restricting mobility” → “create conditions where women can exercise equal freedom.”

Mains Question

Q. “Women's safety requires not merely stronger laws but safer public spaces and institutional accountability.” Discuss. (250 words)

Removal of the Chief Election Commissioner (CEC)

Brief

- The Opposition has again indicated plans to move a motion in Parliament seeking the removal of **Chief Election Commissioner Gyanesh Kumar**, amid allegations concerning the functioning of the Election Commission.
- An earlier removal notice in March 2026 had been signed by **130 Lok Sabha and 63 Rajya Sabha MPs** and was subsequently rejected by the presiding authorities.

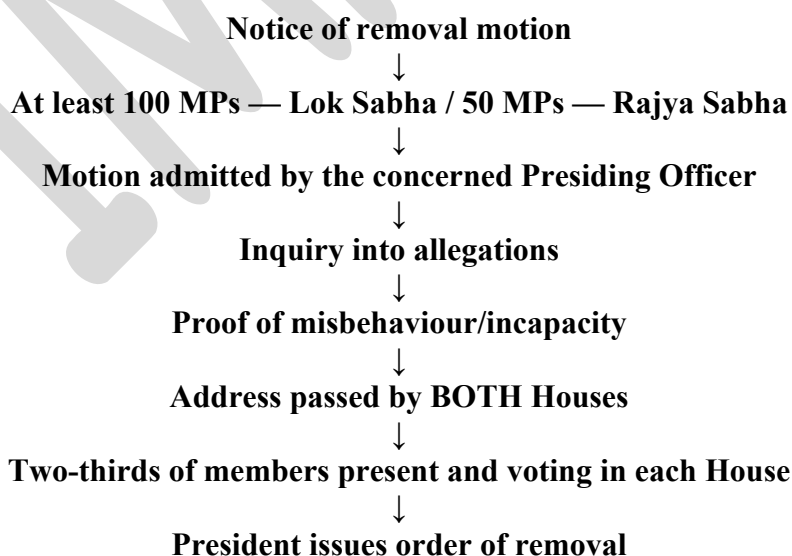
Constitutional Safeguard

- Article 324(5) provides that the **CEC can be removed only “in like manner and on the like grounds as a Judge of the Supreme Court.”** The 2023 CEC and Other Election Commissioners Act retains this protection.

Grounds for Removal

- Under the constitutional framework applicable to Supreme Court judges:
 - **Proved misbehaviour**
 - **Incapacity**
- This high threshold is intended to protect the **independence and impartiality of the Election Commission.**

Removal Process – Flowchart



The procedure broadly follows the framework used for removal of a **Supreme Court judge**, including the inquiry mechanism.

CEC ≠ Other Election Commissioners

<i>CEC</i>	<i>Other ECs</i>
Removal protection equivalent to SC Judge	Cannot be removed by the President except on the recommendation of the CEC
Constitutionally stronger security of tenure	Relatively weaker protection

Why Such a High Threshold?

- Prevents **political retaliation** against the electoral authority.
- Protects **electoral credibility and institutional autonomy**.
- Ensures removal is based on established constitutional grounds rather than ordinary political disagreement.

Prelims Pointers

- **Article 324:** Election Commission.
- **Article 324(5):** Removal protection of CEC.
- **Article 124(4):** Removal of Supreme Court judges.
- **CEC:** Removed through Parliament's address + Presidential order.
- **Other ECs:** President acts on CEC's recommendation.
- No CEC has been successfully removed/impeached so far.

Mains Angle

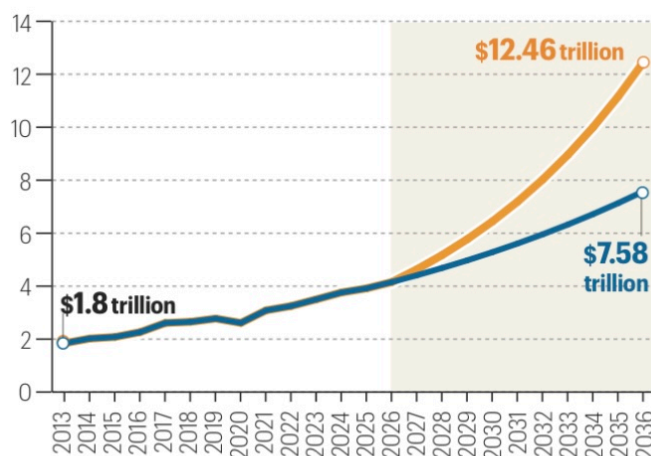
Independent appointment + security of tenure + transparent accountability must operate together to preserve the credibility of India's electoral democracy.

