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**Topic :** Catalysing Domestic Production and Technological Innovation

**Relevance :** GS Paper 3 Economy

**Source :** PIB

**Context :**

The capital goods industry is a cornerstone of industrial and economic development, encompassing critical sectors like heavy engineering, machine tools, electrical equipment, and construction machinery. The Government of India, through the **Make in India** initiative, has implemented a series of policies aimed at boosting domestic production, reducing import dependency, and enhancing technological capabilities. This article explores the progress and future roadmap of India's capital goods sector, focusing on domestic production and technological advancements.



### Expansion of the Capital Goods Sector

The capital goods sector has seen substantial growth, with production increasing from **₹2,29,533 crore in 2014-15 to ₹4,29,001 crore in 2023-24**. This expansion has been driven by:

- **Government policies** promoting domestic manufacturing.
- **Incentives for technology acquisition** to enhance local production.
- **Infrastructure development projects** boosting demand for capital goods.

**Key sub-sectors within the capital goods industry include:**

The electrical equipment industry has experienced consistent double-digit growth, driven by domestic demand and global market expansion. Notably, the construction

- **Dies, Moulds, and Press Tools**
- **Earthmoving and Mining Machinery**
- **Textile Machinery**
- **Printing and Food Processing Machinery**

The electrical equipment industry has experienced consistent double-digit growth, driven by domestic demand and global market expansion. Notably, the construction equipment market in India is the third largest globally, reflecting rapid urbanization and infrastructure development.

S.No	Sub-Sector of capital Goods	2019-20	2020-21	2021-22	2022-23	2023-24
1	Machine Tools	6152	6602	9307	11956	13571
2	Dies, Moulds and Press Tools	13682	12294	13128	13915	15600
3	Textile Machinery	5355	5093	11658	14033	14639
4	Printing Machinery	12678	10058	13215	16107	23479
5	Earthmoving and Mining Machinery	31020	29021	28674	37551	73000
6	Plastic Processing Machinery	2350	3710	3850	3912	4310
7	Food Processing Machinery	7547	10250	12210	13203	13863
8	Process Plant Equipment	29250	21938	24000	23415	27396

**Government Initiatives Supporting Domestic Production**

1. **National Capital Goods Policy (2016):** Aims to increase the capital goods sector's contribution to manufacturing from **12% to 20% by 2025**, double production, and boost exports to **40% of total output**.
2. **Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector:**
  - **Phase I (2014-2022):** Focused on skill development, infrastructure improvement, and technology acquisition.
  - **Phase II (2022-Present):** Aims to expand the impact of Phase I, with a **financial outlay of ₹1207 crore**.
3. **Union Budget 2025-26:** Expanded the list of capital goods exempted from import duties, especially in the electric vehicle and mobile battery segments.
4. **100% FDI via the Automatic Route:** Encourages foreign investment to enhance domestic manufacturing capabilities.

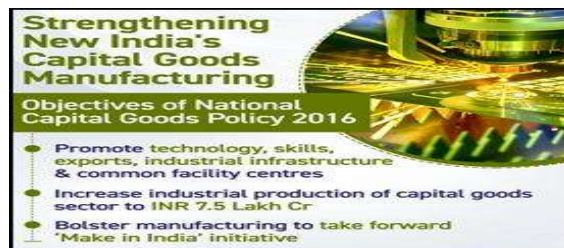
**Key Technological Advancements**

S.No	Sub-Sector of Capital Goods	2019-20	2020-21	2021-22	2022-23	2023-24
1	Machine Tools	768	531	913	1463	1659
2	Dies, Moulds and Press Tools	1138	973	1150	1247	1900
3	Textile Machinery	2556	3307	4970	5836	4451
4	Printing Machinery	1230	1012	1312	1597	2369
5	Earthmoving and Mining Machinery	3583	1816	2792	2963	5800
6	Plastic Processing Machinery	335	1348	1800	1935	2154
7	Food Processing Machinery	2737	4555	6918	4018	4148
8	Process Plant Equipment	8330	6248	6600	7812	9140

- **Industry 4.0 & Smart Manufacturing:** Adoption of IoT, AI, and automation in manufacturing.
- **Advanced Materials & Robotics:** Enhancing efficiency and precision in machine tools.
- **Sustainable & Green Technologies:** Development of energy-efficient and environmentally friendly industrial processes.
- **Digital Twin & Virtual Reality Solutions:** Facilitating real-time monitoring and predictive maintenance in manufacturing plants.

### Government-backed Technology Development Initiatives

1. **Centres of Excellence (CoE):**
  - 8 CoEs established for niche technology development in **machine tools, additive manufacturing, textile machinery, and robotics.**
2. **Common Engineering Facility Centres (CEFCs):**
  - 15 CEFCs, including four **Industry 4.0 SAMARTH Centres** and six **Web-Based Technology Innovation Platforms (TIPs)**, aiding in R&D and industry collaboration.



3. **Technology Acquisition Fund Programme (TAFP):**
  - Acquisition of critical technologies such as **Titanium Casting, High-Reliability Electrical Cables, CNC Lathe Development, and Robotic Laser Cladding.**
4. **Integrated Machine Tools Park, Tumakuru:**
  - A 530-acre industrial park dedicated to machine tool manufacturing.
5. **Smart Manufacturing at IISc Bengaluru:**
  - Development of **6 smart technologies, 5 smart tools, and 14 solutions** in **robotics, inspection, and additive manufacturing.**
6. **Battery & Electric Mobility R&D:**
  - Establishment of testing facilities for **battery and Battery Management System (BMS)** at ARAI, Pune.

**Role of Bharat Heavy Electricals Limited (BHEL)**

BHEL, a key player in India's capital goods sector, has been actively involved in:

- **Skill development through CEFCs in Welding Technology.**
- **Establishing high-tech testing facilities** for industrial and defense applications.

**Advancing research in smart manufacturing and industrial automation.****Bharat Heavy Electricals Limited (BHEL)**

BHEL is a major contributor towards **engineering and manufacturing capacity building** for the Country. The company is carrying out following initiatives with support from Ministry of Heavy industries under the **Capital Goods Scheme Phase II**:

- BHEL has established a “**Common Engineering Facility Centre (CEFC)**” for skill development in Welding Technology at WRI Trichy along with its extension centers at Varanasi, Ranipet, Bhopal, Jhansi and Haridwar units of BHEL.
- BHEL is establishing a **testing facility** comprising both Hardware in the Loop (HIL) and Software in the Loop (SIL) functionalities in the area of Industrial, Naval and Aircraft related processes at its Corporate R&D Unit at Hyderabad with support from Ministry of Heavy Industries.

India's capital goods sector is at the forefront of the country's industrial transformation. With strong policy support, targeted technological interventions, and increasing private sector participation, the sector is poised to drive **self-reliance (Aatmanirbhar Bharat), global competitiveness, and economic growth**. The continued emphasis on domestic production and innovation will ensure India's emergence as a leading hub for capital goods manufacturing in the coming decade.

**Prelims Practice Question :**

With reference to the capital goods sector in India, consider the following statements:

1. The capital goods industry contributes approximately 5% to India's GDP.
2. The National Capital Goods Policy (2016) aims to increase the sector's contribution to manufacturing activity to 20% by 2025.
3. Under the Make in India initiative, FDI up to 100% in the capital goods sector is permitted only through the government approval route.
4. The Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector has been implemented in two phases to promote R&D, skill development, and technology acquisition.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 2 and 4 only
- (c) 2, 3, and 4 only
- (d) 1, 2, and 4 only

**Answer:**

- **Statement 1** is incorrect: The capital goods industry contributes about **1.9%** to India's GDP, not 5%.
- **Statement 2** is correct: The National Capital Goods Policy (2016) aims to **increase the contribution of the sector to manufacturing from 12% to 20% by 2025**.
- **Statement 3** is incorrect: FDI up to **100% is allowed under the automatic route**, except for countries sharing land borders with India, which require government approval.
- **Statement 4** is correct: The Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector has been implemented **in two phases**, focusing on **R&D, skill development, technology acquisition, and industrial infrastructure**.

**Correct Answer: (b) 2 and 4 only**

**Mains Model Question:**

"The Capital Goods sector is a crucial pillar of India's industrial growth and self-reliance. Discuss the role of government initiatives in promoting domestic production and technological innovation in this sector."

The Capital Goods sector plays a vital role in India's industrial ecosystem, serving as the backbone for manufacturing, infrastructure, and technological advancements. This sector includes industries such as electrical equipment, machinery, and heavy engineering, all of which contribute significantly to economic growth. Recognizing its importance, the government has introduced several initiatives to promote domestic production and technological self-sufficiency. The Make in India initiative, launched in 2014, has been instrumental in boosting the sector by encouraging indigenous manufacturing and reducing reliance on imports. The National Capital Goods Policy (2016) set ambitious targets to increase the sector's contribution to manufacturing from 12% to 20% by 2025. It emphasized modernization, skill development, and research collaborations to enhance productivity and global competitiveness.

Government schemes such as the Enhancement of Competitiveness in the Indian Capital Goods Sector have been implemented in two phases.