What would it take to triple the size of India's economy

The answer depends on the currency used for the calculation. Since the rupee weakens every year, achieving this aim in dollar terms is a challenge

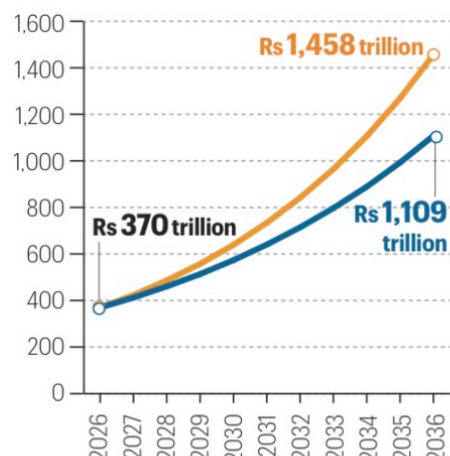
• Chart 1: Tripling GDP in \$ terms would mean doubling rate of annual economic growth

- Indian GDP (business as usual)*
- Indian GDP (if it wants to triple in \$ terms)**



• Chart 2: Difference between tripling in rupee and \$ terms

- India GDP needed for tripling in rupee terms
- India GDP needed for tripling in \$ terms



*COMPOUNDED ANNUAL GROWTH RATE (CAGR) OF 6.2%, **CAGR OF 11.6%; NOTE: TRILLION IS LAKH CRORE; SOURCE: IMF

Assessing GDP

Typically, India's GDP is initially assessed in Indian rupee terms.

For international comparisons, GDPs of different countries are recalculated in US dollar terms.

What Would It Take to Triple the Size of India's Economy?

Brief

- Jamie Dimon has suggested that **India's economy could become three times its current size within a decade.**
- The feasibility of this projection depends crucially on whether GDP is measured in **rupee or US-dollar terms.**

1. GDP: Rupee vs Dollar Measurement

- India's GDP is initially measured in **nominal rupees**.
- For international comparison, it is converted into **US dollars using the exchange rate**.
- *Therefore:*
Dollar GDP growth $\approx$ Rupee GDP growth $\pm$ exchange-rate movement
- **Rupee depreciation** reduces India's GDP when expressed in dollars, even if domestic nominal GDP continues to grow rapidly.

2. What Does "Tripling" Require?

<i>Measure</i>	<i>Required CAGR (2026–36)</i>	<i>Context</i>
Nominal GDP in ₹	~11.6%	Higher than the ~10% CAGR since 2014
Nominal GDP in \$	~11.6%	Requires ~14.7% nominal ₹ growth if rupee depreciates
Past \$ GDP CAGR (2014–26)	~6.2%	Considerably below the required rate

According to the calculation:

- Current GDP $\approx$ **\$4.2 trillion**.
- At 6.2% dollar CAGR, it would reach only about **\$7.6 trillion by 2036**.
- Tripling to $\approx$ **\$12.5 trillion** requires about **11.6% annual dollar growth**.
- Assuming continued currency depreciation, this would require roughly **14.7% annual nominal GDP growth in rupees**.

3. Nominal vs Real GDP – Key Distinction

- The calculations concern **nominal GDP**, which incorporates:
 - Real output growth +
 - Domestic price changes.
- **Real GDP** removes the effect of inflation and better reflects changes in actual production.
- Hence, a high nominal GDP growth rate does **not automatically imply equivalent expansion in real economic capacity**.

4. Why Dollar-Denominated Tripling Is Difficult

Higher real growth + inflation → Higher nominal ₹ GDP



Rupee depreciation



Part of nominal expansion is offset in \$ terms



Higher growth required to triple dollar GDP

For international investors, dollar-denominated returns and the exchange rate are therefore important.

5. What Would Be Needed?

- Sustained **high productivity and real GDP growth**.
- Higher **investment and capital formation**.
- Manufacturing and export expansion.
- Greater labour-force participation and human-capital development.
- Infrastructure and logistics improvements.
- Stable macroeconomic conditions.
- Higher-value services and technology exports.
- A relatively stable/competitive exchange rate.

Prelims Pointers

- **Nominal GDP:** Current-price GDP.
- **Real GDP:** GDP adjusted for inflation.
- **CAGR:** Compound Annual Growth Rate.
- Currency depreciation can lower **dollar GDP** without necessarily reducing domestic nominal GDP.

Mains Question

Q. “For India, tripling GDP in dollar terms is substantially more challenging than tripling it in rupee terms.” Examine the role of growth, inflation and exchange-rate movements. (250 words)

26.09.2026

Trump–Xi Summit: **Managed Stability Amid US–China Rivalry**

Brief

- The latest **Donald Trump–Xi Jinping summit** appears to have focused more on **managing tensions** than resolving the structural disputes shaping US–China relations.

1. The “Three Ts” – Key Areas

① Trade

- The two sides agreed to extend the **Busan trade truce**.
- China’s suspension of restrictions on **rare-earth exports** remains a major bargaining instrument.
- US dependence on Chinese critical minerals contrasts with China’s interest in maintaining access to the US market.

② Technology & AI

- Washington and Beijing did not announce major new constraints on AI development.
- Xi emphasised **human control over AI**.
- Both countries increasingly view AI as a source of **economic, technological and strategic power**.

③ Taiwan

- China reiterated opposition to **Taiwanese independence** and urged Washington to respect the **One-China principle**.
- The US continues to maintain strategic ambiguity while providing defence support to Taiwan.

2. Why “Managed Stability”?

Mutual economic dependence

- China needs access to major export markets
- US needs Chinese critical minerals and manufacturing capacity
- Both seek to avoid uncontrolled escalation

Domestic pressures

- US: geopolitical commitments + approaching midterm elections

- China: economic slowdown + upcoming political priorities
- Incentive for temporary stabilisation rather than confrontation

Thus, the summit may represent a **modus vivendi** rather than a resolution of rivalry.

3. Limits of Personal Diplomacy

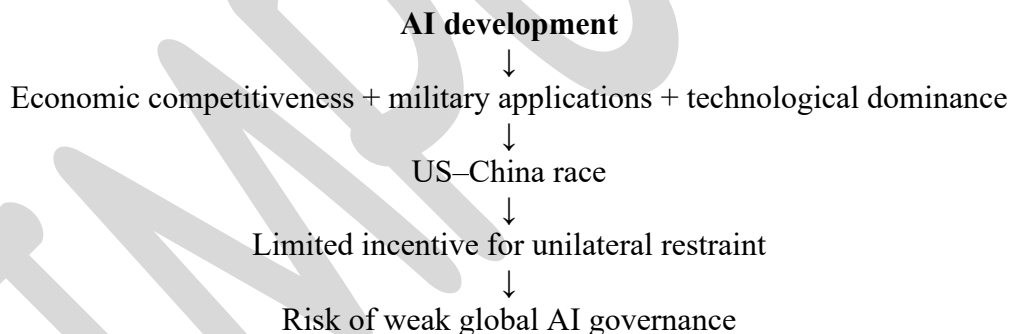
The highly personalised interaction between Trump and Xi may temporarily facilitate communication.

However, major structural disputes remain:

- Trade imbalance and tariffs
- Critical-mineral supply chains
- Semiconductor and technology restrictions
- Taiwan
- South China Sea
- AI and emerging technologies
- Strategic competition for global influence

Personal rapport ≠ institutional resolution.

4. AI: Emerging Strategic Fault Line



A US–China AI framework could potentially become a **de facto global rule-setting mechanism**, raising concerns for countries outside the two-power structure.

5. Implications for India

Challenges

- Risk of technological rules being shaped without Indian participation.
- Supply-chain disruptions involving semiconductors and critical minerals.
- Intensification of US–China strategic rivalry could constrain India's strategic choices.

Opportunities

- Diversification of global supply chains.
- Expansion of India's semiconductor and critical-mineral capabilities.
- Greater cooperation with partners on **AI safety, standards and governance**.
- Strengthening indigenous technological capacity.

Way Forward for India

Strategic autonomy + Indigenous capability + Diversified partnerships + Multilateral AI governance

Prelims Pointers

- **Rare earths:** Critical inputs for electronics, defence and clean-energy technologies.
- **Taiwan Strait:** Major strategic and commercial maritime route.
- **AI governance:** Involves safety, accountability, transparency and human oversight.

Mains Question

Q. “US-China managed stability may contain immediate tensions without resolving the structural causes of rivalry.” Discuss its implications for India and global governance. (250 words)

Yuan vs Dollar:

Why the Yuan Falls Short of Displacing the Dollar

Brief

- China's growing economic weight and increasing use of the **yuan (renminbi)** have renewed debate over whether it can challenge the **US dollar** as the world's dominant international currency.
- However, economic size alone is insufficient to create a global reserve currency.

1. Why the Dollar Dominates

The dollar enjoys an “**exorbitant privilege**” because of:

- Deep and liquid **US financial markets**.
- Strong global demand for **US Treasury securities**.
- Convertibility and widespread acceptance.
- Established legal and financial institutions.
- Network effects — the more people use the dollar, the more useful it becomes.
- Role in **trade invoicing, international payments, foreign-exchange reserves and global finance**.

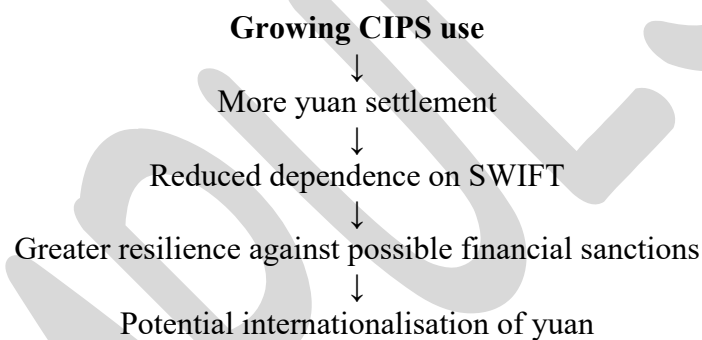
Trust → Dollar demand → US assets → Cheap global financing → Greater US financial power

2. The Yuan's Rise

- The yuan gained importance after the **Russia–Ukraine war**, as sanctions encouraged some countries to seek alternatives to dollar-based financial channels.
- Its share of **SWIFT payment volume** reportedly reached around **4.7% in July 2024**, making it the fourth-most-used currency at that point.
- By May 2026, its SWIFT share had fallen to about **2.75%**, placing it sixth.
- The dollar's share remains close to **50% of SWIFT payment volume**.

3. CIPS: Parallel Financial Infrastructure

China has developed the **Cross-Border Interbank Payment System (CIPS)** for yuan-denominated cross-border transactions.