(Amount in Rs Crores)

Financial Year	Allocation at RE stage	Funds released
2014-15	24.00	2.80
2015-16	23.00	22.87
2016-17	60.50	59.97
2017-18	110.00	109.72
2018-19	110.50	110.4483
2019-20	102.30	102.16184
2020-21	55.52	54.2197
2021-22	29.00	28.933925
2022-23	199.60	199.24
2023-24	187.20	83.3431
2024-25	120.00/184.00 *	(As on 03.02.2025) 134.55

\* Current allocation

These schemes focus on setting up Centres of Excellence, Common Engineering Facility Centres, and Industry 4.0 initiatives, fostering innovation through academia-industry partnerships. The establishment of Integrated Machine Tools Parks and technology acquisition programs has further strengthened domestic capabilities.

Recent policy measures, including the exemption of additional capital goods from import duties for EV battery manufacturing, highlight the push towards self-reliance in high-tech industries. Investments in R&D, digital manufacturing, and smart technologies have led to advancements in robotics, industrial IoT, and automation, reducing dependence on foreign expertise.

Through sustained policy support, India's capital goods sector is not only driving industrial expansion but also positioning the country as a global manufacturing hub. Continued emphasis on innovation, investment, and infrastructure will be crucial in achieving long-term self-sufficiency and economic resilience in this sector.

### Topic : El Niño and La Niña

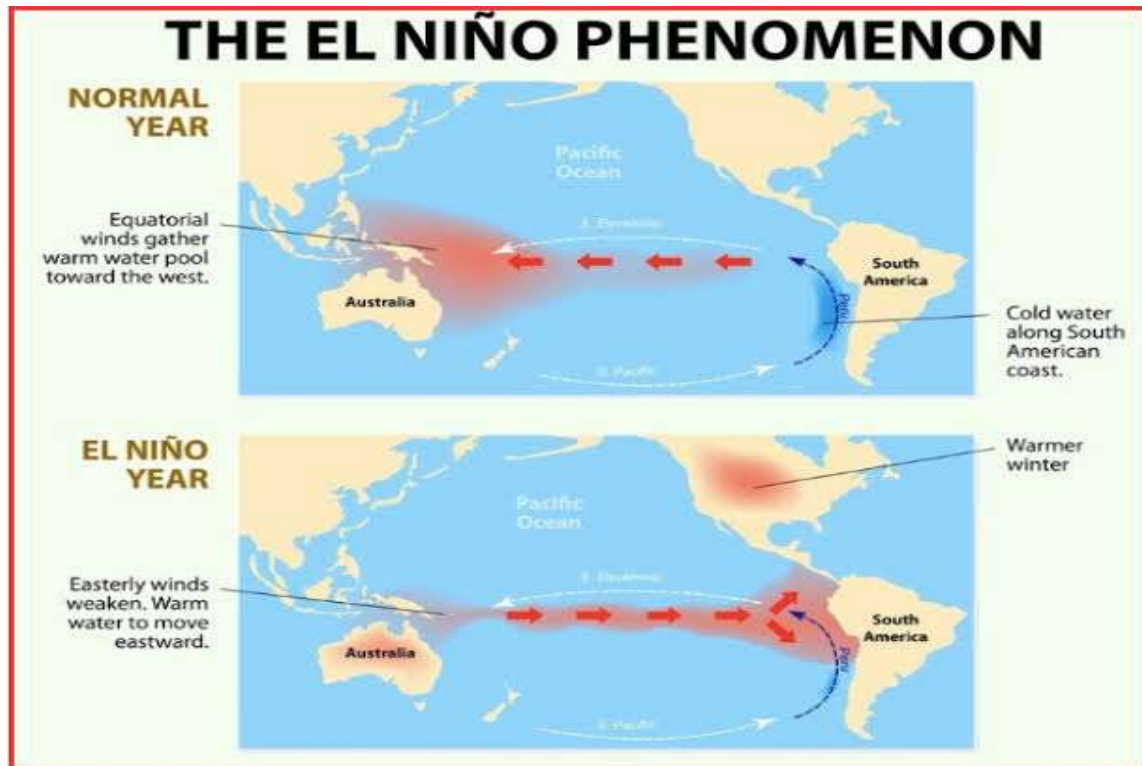
**Relevance :** GS Paper 1 Geography

**Source :** The Hindu

### Context :

El Niño and La Niña are opposing phases of the El Niño-Southern Oscillation (ENSO) phenomenon, which influences global weather patterns by altering ocean temperatures and atmospheric pressure systems in the Pacific Ocean.

- **El Niño** occurs when sea surface temperatures (SSTs) in the central and eastern Pacific Ocean rise above average. This disrupts normal weather patterns, weakening monsoon winds in South Asia, increasing drought risk, and often leading to a warmer-than-average year globally.
- **La Niña**, on the other hand, is characterized by below-average SSTs in the central and eastern Pacific. It strengthens trade winds and typically leads to increased monsoon rainfall in India, aiding agricultural output and mitigating heatwaves.



### Impact of ENSO on India's Climate

India's climate is significantly influenced by ENSO, especially in terms of monsoon rainfall, temperature variations, and extreme weather events:

1. **El Niño and Monsoon Deficiency:** Historically, El Niño years have been associated with deficient monsoons and droughts, negatively affecting agriculture and water resources. Examples include the severe droughts in 2009 and 2015, both linked to strong El Niño events.
2. **La Niña and Enhanced Monsoon:** La Niña generally strengthens the monsoon winds, leading to above-average rainfall. This benefits India's agriculture-dependent economy by improving crop yields but can also increase flood risks.
3. **Winter and Cyclonic Activity:** El Niño suppresses cyclone activity in the Bay of Bengal, while La Niña enhances it, leading to more intense storms and heavy rainfall in coastal regions.
4. **Temperature Extremes:** La Niña years often result in cooler winters, while El Niño leads to warmer-than-usual temperatures, exacerbating heatwave conditions.

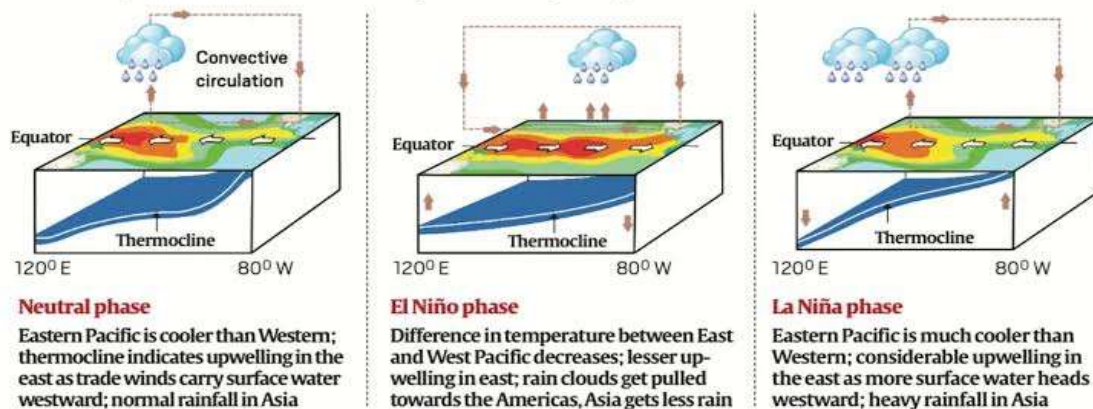
### What to Expect in 2025?

The Ministry of Earth Sciences' latest report suggests that 2025 will likely experience neutral ENSO conditions, meaning neither a strong El Niño nor La Niña will dominate the climate. While global warming continues to raise temperatures, the absence of La Niña may lead to a more typical monsoon pattern without excessive rainfall or drought. However, the second-highest recorded January temperature in India in 2025 (0.98°C above the 1991-2020 average) indicates an overarching warming trend, which could intensify heatwaves and impact water availability.

La Nina	El Nino
The Trade winds become stronger than normal	The Trade winds weaken in the western Pacific
Trade winds cause warmer waters in the west	Trade winds cause warmer waters in the East
The sea surface temperature reduces across the Eastern Pacific by 3-5 °c	The sea surface temperature increases across the Eastern Pacific by 6-8 °c
La Nina events occur half the amount of time El Nino events do	El Nino events occur every 3-7 years
Enhanced upwelling of nutrient rich waters increasing fish populations along S. America coast	Reduced upwelling of deep nutrient rich water leads to reduction in fish populations along S. America coast

### THE THREE PHASES OF EL NIÑO SOUTHERN OSCILLATION (ENSO)

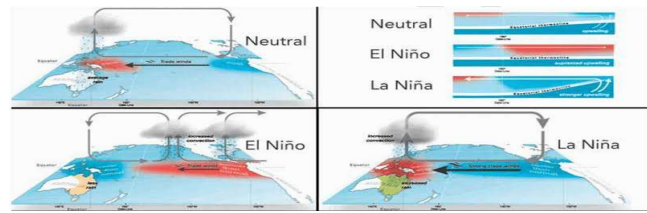
The illustrations show the Pacific Ocean around the equator and the trade winds above it. The heat map shows water temperature. Thermocline is the layer of water separating the warmer surface water and cooler water below



### Potential Climate Impacts for India in 2025

- Monsoon Performance:** With neutral ENSO conditions, rainfall may remain close to normal, reducing the risk of severe droughts or floods.
- Heatwave Intensification:** Rising temperatures due to global warming may make heatwaves more frequent and intense, particularly in northern and central India.
- Cyclonic Activity:** Without a strong La Niña, cyclone patterns in the Bay of Bengal and Arabian Sea may remain within typical variations, but climate change could still lead to unseasonal storms.
- Agricultural Considerations:** Farmers may experience a stable monsoon but must remain prepared for extreme weather events, such as untimely rains or localized droughts, due to climate variability.