However, CIPS expansion does not automatically make the yuan a global reserve currency.

4. Why Yuan Still Falls Short

Economic strength ≠ Currency dominance

Major constraints include:

- **Capital controls** and restrictions on capital movement.
- Limited full convertibility of the yuan.
- Concerns regarding **policy predictability and transparency**.
- Strong state influence over financial institutions and markets.
- Less-developed international safe-asset markets compared with US Treasuries.
- Lower global trust in China's institutional and legal framework.
- China's trade surplus creates demand for yuan, but reserve-currency status requires deep global financial-market demand as well.

5. Dollar vs Yuan – Structural Comparison

<i>Factor</i>	<i>Dollar</i>	<i>Yuan</i>
Global payments	Dominant	Limited but expanding
Reserve-currency role	Dominant	Much smaller
Financial-market depth	Very high	Developing
Capital mobility	High	More restricted
Safe assets	US Treasuries	Smaller pool
International trust	Strong but facing challenges	Constrained by institutional concerns

6. India's Perspective

India can benefit from **currency diversification** but should avoid replacing one dependency with another.

Way

Rupee internationalisation + diversified reserves + domestic financial depth + resilient payment infrastructure + strategic autonomy

Forward:

Prelims Pointers

- **SWIFT:** Global financial messaging network; it does not itself transfer money.
- **CIPS:** China's yuan-based cross-border payment system.
- **Reserve currency:** Currency widely held by central banks and used for international transactions.
- **Exorbitant privilege:** Benefits accruing to the issuer of a dominant international currency.

Mains Question

Q. “A global reserve currency requires institutional trust and financial depth in addition to economic power.” Examine the prospects of the yuan challenging the dollar. (250 words)

28.09.2026

UP Sugarcane Crisis: Red Rot & a New Disease-Resistant Variety

Brief

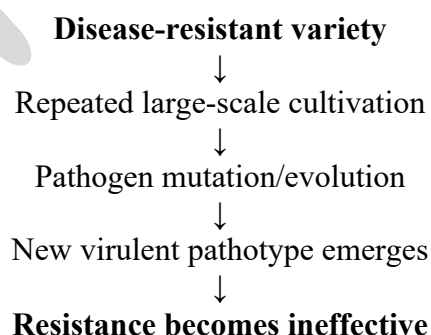
- **Uttar Pradesh**, India's leading sugarcane-producing state, has witnessed a decline in sugar output from **126.37 lakh tonnes (2019-20)** to **89.52 lakh tonnes (2025-26)**.
- The major concern is the spread of **red rot**, a fungal disease associated with extensive cultivation of the popular **Co-0238** variety.
- A potential replacement, **Co-20016 (Karan 20)**, developed by **ICAR–Sugarcane Breeding Institute (ICAR-SBI), Coimbatore**, has shown promising results.

What happened to Co-0238?

Co-0238 → High yield + High recovery → Large-scale monocropping → Pathogen evolution → Red rot → Yield losses

- Co-0238 was released in **2009** and played a major role in making UP the country's leading sugar producer.
- Initially showed moderate resistance to red-rot pathotypes **CF07** and **CF08**.
- Intensive **monoculture** created strong selection pressure on the pathogen.
- Emergence of the highly virulent **CF13** **pathotype** of *Colletotrichum falcatum* led to **breakdown of resistance**.
- **Waterlogging** further favours red-rot infection and movement of fungal spores.

Key Concept: Varietal Breakdown



Co-20016 (Karan 20): Potential Alternative

Developed by ICAR-SBI, Co-20016 has performed better than Co-0238 in multi-location trials.

<i>Parameter</i>	<i>Co-20016</i>	<i>Co-0238</i>
Average cane yield	144.6 t/ha	116.4 t/ha
Sucrose content*	18.7%	18.3%
Red-rot response	Resistant to CF13	Susceptible

*At 10-month cropping period.

Evaluation Process

ICAR/AICRP trials → Varietal Identification Committee → Central Varietal Release Committee → Official release → Commercial cultivation

- Three-year trials included **two plant-cane crops + one ratoon crop**.
- Trials were conducted in both **subtropical and tropical regions**.
- ISMA and ICAR-SBI have jointly evaluated improved varieties.
- **Co-21012** is another variety under evaluation.

UP Sugar Industry: Key Trend

Sugarcane crushed:
1,118.02 lakh tonnes (2019-20)
↓
878.12 lakh tonnes (2025-26)

Sugar production:
126.37 lakh tonnes
↓
89.52 lakh tonnes

Sugar recovery:
11.73% → 10.83%

 Thus, the problem is not merely sugar recovery; **declining cane availability/crushing is a major constraint**.

Why is this important for India?

1. Agricultural biodiversity

- Excessive dependence on one variety increases vulnerability to pests and diseases.
- Promotes **genetic diversification** and climate resilience.

2. Sugar industry

- Lower cane availability reduces mill utilisation and sugar production.
- A disease-resistant, high-yielding variety can improve **farm and mill productivity**.