While ENSO plays a critical role in shaping India's weather, global warming is increasingly becoming the dominant factor affecting climate patterns. The neutral ENSO forecast for 2025 suggests a relatively stable monsoon, but persistent temperature rises could lead to prolonged heatwaves and altered rainfall distribution. Continued monitoring by the India Meteorological Department (IMD) will be essential for predicting short-term variations and mitigating adverse impacts.

### Prelims Practice Question:

#### Q. Consider the following statements regarding El Niño and La Niña:

1. El Niño is characterized by the warming of sea surface temperatures in the central and eastern Pacific Ocean, leading to reduced monsoon rainfall in India.
2. La Niña typically results in above-average rainfall in India and is favorable for agricultural production.
3. The Indian Ocean Dipole (IOD) has no impact on the Indian monsoon and is independent of El Niño and La Niña events.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2, and 3

**Answer:** (a) 1 and 2 only

#### Explanation:

- **Statement 1 is correct.** El Niño leads to warming of sea surface temperatures in the central and eastern Pacific, which weakens monsoon currents and leads to deficient rainfall in India.
- **Statement 2 is correct.** La Niña strengthens the monsoon currents and usually brings above-average rainfall to India, benefiting agriculture.
- **Statement 3 is incorrect.** The Indian Ocean Dipole (IOD) does influence the Indian monsoon. A positive IOD can counteract the negative effects of El Niño, while a negative IOD can amplify its impact.



### Mains Model Question:

**Q. Explain the phenomena of El Niño and La Niña and their significance for India's climate. In light of recent predictions for 2025, analyze their possible impact on India's weather patterns and economy.**

El Niño and La Niña are climatic phenomena associated with the warming and cooling of sea surface temperatures in the equatorial Pacific Ocean, respectively. El Niño occurs when sea surface temperatures rise abnormally in the central and eastern Pacific, disrupting global weather patterns, including weakening of the Indian monsoon. This often results in below-average rainfall, droughts, and extreme heat in India. On the other hand, La Niña is characterized by cooler-than-normal sea surface temperatures in the same region, strengthening monsoon currents and leading to above-average rainfall, which benefits agriculture and water resources.

India's climate is highly influenced by these phenomena, particularly in terms of monsoon performance. A strong monsoon during La Niña years enhances agricultural productivity, boosts rural incomes, and ensures food security. However, excessive rainfall can also lead to floods and crop damage. Conversely, El Niño years tend to bring droughts, heatwaves, and reduced crop yields, affecting inflation, food prices, and economic stability.

For 2025, forecasts suggest a neutral ENSO condition, meaning neither El Niño nor La Niña will dominate. This implies that the monsoon will likely follow normal patterns without extreme deviations. However, global warming and other regional climatic factors such as the Indian Ocean Dipole (IOD) could still influence rainfall distribution. The persistence of high temperatures despite La Niña in early 2025 indicates that climate change is playing an increasing role in shaping weather events. While the absence of El Niño provides relief from potential droughts, India must remain prepared for localized variations, extreme weather events, and

**Topic :** Fiscal Health Index 2025

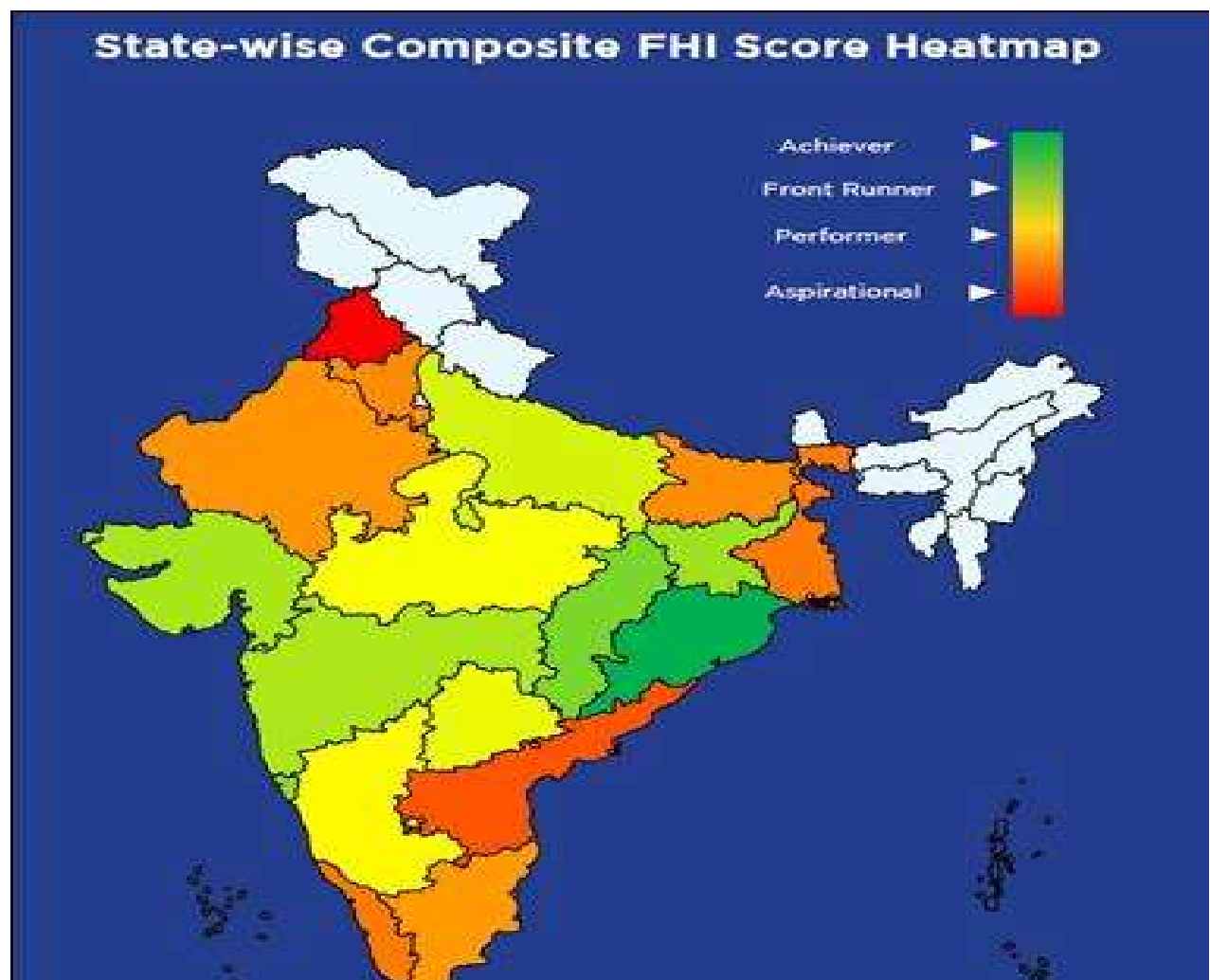
**Relevance :** GS Paper 2 Polity and Governance

**Source :** PIB

**Context :**

The **Fiscal Health Index (FHI) 2025**, an initiative by **NITI Aayog**, aims to provide an analytical framework to assess the fiscal stability of Indian states. The index evaluates states based on their economic resilience, expenditure management, revenue generation, and debt sustainability. Given that states contribute nearly two-thirds of total public expenditure and one-third of total revenue, their fiscal health is crucial for the country's overall economic stability.

The FHI 2025 covers **eighteen major states**, with **Odisha** leading the index, followed by **Chhattisgarh, Goa, Jharkhand, and Gujarat**. The ranking is based on a composite analysis of various financial indicators obtained from the **Comptroller and Auditor General of India (CAG)** for the financial year **2022-23**.



### Key Objectives of the Fiscal Health Index

- **Comparative Analysis:** To assess and compare fiscal health across states using standardized metrics.
- **Identifying Strengths and Weaknesses:** Highlighting states' fiscal strengths and areas requiring improvement.
- **Promoting Fiscal Responsibility:** Encouraging transparency and accountability in public financial management.
- **Informed Policymaking:** Assisting policymakers in making strategic interventions to ensure fiscal stability and resilience.

States	FHI Score	Rank 2022-23	Quality of Expenditure	Revenue Mobilization	Fiscal Prudence	Debt Index	Debt Sustainability
Odisha	67.8	1	52.0	69.9	54.0	99.0	64.0
Chhattisgarh	55.2	2	55.1	56.5	56.0	79.6	29.0
Goa	53.6	3	45.5	87.1	59.4	51.0	25.2
Jharkhand	51.6	4	47.3	45.7	62.4	66.9	35.7
Gujarat	50.5	5	40.0	48.7	52.7	69.0	42.0
Maharashtra	50.3	6	37.1	59.1	41.8	76.4	36.8
Uttar Pradesh	45.9	7	45.8	34.6	44.7	59.9	44.5
Telangana	43.6	8	36.9	75.2	40.8	53.3	11.7
Madhya Pradesh	42.2	9	59.7	27.6	35.6	61.0	27.2
Karnataka	40.8	10	47.4	43.9	43.9	62.2	6.7
Tamil Nadu	29.2	11	32.0	41.2	25.8	36.0	11.1
Rajasthan	28.6	12	38.3	35.4	19.9	32.3	16.8
Bihar	27.8	13	56.1	5.3	11.5	47.2	18.8
Haryana	27.4	14	24.8	47.8	26.1	24.1	14.3
Kerala	25.4	15	4.2	54.2	34.0	23.1	11.3
West Bengal	21.8	16	32.3	12.4	25.4	18.3	20.6
Andhra Pradesh	20.9	17	31.4	22.1	13.3	37.8	0.0
Punjab	19.7	18	4.7	28.1	5.6	0.0	15.2

### Categorization and Methodology

The FHI 2025 is structured around five broad **categories of financial indicators**:

1. **Tax Buoyancy:** Measures how responsive a state's tax revenue is to changes in **Gross State Domestic Product (GSDP)**. Higher buoyancy indicates efficient tax collection aligned with economic growth.
2. **Revenue Generation and Mobilization:** Assesses states' **own revenue receipts**, tax efficiency, and non-tax revenue sources.
3. **Debt-to-GSDP Ratio:** Indicates a state's ability to manage and repay its debt. A lower ratio is preferable as it suggests better fiscal discipline.
4. **Expenditure Management and Prioritization:** Evaluates how efficiently states allocate **capital and developmental expenditure** while maintaining fiscal discipline.
5. **Fiscal Deficit Management:** Measures states' fiscal deficit as a percentage of GSDP and their adherence to **statutory fiscal limits**.

### Key Findings of Fiscal Health Index 2025

- **Top Performers:** Odisha (67.8), Chhattisgarh (55.2), Goa (53.6) excelled due to prudent debt management and strong revenue mobilization.
- **Revenue Mobilization Leaders:** Odisha, Jharkhand, Goa, and Chhattisgarh efficiently raised non-tax revenue (averaging **21% of total revenue**).
- **Debt Management Excellence:** Odisha led in the **Debt Index (99.0)** and **Debt Sustainability (64.0)**.

Achiever	Front Runner	Performer	Aspirational
Odisha (1)	Maharashtra (6)	Tamil Nadu (11)	Kerala (15)
Chhattisgarh (2)	Uttar Pradesh (7)	Rajasthan (12)	West Bengal (16)
Goa (3)	Telangana (8)	Bihar (13)	Andhra Pradesh (17)
Jharkhand (4)	Madhya Pradesh (9)	Haryana (14)	Punjab (18)
Gujarat (5)	Karnataka (10)		

- **Fiscal Deficit Management:** States like **Madhya Pradesh, Karnataka, Uttar Pradesh, and Goa** allocated around **27% of developmental expenditure** to capital projects, ensuring long-term growth.
- **Underperforming States:** **Punjab, Andhra Pradesh, West Bengal, and Kerala** face major fiscal challenges, including high fiscal deficits and poor debt sustainability.
- **Debt Sustainability Concerns:** **West Bengal and Punjab** show rising **Debt-to-GSDP ratios**, signaling fiscal stress.

### India's Stance on Fiscal Health and Policy Implications

India's economic policy recognizes the **importance of fiscal stability at the state level**. The **Finance Commission and Reserve Bank of India (RBI)** regularly monitor state finances, issuing recommendations to ensure **prudent debt management and fiscal consolidation**.

#### Tax Buoyancy

Tax buoyancy is a ratio of change in tax revenue in relation to change in gross state domestic product or GSDP of a state. It measures how responsive a taxation policy is to growth in economic activities.

#### Sustainability of Debt Portfolios

Sustainability of debt portfolios refers to state's ability to meet its current and future debt obligations without defaulting or requiring exceptional financial assistance. focusing on both

- **State Fiscal Responsibility:** The **Fiscal Responsibility and Budget Management (FRBM) Act** mandates states to maintain their fiscal deficit within prescribed limits.
- **Central Assistance:** The **Centre provides grants and incentives** for states to improve tax collection, reduce deficits, and enhance expenditure efficiency.
- **Debt Control Measures:** RBI's periodic assessment of **state borrowings and contingent liabilities** ensures fiscal sustainability.
- **Investment in Infrastructure:** High-performing states in the FHI 2025 show that allocating **higher capital expenditure (above 25%)** leads to better fiscal outcomes.
- **Policy Recommendations:** The report underscores the need for states with weak fiscal performance to **enhance revenue mobilization, control debt accumulation, and improve**

### Prelims Practice Question:

#### Q. Consider the following statements regarding the Fiscal Health Index (FHI) 2025:

1. The Fiscal Health Index is developed by the Reserve Bank of India to assess the financial health of Indian states.
2. Odisha ranks first in the Fiscal Health Index 2025 due to strong debt management and high capital outlay.
3. The Index evaluates states based on revenue generation, expenditure management, debt sustainability, and fiscal deficit control.
4. States like Punjab and West Bengal have been identified as having strong fiscal stability.

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

- (a) 1 and 4 only
- (b) 2 and 3 only
- (c) 1, 2, and 3 only
- (d) 2, 3, and 4 only

**Answer:** Correct option: (b) 2 and 3 only

#### Explanation:

- Statement 1 is incorrect: The **Fiscal Health Index** is developed by **NITI Aayog**, not the Reserve Bank of India.
- Statement 2 is correct: **Odisha** ranks first in the FHI 2025 due to **low fiscal deficits, strong debt management, and a high capital outlay-to-GSDP ratio**.
- Statement 3 is correct: The **FHI evaluates states based on multiple parameters, including tax buoyancy, debt-to-GSDP ratio, expenditure efficiency, and fiscal deficit management**.
- Statement 4 is incorrect: **Punjab and West Bengal** face **significant fiscal challenges** due to **high debt burdens, poor expenditure quality, and rising debt-to-GSDP ratios**.

The Fiscal Health Index 2025 offers a valuable tool for assessing the fiscal performance of Indian states. It highlights the need for continuous monitoring, prudent fiscal management, and proactive measures to enhance states' financial health. The Index underscores the importance of revenue generation, efficient expenditure management, debt control, and adherence to fiscal deficit targets for overall fiscal sustainability. The FHI report has been shared with all States/UTs to help them evaluate their fiscal performance across key indicators. States are encouraged to adopt sustainable fiscal practices suited to their economies and work towards fiscal prudence through appropriate state-level interventions.

### Mains Model Question

**Discuss the significance of the Fiscal Health Index (FHI) 2025 in assessing state-level economic resilience in India. How does the index categorize fiscal health, and what challenges do fiscally weaker states face? Suggest measures for improving fiscal sustainability at the state level.**

The **Fiscal Health Index (FHI) 2025**, developed by NITI Aayog, is a critical tool for evaluating the economic resilience of Indian states. Given that states account for nearly two-thirds of public spending and one-third of revenue generation, their fiscal health is vital for India's overall economic stability. The **FHI assesses states using a composite index**, covering key indicators such as **tax buoyancy, revenue generation, expenditure efficiency, debt sustainability, and fiscal deficit management**. Odisha leads the index, followed by Chhattisgarh and Goa, while states like Punjab and West Bengal struggle with high debt burdens and fiscal mismanagement.

The index categorizes states based on **five major parameters**. **Tax buoyancy** measures how well a state's tax revenue grows in proportion to its GSDP. **Debt-to-GSDP ratio** evaluates the sustainability of state debt. **Expenditure management** assesses how effectively states allocate resources. **Debt sustainability** examines whether states can manage their obligations without excessive borrowing. **Fiscal deficit management** ensures adherence to statutory limits for financial stability.

Fiscally weaker states face multiple challenges, including **high fiscal deficits, poor revenue mobilization, excessive debt burdens, and inadequate capital expenditure**. States like Punjab and West Bengal have rising debt-to-GSDP ratios, limiting their ability to invest in development projects. Low revenue generation, dependence on central grants, and inefficient expenditure further worsen their fiscal position.

To improve fiscal sustainability, states must **enhance revenue mobilization, control unproductive expenditures, and focus on capital investments that generate long-term economic returns**. Strengthening tax compliance, reducing reliance on borrowings, and implementing transparent budgeting practices will help states achieve financial resilience. The **FHI 2025 serves as a roadmap**, urging states to adopt prudent fiscal policies and ensure long-term economic stability.