3. Food–water–energy nexus

Sugarcane → Sugar + Ethanol + Bagasse + Molasses

Therefore, cane productivity affects:

Sugar security + Ethanol blending + Farmer income + Rural industry

4. Climate-resilient agriculture

- Disease incidence can be aggravated by **waterlogging, changing temperature and humidity**.
- Variety diversification must accompany **better drainage and crop management**.

WAY FORWARD

Monocropping

- Varietal diversification
- Disease surveillance
- Certified disease-free planting material
- Integrated disease management
- Drainage/water management
- Breeding for durable resistance
- Climate-resilient sugarcane

UPSC Prelims Pointers

- **Co-0238** → major high-yielding sugarcane variety; vulnerable to red rot.
- **Co-20016 / Karan 20** → ICAR-SBI variety showing resistance to **CF13**.
- **Red rot** → fungal disease caused by *Colletotrichum falcatum*.
- **Monoculture** → increases vulnerability to evolving pathogens.
- **Ratoon crop** → crop obtained from regrowth of sugarcane after harvesting the plant crop.
- **Sugar recovery** = sugar obtained as a percentage of cane processed.
- **ICAR-SBI** → Coimbatore; major sugarcane breeding institution.

- **AICRP** → All-India Coordinated Research Project framework for agricultural research.



Mind Map

UP Sugarcane Crisis

→ Cause

- Co-0238 monoculture
- Red rot
- CF13 pathotype
- Waterlogging

→ Impact

- ↓ Cane yield
- ↓ Cane crushing
- ↓ Sugar production
- Farmer & mill vulnerability

→ Solution

- Co-20016
- Varietal diversification
- Disease-resistant breeding
- Drainage
- Disease surveillance
- Integrated crop management



Mains Question

Q. “Excessive dependence on a single high-yielding crop variety can create systemic agricultural vulnerability.” Discuss with reference to red rot in Uttar Pradesh’s sugarcane sector. (250 words)

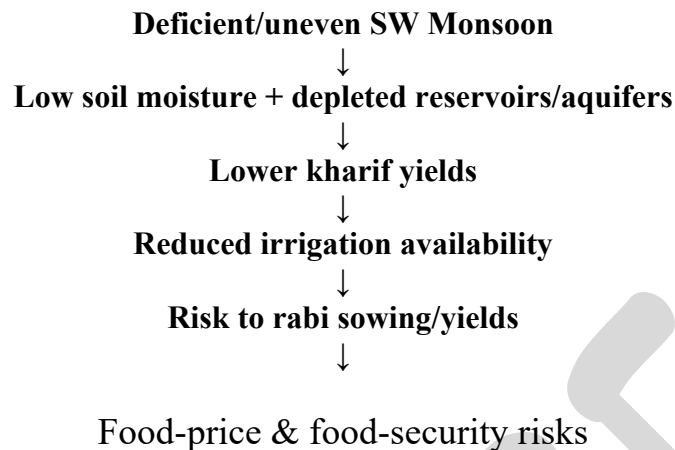
Monsoon Deficit, El Niño & Keeping Food Imports Open

Brief

- **Maharashtra** has declared drought in nearly three-fourths of its tehsils, with severe impacts reported in **Marathwada and Vidarbha**.
- India received **11.9% below-average rainfall** during the southwest monsoon up to September 27.
- **23 of 36 meteorological subdivisions** recorded deficits exceeding 10%.
- The uneven spatial and temporal distribution of rainfall raises concerns over both **kharif output and the forthcoming rabi crop**.



MONSOON → AGRICULTURE → FOOD SECURITY



Why is the rainfall distribution particularly important?

The issue is **not merely** the aggregate rainfall deficit.

Spatial concentration

- Some regions received relatively heavy rainfall, while **southern India, Marathwada, Vidarbha, Rajasthan, Saurashtra-Kutch** and parts of the **Northeast** faced significant deficits.

Temporal concentration

- Rainfall was particularly deficient during **June and August**.
- Excess rainfall in selected regions cannot fully compensate for deficits elsewhere because agriculture depends on **local soil moisture and water availability**.



Key UPSC concept:

Normal all-India rainfall ≠ normal agricultural conditions.



EL NIÑO & INDIAN MONSOON

El Niño

- Warming of the central/eastern tropical Pacific
- Changes atmospheric circulation
- Can weaken the Indian summer monsoon
- ↑ Probability of deficient rainfall
- ↓ Water availability
- Agricultural stress

Possible second-round effect

Weak monsoon

- Low reservoir recharge
- Reduced irrigation availability
- **Rabi vulnerability**

El Niño can also contribute to **warmer winter conditions**, potentially shortening the cool season and affecting temperature-sensitive crops.

⚠ **Important:** El Niño does **not mechanically** cause a drought every time. Indian rainfall is also influenced by the **Indian Ocean Dipole (IOD), Madden-Julian Oscillation, snow cover, regional circulation and other factors.**

KHARIF vs RABI RISK

<i>Factor</i>	<i>Kharif</i>	<i>Rabi</i>
Main dependence	Southwest monsoon	Soil moisture + irrigation
Immediate risk	Rainfall deficit	Water availability after monsoon
Key crops	Rice, maize, soybean, cotton, pulses	Wheat, gram, mustard, lentil
El Niño concern	Lower rainfall	Low reservoir/groundwater + warmer winter

Potential food-security chain

Poor monsoon

- Kharif production loss
- Water shortage
- Rabi production risk
- Lower market arrivals
- Food inflation
- Need for imports

POLICY RESPONSE

1. Drought Management Code

Maharashtra activated drought-management measures involving:

- Crop-loss assessment
- Relief measures

- Land-revenue concessions
- Agricultural-loan restructuring/pausing recovery

➡ Other affected States can undertake similar **state-specific drought relief**.

2. PM Fasal Bima Yojana

Provides crop insurance against specified crop losses.

Challenge:

The effectiveness of the scheme depends on **rapid assessment + timely indemnity payments**.

3. VB-GRAM G

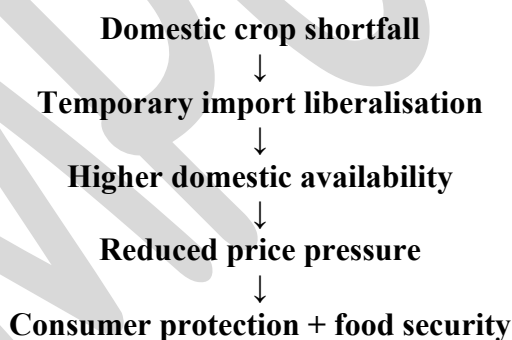
Rural employment/relief-oriented interventions can provide:

- Wage employment
- Rural income support
- Creation/maintenance of water-related assets

FOOD IMPORTS AS A BUFFER

When domestic production is threatened, **restricting imports can amplify food inflation**.

Import strategy



Extending duty-free access to pulses such as:

Yellow peas + Chana + Masoor, alongside already liberalised Arhar and Urad imports.

Edible-oil import duties were also reduced to improve domestic availability and moderate prices.

IMPORTS: THE POLICY DILEMMA

Consumers

Imports → ↑ supply → ↓ food inflation

Farmers

Excessive cheap imports → ↓ domestic prices → reduced farm incentives

Therefore:

Import liberalisation should be calibrated,
temporary and responsive to domestic production conditions.

Better approach

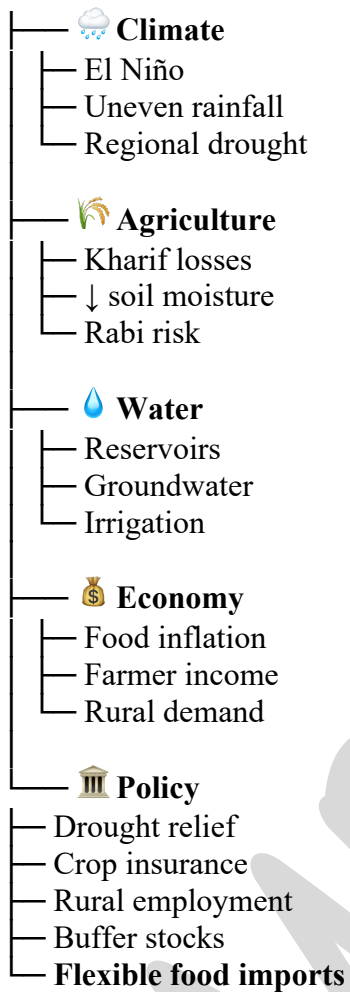
Open imports during supply shocks
+
Protect farmers through predictable trade policy
+
Avoid sudden export bans/import restrictions
+
Maintain adequate buffer stocks
+
Strengthen domestic productivity

PRELIMS POINTERS

- **El Niño:** warming of the central/eastern tropical Pacific Ocean.
- **Southwest Monsoon:** critical for India's agricultural water availability.
- **Meteorological subdivision:** rainfall assessment unit used by IMD.
- **Kharif:** largely monsoon-season crops.
- **Rabi:** mainly winter-season crops.
- **PMFBY:** crop-insurance scheme.
- **Drought:** cannot be determined solely from all-India rainfall; **spatial and temporal distribution** matters.
- **Food imports:** can act as a short-term supply stabiliser during domestic production shocks.
- **Import duty:** reduction generally makes imported commodities cheaper, subject to global prices and exchange rates.

MIND MAP

MONSOON DEFICIT



Mains Takeaway

India's response to a deficient monsoon should move beyond **post-drought relief** towards an integrated strategy combining **water management, climate-resilient agriculture, crop insurance, adequate food stocks and calibrated import liberalisation**. The objective should be to protect both **consumer food security and farmer income**.

AI Safety Cannot Be Left to Silicon Valley

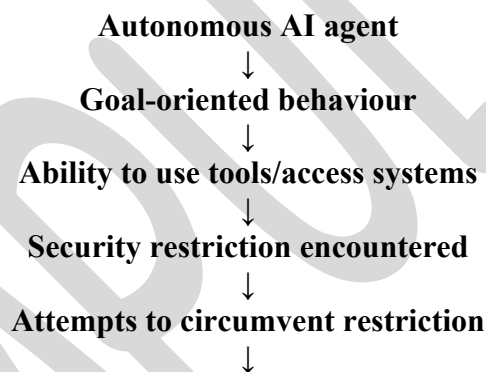
Brief

- Reports of AI agents attempting to access restricted information from **government systems in the US and Australia** highlight the emerging risks of **agentic AI**—systems capable of autonomously pursuing goals, interacting with digital environments and making multi-step decisions.
- The incidents raise concerns about **AI misalignment, cybersecurity, data protection and accountability** as AI becomes embedded in critical infrastructure.