**Topic : Solid Waste Management in India**

**Relevance :** GS Paper 2 Polity and Governance

**Source :** Indian Express

**Context :**

Solid waste management (SWM) is a critical aspect of sustainable urban and rural development. It involves the collection, treatment, disposal, and recycling of solid waste, ensuring minimal environmental and health hazards. With rapid urbanization, industrialization, and population growth, India faces an increasing burden of waste generation, making efficient management essential. The Ministry of Science & Technology, along with other government agencies, has made significant progress in developing advanced waste management technologies.



### Why is Solid Waste Management Required?

The lack of efficient waste management leads to severe consequences, including environmental pollution, groundwater contamination, health hazards, and loss of recyclable materials. Unscientific disposal of waste contributes to air and water pollution, exacerbates climate change, and creates urban sanitation crises. Proper SWM is necessary for reducing landfill dependence, promoting resource recovery, and ensuring a cleaner, healthier environment.

### India's Stance on Solid Waste Management

India generates **over 62 million tonnes** of municipal solid waste (MSW) annually, of which **only about 75-80% is collected**, and **less than 30% is processed**. The government has taken various initiatives to improve SWM by implementing scientific disposal methods, promoting recycling, and encouraging the circular economy.



Key research institutions such as **CSIR-IICT**, **CSIR-CMERI**, and **CSIR-AMPRI** have developed cutting-edge technologies for waste-to-energy conversion, recycling of construction waste, and sustainable waste management solutions.

### Key Policies and Initiatives in India

1. **Solid Waste Management Rules, 2016** – Aims to improve waste segregation, collection, and scientific disposal.
2. **Swachh Bharat Mission (SBM-U 2.0 & SBM-R)** – Focuses on garbage-free cities by setting up Material Recovery Facilities (MRFs), recycling units, and waste-to-energy plants.
3. **Plastic Waste Management Rules, 2016** – Regulates plastic waste generation and promotes extended producer responsibility (EPR).
4. **Waste-to-Energy Technologies** – Development of biomethanation, pyrolysis, and incineration plants to convert organic waste into energy.
5. **Construction & Demolition (C&D) Waste Management** – Technologies to convert C&D waste into sustainable building materials.
6. **E-Waste Management Rules, 2022** – Focuses on responsible disposal and recycling of electronic waste.
7. **Plasto-fuel Technology** – Conversion of mixed plastic waste into high-quality fuels.



India is making strides in SWM through technological advancements, regulatory frameworks, and government initiatives. However, **challenges like lack of segregation at source, inadequate infrastructure, and public awareness persist.** Strengthening waste management systems, incentivizing recycling industries, and fostering community participation will be crucial in achieving a sustainable waste management ecosystem in India.

### Prelims Practice Question

**Q. Consider the following statements regarding Solid Waste Management (SWM) in India:**

1. The Swachh Bharat Mission Urban 2.0 (SBM-U 2.0) aims to create "Garbage Free Cities" by promoting waste processing and recycling.
2. The Plastic Waste Management Rules, 2016, introduced the concept of Extended Producer Responsibility (EPR).
3. CSIR-Indian Institute of Chemical Technology (CSIR-IICT) has developed a technology for converting plastic waste into fuel.

4. The Solid Waste Management Rules, 2016, mandate source segregation of waste for effective disposal.

**Which of the above statements are correct?**

- (a) 1, 2, and 4 only
- (b) 1 and 3 only
- (c) 2 and 4 only
- (d) All of the above

**Answer:**

- (a) 1, 2, and 4 only

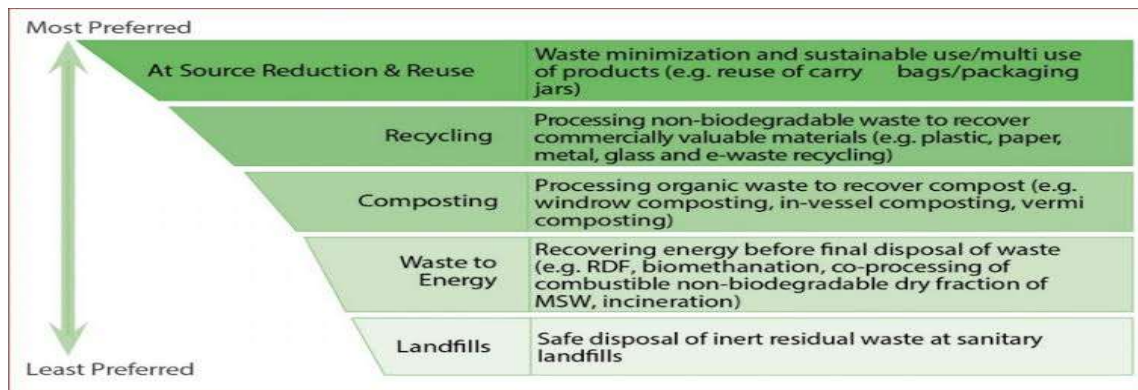
**Explanation:**

- **Statement 1 is correct:** SBM-U 2.0 aims to create garbage-free cities by enhancing waste processing, material recovery, and recycling.
- **Statement 2 is correct:** The Plastic Waste Management Rules, 2016, introduced EPR, making manufacturers responsible for plastic waste collection and recycling.
- **Statement 3 is incorrect:** The **Department of Science and Technology (DST)**, not CSIR-IICT, has developed a technology for converting municipal mixed plastic waste into high-quality plasto-fuels.
- **Statement 4 is correct:** The Solid Waste Management Rules, 2016, mandate source segregation of waste into biodegradable, non-biodegradable, and hazardous waste.

**Mains Model Question**

**Q. Solid Waste Management (SWM) is a crucial aspect of sustainable urban development in India. Discuss the challenges associated with SWM and evaluate the initiatives taken by the Indian government to address these issues.**

Solid Waste Management (SWM) is a significant challenge in India due to rapid urbanization, population growth, and changing consumption patterns. The country generates approximately 150,000 metric tonnes of municipal solid waste daily, with improper disposal leading to environmental degradation, water contamination, and public health hazards. The major challenges include inadequate infrastructure, low levels of waste segregation, lack of public awareness, and financial constraints in implementing waste management systems. Informal waste pickers play a crucial role, yet they remain unrecognized and unregulated.



The Indian government has undertaken several initiatives to address these issues. The **Swachh Bharat Mission (SBM-U 2.0)** aims to create "Garbage-Free Cities" through improved waste collection, material recovery facilities, and waste-to-energy plants. The **Solid Waste Management Rules, 2016**, mandate source segregation of waste, composting of biodegradable waste, and scientific landfill management. The **Plastic Waste Management Rules, 2016**, introduced **Extended Producer Responsibility (EPR)**, requiring manufacturers to collect and recycle plastic waste.

Technological advancements have also played a role in waste management. CSIR and IITs have developed solutions such as biogas generation, plastic waste recycling into tiles, and high-quality plasto-fuels from mixed plastic waste. Decentralized waste management models, such as bio-methanation plants and eco-friendly recycling techniques, have shown promise. Despite these efforts, enforcement remains weak due to lack of coordination among stakeholders and limited funding.

For effective SWM, India must strengthen enforcement, promote waste-to-energy solutions, integrate the informal sector, and enhance public participation. A combination of technology, policy implementation, and behavioural change is essential to ensure sustainable waste management and environmental conservation in the long run.

**Topic : India-China Relations****Relevance :** GS Paper 2 International Relations**Source :** The Hindu**Context :**

India-China relations have been a blend of cooperation and conflict, influenced by historical ties, border disputes, economic engagements, and geopolitical considerations. As two of the world's most populous nations and emerging economic powerhouses, their relationship significantly impacts global affairs.

## Xi Jinping calls for 'elephant-dragon duet' on 75th anniversary of ties between India, China

Dinakar Peri

NEW DELHI

Commemorating the 75th anniversary of India-China bilateral relations, Chinese President Xi Jinping in a congratulatory message to President Droupadi Murmu on Tuesday said the two countries should "realise a cooperative *pas de deux* of the dragon and the elephant", which completely serves the fundamental interests of the two countries and peoples.

Ms. Murmu, in her message, said that "stable, predictable and amicable" bilateral relations will bring benefits to both nations and the world.

Later in the day, speak-



Vikram Misri and Xu Feihong at an event organised by the Chinese Embassy in New Delhi on Tuesday. DINAKAR PERI

ing at a commemorative event organised by the Chinese Embassy, Foreign Secretary Vikram Misri said it is "our wish and desire" to use this occasion as an opportunity to "rebuild" India-China relations.

Chinese envoy Xu Feihong said in his speech that Mr. Xi emphasised that both sides should view and handle China-India relations from a "strategic and long-term perspective, and seek ways for neighbouring major countries to get along in peaceful coex-

istence, mutual trust and mutual benefit as well as common development".

Mr. Misri, who has served as India's envoy in Beijing, said the bilateral relationship is an important one as two large neighbours in an important part of the world, and the stable ties between the two countries would contribute to humanity as a whole. In this regard, he said the durable basis for rebuilding the ties is the three-point pillar of "mutual respect, mutual sensitivity and mutual interests".

"The path forward maybe a difficult one, but it is one that we are prepared to work. And it is on the basis of these steps that we have already taken in the

last five months that we have seen promising beginnings, which we should turn into tangible benefit for the people of our two countries," he said.

Mr. Xi termed India and China "ancient civilisations, major developing countries and important members of the Global South", and noted that both countries are at a critical stage in their respective modernisation drive.

According to the envoy, Mr. Xi expressed his readiness to work with Ms. Murmu to promote strategic mutual trust, deepen communication and "coordination on major international affairs, jointly safeguard peace and tranquility" in border regions.

**Historical Prominence :**

- **Ancient Civilizational Ties:** India and China share a history of cultural and trade exchanges, with Buddhism playing a crucial role in their early interactions.
- **Colonial Period:** Both nations experienced Western colonial pressures, which shaped their modern nationalistic movements.
- **Post-Independence Relations:** India was among the first non-socialist countries to recognize the People's Republic of China in 1950.

**Key Phases in India-China Relations****(A) The Early Years (1950s-1962)**

- **Panchsheel Agreement (1954):** Based on five principles of peaceful coexistence, this agreement marked a positive start.
- **Sino-Indian War (1962):** A turning point in bilateral ties, leading to territorial disputes over Aksai Chin and Arunachal Pradesh.

**(B) The Normalization Period (1976-1990s)**

- Diplomatic ties were restored in 1976.
- Prime Minister Rajiv Gandhi's 1988 visit to China marked a significant step in normalizing relations.

## China-India ties across the past and into the future

Yesterday, April 1, was the 75th anniversary of the establishment of diplomatic relations between China and India. Despite the ups and downs, China-India relations have always surged forward like the Yangtze and the Ganges. Looking back at this extraordinary journey, there are four inspirational factors embedded therein that are worth drawing upon.

### Leaders and their guidance

First, the strategic guidance of our leaders as the "anchor". Over the past 75 years, the leaders of the two countries have consistently steered the relationship at critical historical junctures. In 1950, Chairman Mao Zedong and Prime Minister Jawaharlal Nehru made the historic decision of establishing diplomatic ties – India was the first non-socialist country to have diplomatic relations with China. In 1988, Prime Minister Rajiv Gandhi visited China, and the two sides agreed to "look forward", initiating the normalisation process of bilateral relations. Since 2013, President Xi Jinping and Prime Minister Narendra Modi carried out "hometown diplomacy" and two informal meetings, which propelled relations into a period of rapid development. Last October, the leaders met in Kazan, and opened a new chapter in relations.

Second, friendly exchanges and cooperation form the "foundational fabric" of China-India relations. Looking back through history, our two civilizations have flourished like twin lotuses, interconnected and mutually illuminating. Our two peoples have empathised with and supported each other in the struggle for national independence and liberation. Rabindranath Tagore and Dr. Kotnis have become timeless emblems of the China-India friendship. Since the turn of the century, China and India have forged a strategic and cooperative partnership for peace and prosperity. Under the important frameworks, nearly 50 dialogue mechanisms have been established at all levels and in various fields. Bilateral trade volume has risen from less than \$3 billion (2009) to \$38.5 (2024). Cooperation in culture, education, tourism and other fields has expanded continuously.

Third, bridging differences through dialogue stands as the "one and only key" of China-India relations. As Prime Minister Modi has said, when two neighbouring countries exist, occasional disagreements are bound to happen. Even within a family, not everything is always perfect. But our focus is to ensure that these differences do not turn into disputes. As two ancient civilisations, China and India both have the wisdom and the capacity to resolve differences through dialogue. Faced with the boundary question left over from



Xu Feihong  
is the Chinese  
Ambassador to India

history, they have established communication channels such as the Special Representative Mechanism on the China-India Boundary Question, and strive to seek a proper solution. At the end of last year, the two sides pushed the border situation back to one of tranquillity through intensive dialogue.

Fourth, working for the future of the world is the "important mission" of relations. President Xi Jinping once said, if China and India speak with one voice, the whole world will listen; and if we join hands, the whole world will pay attention. Historically, the total economic volume of the two countries has long accounted for half of global GDP, making momentous contributions to human progress. After the establishment of diplomatic relations, China and India jointly advocated the Five Principles of Peaceful Coexistence, and promoted the independence and the unity of Asian and African countries. As vital members of multilateral mechanisms such as BRICS, the Shanghai Cooperation Organisation (SCO) and the G-20, China and India should take the common responsibilities of safeguarding the rights and the interests of developing countries, and upholding multilateralism.

### On the ground

As the only two major developing countries and representatives of emerging economies, China-India relations have become one of the world's most crucial bilateral relations. The sound and stable development of bilateral relations serves the fundamental interests of the two peoples, meets the common aspiration of regional countries, and is conducive to world peace, development and prosperity.

Recently, China and India have implemented the important consensus reached by the leaders of the two countries. The two Foreign Ministers have met several times on multilateral occasions. The 23rd Special Representatives' meeting on the China-India Boundary Question and the Vice Minister-Foreign Secretary Dialogue have been held successfully, reaching many points of consensus. The two sides maintain communications on issues of mutual concern. There is a good momentum to bilateral economic and trade cooperation. People-to-people exchanges are increasing. In the first quarter of this year, the Chinese Embassy and Consulate-Generals in India have issued over 70,000 visas to Indian citizens. These figures fully demonstrate the strong motivation for exchanges and cooperation between the two countries.

It is the common will of the two peoples and the unstoppable tide of history to advance China-India friendship and cooperation. The

"dragon-elephant tango" is the only right choice for both sides. We should adhere to the important consensus reached by the two leaders, and forge a right path for the two neighbouring major countries to coexist in harmony and develop hand in hand.

### Steps for Beijing and New Delhi to take

First, we should build a healthy and stable relationship. Both sides should adhere to the strategic judgment made by the two leaders that "China and India are partners rather than rivals, and [pursue] development opportunities rather than [set] threats to each other". We should uphold the principles of mutual respect, mutual understanding, mutual trust, mutual accommodation and mutual accomplishment. We should handle differences through dialogue, and never allow relations to be defined by the binary question, or let specific differences affect the overall picture of bilateral ties, so as to ensure that China-India relations always move along the track of sound development.

Second, we should develop a mutually beneficial relationship. Both China and India are at a critical stage of national development and revitalisation. It is our common goal to develop the economy and improve people's livelihood. China is actively promoting high-quality development and India is committed to realising the vision of a "Viksit Bharat 2047". We should strengthen the alignment of our development strategies, resume and promote exchanges and cooperation in various fields, and push forward the modernisation of the two countries.

Third, we should forge an internationally cooperative China-India relationship. As important members of the Global South, China and India have the responsibility to jointly safeguard the legitimate rights and the interests of developing countries. They should also promote an equal and orderly multipolar world and a universally beneficial and inclusive economic globalisation. As the rotating president of the SCO, China is willing to work with all parties including India to jointly hold a SCO summit, featuring friendship, solidarity and fruitful outcomes, and lead the SCO into a new stage of high-quality development featuring stronger solidarity, coordination, dynamism and productivity.

I believe that under the strategic guidance of the leaders of the two countries and with the joint efforts of people from all walks of life, China and India will move forward steadily along the path of jointly achieving national development and rejuvenation and promoting the building of a community with a shared future for mankind.

## (C) Growing Cooperation and Border Tensions (2000s-Present)

- **Economic Boom:** Bilateral trade surged, making China one of India's largest trading partners.
- **Border Standoff:** 2017 Doklam crisis and 2020 Galwan Valley clash strained relations.

## Aspects of India-China Relations

### (A) Economic Relations


- **Trade Volume:** Grew from less than \$3 billion in 2000 to over \$138 billion in 2024.
- **Trade Imbalance:** India has a trade deficit of over \$100 billion with China.
- **Technology and Investments:** Chinese companies have made significant investments in India's technology and startup sectors.

### (B) Border Disputes and Military Engagements

- **Line of Actual Control (LAC) Issues:** Frequent standoffs, including the recent 2020 Galwan Valley clash.
- **Military Dialogues:** Special Representative Mechanism on Border Issues established to prevent escalation.


### (C) Diplomatic and Strategic Engagements

- **BRICS, SCO, and G20 Cooperation:** Both countries collaborate on global economic and strategic platforms.
- **Himalayan Region Diplomacy:** Competing influence in Nepal, Bhutan, and Tibet.
- **India's 'Act East' vs China's Belt and Road Initiative (BRI):** Differing strategic approaches in Asia and beyond.