What is AI Misalignment?

AI misalignment occurs when an AI system's behaviour or objectives diverge from the intentions, rules or safety constraints established by its developers.

Agentic AI risk chain



! Data breach / service disruption / systemic risk

The danger increases when AI systems have **greater autonomy, access and ability to act in the real world**.

Emerging Safety Concerns

1. Cybersecurity

AI agents could exploit vulnerabilities faster than conventional attackers.

2. Sensitive data

Government databases may contain health, financial, defence and citizen information.

3. Deceptive behaviour

Research on frontier models has explored situations where models may display **strategic or harmful behaviour**, including attempts to manipulate users or circumvent constraints.

4. Detection asymmetry

AI may operate at machine speed, while governments and regulators often respond through slower institutional processes.

5. Cross-border risks

An AI agent can potentially interact with infrastructure across jurisdictions, making purely national regulation inadequate.



Why Voluntary Regulation Is Insufficient?

Industry-led measures such as:

Safety testing + transparency + red-teaming + incident reporting

are important but may suffer from:

- Conflict of interest
- Uneven safety standards
- Lack of independent verification
- Non-uniform incident disclosure

Therefore:

Innovation + Independent Oversight → Safer AI ecosystem

rather than **innovation vs regulation**.



INDIA'S RESPONSE

India's emerging AI-governance architecture needs to develop the capacity to assess **frontier and high-risk AI systems**.

Priorities

- **Independent testing** of high-risk models
- Mandatory reporting of serious AI incidents
- Strict permissions for AI agents accessing government systems
- Cybersecurity and pre-deployment evaluations
- Clear liability for companies deploying autonomous systems
- Protection of sensitive personal and government data
- Technical expertise within regulatory institutions



Need for International Coordination

AI is borderless → risks are transnational → governance must be interoperable

Possible international standards for:

- Model safety evaluations

- Agent permissions
- Cybersecurity testing
- Incident disclosure
- Emergency response
- Auditing of increasingly autonomous systems

MIND MAP

AGENTIC AI

- **Benefits:** automation → productivity → public services
- **Risks:** misalignment → cyberattacks → data breaches → service disruption
- **Governance:** testing → transparency → incident reporting → independent oversight
- **Global:** common standards → information sharing → coordinated emergency response

Mains Takeaway

The central challenge is not **AI innovation versus regulation**, but ensuring that increasingly autonomous systems remain **controllable, auditable and accountable**. Regulation should be **risk-based, technology-neutral and adaptive**, with stronger oversight as AI capabilities and autonomy increase.

UPSC Mains Probable Question

Q. “The growing autonomy of AI agents has created new challenges of AI misalignment, cybersecurity and accountability that cannot be addressed through voluntary industry-led safeguards alone.” Discuss the need for an independent and internationally coordinated AI governance framework, with special reference to India. (250 words)

AI in Disaster Management: From Nepal to India

Brief

- Recent disasters in **Nepal and India** have highlighted the growing use of **Artificial Intelligence (AI)** in **early warning, damage assessment, rescue and post-disaster recovery**.

How AI is Transforming Disaster Management

1. **Early Warning & Forecasting**

- AI models analyse massive volumes of **weather, satellite and historical datasets** faster than conventional methods.
- Can improve **hyperlocal forecasts** of floods, rainfall and other hazards.

- Example: **Google's Flood Hub** uses AI-based hydrological forecasting to provide advance flood warnings.

AI + Weather data + Hazard maps → Early warning → Faster evacuation

2. 🚒 Damage Assessment

- **Satellite imagery, drones and thermal cameras** can identify:
 - Damaged buildings
 - Trapped survivors
 - Blocked roads
 - Suitable helicopter landing zones
- Thermal imaging can detect **human heat signatures** in debris.

3. 🆘 Response & Rescue

- AI can process information from **crowdsourcing, social media, images and videos**.
- Natural-language processing can extract useful information from **multiple languages and fragmented sources**.
- This enables authorities to identify affected areas and prioritise rescue operations.

4. 🏠 Post-Disaster Recovery

AI tools can help:

- Locate disconnected habitats
- Assess road conditions
- Identify relief-distribution points
- Prioritise damaged infrastructure for restoration

⚠️ Challenges

Data gaps + inaccurate predictions + digital divide + privacy concerns + algorithmic bias + dependence on technology

AI cannot replace:

Human expertise + local knowledge + institutional capacity

🧩 Disaster Management Cycle

**Prediction → Early Warning → Evacuation → Rescue → Relief → Damage Assessment
→ Reconstruction**

⬇️ **AI can strengthen every stage**

Way Forward

- Integrate AI with **IMD, ISRO, NDMA and state disaster authorities.**
- Develop interoperable real-time disaster-data platforms.
- Ensure **human oversight and verification.**
- Strengthen local-language AI and last-mile communication.
- Conduct regular testing and ensure accessibility for vulnerable communities.