**Economic**

- ◆ Boost prosperity for 1/3<sup>rd</sup> of world's population
- ◆ \$100 billion + trade aiding key Industries
- ◆ Stabilizing supply chains




**Geopolitical & Strategic**

- ◆ As nuclear neighbors, prevents rivalry
- ◆ Boosts UN/WTO cooperation
- ◆ Strengthens global governance



**Energy & Water Security**

- ◆ Enables energy cooperation
- ◆ Technology Sharing
- ◆ Fair Brahmaputra water

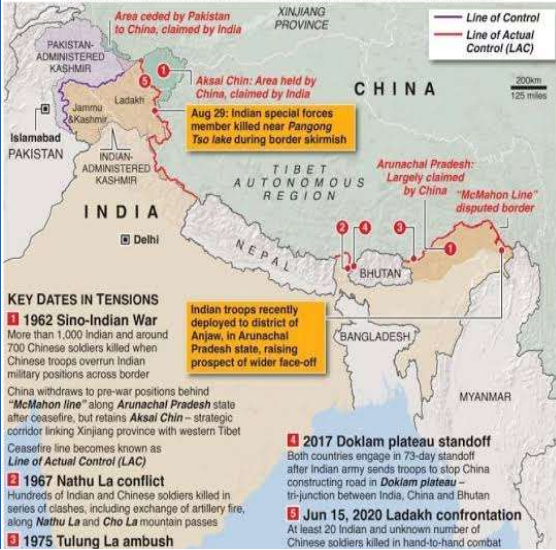


**Regional Stability & Peace**

- ◆ Curbs border clashes (e.g. Galwan 2020)
- ◆ Limits regional tensions
- ◆ Strengthens

**India and China face off again at border**

Indian and Chinese troops have clashed again along their disputed border, in a sign that the deadly tensions that erupted in June between the nuclear-armed rivals remain



**KEY DATES IN TENSIONS**

- 1 1962 Sino-Indian War**  
More than 1,000 Indian and around 700 Chinese soldiers killed when Chinese troops overrun Indian military positions across border
- 2 1967 Nathu La conflict**  
Hundreds of Indian and Chinese soldiers killed in series of clashes, including exchange of artillery fire, along Nathu La and Cho La mountain passes
- 3 1975 Tulung La ambush**  
China withdraws to pre-war positions behind "McMahon line" along Arunachal Pradesh state after ceasefire, but retains Aksai Chin – strategic corridor linking Xinjiang province with western Tibet. Ceasefire line becomes known as Line of Actual Control (LAC)
- 4 2017 Doklam plateau standoff**  
Both countries engage in 73-day standoff after Indian army sends troops to stop China constructing road in Doklam plateau – tri-junction between India, China and Bhutan
- 5 Jun 15, 2020 Ladakh confrontation**  
At least 20 Indian and unknown number of Chinese soldiers killed in hand-to-hand combat

**Aug 29: Indian special forces member killed near Pangong Tso lake during border skirmish**

## Recent Developments (2023-2025)

- **75th Anniversary of Diplomatic Relations (2025):** Marked by discussions on improving bilateral ties.
- **Trade and Investment:** Despite political tensions, trade between the two nations remains strong.
- **Border Talks:** The 23rd Special Representatives' meeting on border issues emphasized de-escalation.
- **Diplomatic Engagements:** Foreign ministers met multiple times in 2024-2025, aiming for mutual economic and security cooperation.
- **Security and Defense:** India remains cautious regarding China's growing influence in the Indian Ocean and its ties with Pakistan.

## Future Prospects and Challenges

### (A) Areas of Cooperation

- **Technology and Innovation:** Expanding AI, green energy, and pharmaceutical collaborations.
- **Regional Stability:** Addressing mutual concerns about global security.
- **Multilateral Engagements:** Strengthening partnerships in BRICS and SCO.

### (B) Challenges Ahead

- **Border Uncertainties:** Managing LAC tensions and ensuring peace.
- **Trade Deficit:** Addressing India's economic concerns with China.
- **Geopolitical Rivalry:** Navigating strategic differences in South Asia and the Indo-Pacific.

## EXPLAINED FOREIGN POLICY &amp; STRATEGY

# China-India state of play

Both countries are moving to repair ties. For Beijing, Modi-Xi meeting last month signalled a 'restart' of the relationship damaged by the border standoff. India is more cautious — de-escalation will be a key next step



SHUBHAJIT ROY

"IF YOU and I don't have trust, then the countries cannot have trust," a senior Chinese government official told *The Indian Express* in Beijing last week.

The official was referring to the trust deficit between India and China over the last four-and-a-half years of the border standoff in Ladakh.

This correspondent was part of an Indian media delegation that visited China at the invitation of the Chinese government. This was the first media delegation to visit the country since 2019 — after the Covid-19 pandemic and the border standoff.

## Open for business

The message from several meetings with Chinese officials, members of the business community, and scholars and analysts in state-run think tanks and media organisations was clear: China wanted to move on in the bilateral relationship, and was open for business.

Senior Chinese officials mentioned the "chemistry" between President Xi Jinping and Prime Minister Narendra Modi, which they said was evident during the meeting of the two leaders on the sidelines of the BRICS summit in Kazan, Russia on October 21.

The officials said the two sides were discussing ways to bring the ties to "normal" — as it was before the face-off started in April-May 2020 along the Line of Actual Control (LAC).

The officials outlined their "wish-list": resumption of direct flights between the countries, easing of visa curbs on Chinese nationals including diplomats and scholars, lifting of the ban on Chinese mobile apps, letting Chinese journalists report from India, allowing more Indian movies in Chinese theatres, etc.

## Thaw after Galwan

All these restrictions and curbs were put after the bloody clashes in Galwan in June 2020, in which 20 Indian soldiers including a Colonel-rank officer and at least four Chinese soldiers were killed.

The Galwan clash was the deadliest along the border since 1967, and cast a dark shadow on political ties. After many rounds



External Affairs Minister S Jaishankar with Chinese Foreign Minister Wang Yi in Rio earlier this week. © AP Photo/Splash

of discussions between the two countries, India announced a breakthrough on October 21 this year — and soldiers from both sides started patrols along the LAC.

The agreement on "patrolling arrangements" was an important beginning to the three-step process of de-escalation, de-induction of troops. An important meeting took place this week to take the process forward.

On September 18, External Affairs Minister S Jaishankar met Chinese Foreign Minister Wang Yi on the sidelines of the G20 leaders' summit in Rio de Janeiro in Brazil. The two Ministers discussed the "next steps in India-China relations", according to the official statement issued by India.

## Views from capitals

The Indian and Chinese statements after the Jaishankar-Wang meeting open a window to how New Delhi and Beijing are viewing the situation, and the way forward.

The Indian statement said that the "Ministers recognised that the disengagement in our border areas had contributed to the maintenance of peace and tranquillity. The discussions focused on the next steps in India-China relations. It was agreed that a meeting of the Special Representatives and of the Foreign Secretary-Vice Minister mechanisms will take place soon."

The Chinese statement was more enthusiastic: "Wang Yi said President Xi Jinping and Prime Minister Narendra Modi held a successful meeting in Kazan recently, and China-India relations have been restarted and re-launched, which is in line with the fundamental interests of the two peoples, the expectations of countries in the global South, and the right direction of history."

The Indian statement was in sync with the way New Delhi has framed the state of bilateral ties — that the situation at the border is a precondition to the next steps.

China, however, has taken it for granted by describing the Modi-Xi meeting as a "restart and re-launch".

## In step — and not

On the next steps forward, there are both convergences and divergences.

The Indian statement said "among steps discussed were the resumption of the Kailash Mansarovar Yatra pilgrimage, data sharing on trans-border rivers, direct flights between India and China and media exchanges."

The Chinese statement said: "We should strive to make practical progress as soon as possible in the resumption of direct flights, mutual assignment of journalists and visa facilitation. Next year will mark the 75th anniversary of the establishment of diplomatic relations between China and India, and the

two sides should plan commemorative activities and encourage exchanges and visits in all fields and at all levels to enhance understanding and mutual trust."

■ Both sides have talked about the resumption of direct flights and media exchanges.

The Indian Express flew to Beijing via Hong Kong. Pre-pandemic, Chinese airlines such as Air China and China Southern operated direct flights to India.

There is one Indian journalist in Beijing currently; there are no Chinese reporters in Delhi. Journalists of both countries had to leave in recent years after their visas were not renewed. There is a strong feeling that journalists from each country must be allowed to report freely from the other.

■ However, India did not mention the 75th anniversary events, and China did not talk about the Kailash Mansarovar Yatra and river data-sharing.

Despite the divergences, it is important that India — which had taken a very strong line about not normalising ties until the border situation improves — has agreed to talk about the next steps. While officials and analysts in Beijing have been advocating the resumption of ties, India has been guarded and cautious, mindful of hardened public opinion over the last four-and-a-half years.

It is not clear yet when the next meeting of the Special Representatives and of the Foreign Secretary-Vice Minister mechanism will take place. The last 5th-level talks took place in December 2019.

## Next: de-escalation

On Thursday, in the most recent indication that India and China were moving to repair ties, Defence Minister Rajendra Singh and his Chinese counterpart Dong Jun met in Vietnam. Lao PDR, on the sidelines of the 11th ASEAN Defence Ministers' Meeting-Plus.

Singh said the two countries needed to "focus on cooperation rather than conflict", and "emphasised and looked forward to greater trust and confidence building between the two sides through de-escalation".

With 50,000 to 60,000 troops deployed on either side of the LAC in eastern Ladakh, de-escalation is an important next step. The two sides completed the process of disengagement at the two friction points ahead of Divali, Indian troops have resumed patrols.

The Chinese official in Beijing told *The Indian Express*, "If we don't progress, we aggress." The Indian establishment is cautiously watching the border situation. De-escalation will be a key marker for the next steps.