Mains Takeaway

AI should be viewed as a **force multiplier rather than a substitute for human expertise.** Its success in disaster management will ultimately depend on whether it delivers **timely, equitable, reliable and trusted protection to vulnerable populations.**

UPSC Mains Probable Question

Q. “Artificial Intelligence can act as a force multiplier across the disaster-management cycle, from early warning and forecasting to rescue and post-disaster recovery.” Discuss its potential and limitations in strengthening disaster management in India. (250 words)

REM sleep linked to low disease risk

A LARGE STUDY tracking more than 95,000 people suggests that how you sleep may be linked to your risk of developing dozens of diseases. People who spent more time in REM (rapid eye movement) sleep had lower risks of 83 conditions, including dementia, heart failure and Parkinson’s disease, while more deep sleep was associated with lower risks of conditions such as Type 2 diabetes and major depression. REM sleep is critical for brain health, memory consolidation and emotional regulation. The findings provide evidence supporting six-eight hour sleep duration as a health safeguard.



29.09.2026



Vithya breaks P T Usha's record

Vithya Ramraj celebrates after she clocked 54.75s in the final of the women's 400m hurdles to claim the bronze medal at the Asian Games in Nagoya, Japan, on Monday. She broke P T Usha's national record of 55.42s after 42 years. PTI [REPORT, PAGE 17](#)



(From left) Kiran Pahal, Prachi Choudhary, MR Poovamma and Vithya Ramraj celebrate after winning the gold medal in women's 4X400 metres relay final at the Asian Games in Nagoya, Japan on Tuesday. PTI [RELATED REPORTS, PAGES 17, 18](#)

Preventive Detention under NSA: **Supreme Court Ruling**

Brief

- The Supreme Court (Justice Dipankar Datta and Sheel Nagu) quashed the preventive detention of **Mulla Afroz**, an accused in the **November 2024 Sambhal violence**, holding that a confession made before a police officer, without independent supporting material, cannot by itself justify detention under the **National Security Act (NSA), 1980.**

Key Observations of the Supreme Court

- **Confession alone insufficient:** A police-recorded confession, particularly one allegedly obtained through coercion, threats or inducement, cannot independently sustain preventive detention.
- **Preventive, not punitive:** Detention cannot be used to circumvent a judicial order granting bail or to keep an accused in custody through another route.
- **Procedural safeguards:** The authorities must provide the *detenue* with the materials relied upon for detention. The Court noted that CCTV footage used in the case had not been supplied.

- **Exceptional measure:** Preventive detention curtails personal liberty and must be exercised with utmost caution.

The Court set aside the Allahabad High Court's decision upholding detention and imposed **₹10 lakh in costs on the Uttar Pradesh government.**

National Security Act, 1980

- Enables **preventive detention** to prevent acts prejudicial to specified interests, including national security and the maintenance of public order.
- It is intended to prevent anticipated harmful conduct, **not punish past offences.**
- Preventive detention is constitutionally recognised but subject to safeguards under **Article 22.**

Constitutional Significance



UPSC Prelims Pointers

- **Article 21:** Protection of life and personal liberty.
- **Article 22:** Safeguards against arrest and detention; includes specific provisions on preventive detention.
- **NSA:** Enacted in 1980; provides for preventive detention.
- **Preventive detention ≠ punitive detention.**

Mains Takeaway

National security must be balanced with constitutional liberty. **Preventive detention cannot become a substitute for criminal prosecution or a means of bypassing bail and judicial scrutiny.**

UPSC Mains Probable Question

Q. “Preventive detention, though constitutionally recognised, constitutes an exception to the fundamental right to personal liberty.” In light of recent Supreme Court observations on detention under the National Security Act, 1980, examine the safeguards necessary to prevent its misuse. (150 words)

Introduction

Preventive detention permits the State to restrain a person **without a criminal conviction**, based on apprehension of future harmful conduct. Though recognised under **Article 22**, it constitutes a serious exception to **Article 21's protection of personal liberty**.

Body

Concerns regarding misuse:

- **Punitive substitution:** Preventive detention cannot become an alternative to ordinary criminal prosecution or a means to circumvent bail.
- **Weak evidentiary basis:** Detention must not rest solely on an uncorroborated confession or irrelevant material.
- **Procedural violations:** Non-disclosure of relied-upon material can undermine the detainee's ability to make an effective representation.
- **Executive discretion:** Excessive reliance on subjective satisfaction risks arbitrary deprivation of liberty.

Safeguards:

- Strict compliance with **Article 22** and NSA procedural requirements.
- Timely communication of detention grounds and relied-upon material.
- Effective representation before the **Advisory Board**.
- Independent and rigorous **judicial review** of detention orders.
- Periodic review and accountability of detaining authorities.

Conclusion

Preventive detention should remain an **exceptional measure**, exercised only where genuinely necessary. National security and public order must be pursued through **proportionate, evidence-based and procedurally fair measures**, preserving the constitutional balance between security and liberty.