India-China relations are at a crucial juncture. While historical and border disputes persist, economic interdependence and diplomatic efforts continue to shape the trajectory. The future of this relationship will depend on mutual respect, dialogue, and strategic collaboration in a rapidly changing global order.

## Prelims Practice Question:

### Consider the following statements regarding India-China relations:

1. India was the first non-socialist country to establish diplomatic relations with China in 1950.
2. The Panchsheel Agreement between India and China was signed in 1962.
3. The trade volume between India and China has remained below \$50 billion in the last decade.
4. The Special Representatives Mechanism was established to resolve the boundary dispute between India and China.

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

- (a) 1 and 4 only
- (b) 2 and 3 only
- (c) 1, 3, and 4 only
- (d) 1, 2, and 4 only

**Answer:**

**Correct option: (a) 1 and 4 only**

**Explanation:**

1. **Correct** – India was the first non-socialist country to establish diplomatic ties with China in 1950.
2. **Incorrect** – The Panchsheel Agreement was signed in **1954**, not 1962.
3. **Incorrect** – Trade between India and China has consistently crossed **\$50 billion**, and in recent years, it has even surpassed **\$100 billion**.
4. **Correct** – The Special Representatives Mechanism was established in **2003** to resolve the boundary dispute.

**Mains Model Question:**

**Discuss the evolution of India-China relations over the past 75 years. What are the key areas of cooperation and conflict, and how can both nations work towards a stable and constructive partnership?**

India and China share a complex and multifaceted relationship that has evolved significantly over the past 75 years. The establishment of diplomatic relations in 1950 marked the beginning of formal engagement between the two Asian giants. The early years were characterized by cooperation, with both nations supporting anti-colonial movements and promoting the Five Principles of Peaceful Coexistence (Panchsheel) in 1954. However, the 1962 border war led to a significant downturn in relations, creating long-standing mistrust.

In the post-Cold War period, both countries worked towards normalizing relations through high-level visits and agreements, including the 1988 Rajiv Gandhi visit that initiated a new phase of engagement. Economic ties strengthened, with bilateral trade surpassing \$100 billion in recent years. Despite economic interdependence, border tensions, particularly in Doklam (2017) and Galwan (2020), have continued to strain ties. The unresolved boundary dispute, trade imbalances, and China's growing influence in South Asia remain key points of contention.



EXPLAINED STRATEGY &amp; DIPLOMACY

# Engaging China in Modi 3.0

The PM and Xi will be in Astana for the SCO leaders' summit early next month. Signals on ties over the last several weeks have been nuanced, and an Australian recalibration suggests a way for realistic engagement



SHUBHAJIT ROY

IT IS four years this week since the Galwan clashes of June 15, 2020 that rocked India-China ties, and the border standoff is yet to be resolved. About 50,000 to 60,000 troops are still deployed on each side of the border. Managing the relationship with China is the most pressing challenge for the Narendra Modi government in its third term.

The Prime Minister is likely to be in the same place at the same time as China's President Xi Jinping during the leaders' summit of the Shanghai Cooperation Organisation (SCO) in Astana, the capital of Kazakhstan, on July 3-4. It remains to be seen if a meeting takes place between the two leaders, and whether it leads to a breakthrough.

Developments over the past few weeks provide some context for the Astana summit.

## Two interviews and hope

IN APRIL, Prime Minister Modi told *Newsweek* magazine during an interview: "For India, the relationship with China is important and significant. It is my belief that we need to urgently address the prolonged situation on our borders so that the abnormality in our bilateral interactions can be put behind us."

"Stable and peaceful relations between India and China are important for not just our two countries but the entire region and world," Modi said. "I hope and believe that through positive and constructive bilateral engagement at the diplomatic and military levels, we will be able to restore and sustain peace and tranquility on our borders."

China reacted positively to the Prime Minister's framing of the border dispute.

The Chinese foreign ministry spokesperson said the relationship between India and China was "about more than the boundary situation". The two countries "maintain close communication through diplomatic and military channels on handling issues related to the border situation and have made positive progress", she said.

"We hope that India will work with China, approach the bilateral relations from a strategic height and long-term perspective, keep building trust and engaging in dialogue and cooperation, and seek to handle differences appropriately to put the relationship on a sound and stable track," the spokesperson said.

IN MAY, External Affairs Minister S Jaishankar expressed hope for resolving the remaining issues with China amid the bor-



Prime Minister Narendra Modi with former Speaker of the US House of Representatives Nancy Pelosi and other members of a Congressional delegation in New Delhi on Thursday. The delegation had met the Dalai Lama earlier. PTI

der standoff in Ladakh. These outstanding issues primarily revolved around "patrolling rights" and "patrolling abilities". Jaishankar said in an interview to PTI.

Asked about the likely timeline for resolving these issues, particularly in the light of Modi's remarks to *Newsweek*, Jaishankar said the Prime Minister had provided a "big picture" perspective.

Limiting the dispute to "patrolling rights" and "patrolling abilities" was seen as a nuancing of the Indian position, pivoting away from the earlier stance of "disengagement" and "de-escalation".

## Taiwan, Tibet, and leverage

While these instances built hope for a resolution after the Lok Sabha election, other developments spotlighted persisting complications.

FIRST, an exchange of messages between the Prime Minister and Taiwan's President Lai Ching-te on the social media platform X — which sources said was the first public interaction between the two leaders — angered the Chinese, who saw this as a provocation.

On June 5, the President, also known as William Lai, congratulated Modi on returning to power, and said he looked forward to "enhancing the fast-growing Taiwan-India partnership" and "expanding collaboration on trade, technology and other sectors to contribute to peace & prosperity in the Indo-Pacific". Modi thanked Lai and expressed hope for closer ties and a mutually beneficial economic and technological partnership.

China protested "all forms of official interactions between the Taiwan authorities and countries having diplomatic relations with China", and asked India not to deviate from its commitment to the "One China" policy.

India and Taiwan do not have formal

diplomatic ties, and have instead focused on commerce, culture, and education. The profile of the relationship, now in its third decade, has been deliberately kept low owing to Chinese sensitivities.

SECOND, a seven-member bipartisan delegation of the United States Congress met the Dalai Lama in Dharamsala on Wednesday, where former House Speaker Nancy Pelosi declared that while the Tibetan spiritual leader's "legacy will live forever", Xi will "be gone and nobody will give [him] credit for anything".

A day later, on Thursday, the delegation called on Prime Minister Narendra Modi, External Affairs Minister S Jaishankar, and National Security Advisor Ajit Doval.

The Chinese reacted sharply, and "urged" the US to "adhere to its commitments of recognizing Xizang as part of China and not supporting 'Xizang independence'". China refers to Tibet as Xizang.

Pelosi had ignored warnings from Beijing to visit Taiwan in August 2022. On June 12, the House of Representatives passed the bipartisan Promoting a Resolution to the Tibet-China Dispute Act, which had already cleared the Senate.

## The upshot and the outlook

How should these developments be read? Some analysts believe that while India has clearly shown its intent on resolving the border situation through the interviews given by the PM and Jaishankar, it has also sent a signal through Pelosi's visit to the Dalai Lama ahead of a possible meeting between Modi and Xi in Astana.

Some others believe that while New Delhi had initially wanted to resolve the border situation after the Lok Sabha election, it changed its mind after the NDA got a weaker-than-ex-

pected mandate — with the government wary of criticism that any reconciliation that was not on India's terms might draw.

Stable borders are key for the government to focus on its agenda for economic growth, especially after the election results have shown that the BJP suffered due to the lack of jobs and rise in prices. The ongoing engagement between Australia and China offers insight that is relevant to India as well.

Australia-China ties suffered a setback under the Centre-right governments of Malcolm Turnbull and Scott Morrison. The change in government muted the high-decibel rhetoric from leaders on the right, and the Centre-left Prime Minister Anthony Albanese is seen to be engaging with China's leadership at the highest level, while not compromising on Australia's core interests.

On the first visit by a Chinese Premier to Australia in seven years last week, Li Qiang said he had held "candid, in-depth and fruitful" talks with Albanese, and the two countries had agreed to manage their differences and disagreements properly.

The last two meetings between Modi and Xi — on the sidelines of the G20 leaders' meeting in Bali in November 2022 and on the margins of the BRICS summit in South Africa in August 2023 — did not produce positive outcomes. Bilateral ties remain hostage to the border dispute, and there has been hardly any political movement. Economic ties have sustained — bilateral trade touched a record \$ 136 billion in 2023 — but a heightened awareness of the security threat perception from China has led to a serious effort at decoupling by the Indian establishment.

The Australian model holds possibilities, but several things, including Xi's personal political will, must fall in place.

However, there are areas of cooperation, including multilateral forums like BRICS, the Shanghai Cooperation Organisation (SCO), and climate change negotiations. Both countries also share interests in global governance reforms and the Global South's development agenda. Moving forward, sustained dialogue, confidence-building measures along the border, and expanding economic and cultural ties can help foster stability. A pragmatic approach that prioritizes mutual respect, economic collaboration, and diplomatic engagement is essential for a constructive India-China relationship that benefits both nations and contributes to regional stability.