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ANALYSIS

Topics

Detailed Analysis for Prelims & Mains:

1. The future of India’s chip industry - Pg 10
2. The need for strengthening India’s EV supply chain - Pg 10
3. The ‘harvest’ China wants is one India cannot afford - Pg 8
4. No role for 3rd parties between India, Nepal - Pg 12

Prelims:

1. RudraM-II - Pg 12
2. Simplipal & Satkosia Tiger Reserves - Pg 14
3. Mega Science Vision-2035 - Pg 14
4. President of UNGA - Pg 16


ELEVATE BATCH
7-9 AM
LIVE
1ST JUNE
3-5 PM
Use Code
IASENGLISH
Modern History
Geography

1. Pg 10 – GS II (IR) & GS III (Economy and S&T)

The future of India's chip industry

A new NITI Aayog report says India's semiconductor ecosystem is not yet equipped to fully meet domestic demand, while stressing the need to strengthen local manufacturing, as geopolitical pressures could potentially disrupt the electronics supply chain

EXPLAINER

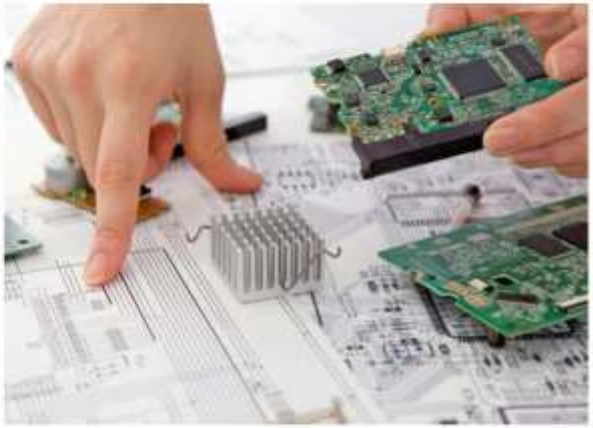
Aroon Deep

NITI Aayog's Frontier Tech Hub released a report last week that had two main messages: first, that India faces steep challenges in developing world-class semiconductor manufacturing capabilities, and second, that national interest necessitated pursuing this field doggedly regardless of those difficulties.

The Union government has made chipmaking a priority, since semiconductors are a part of nearly all electronics, from consumer gadgets to defence gear. Yet, India does not have a single fabrication unit, with the first expected to open in Dholera, Gujarat by 2028, with a total of ten in various stages of development. Multiple semiconductor packaging and testing facilities have been generously subsidised and supported by the Union government (as well as some State governments), through initiatives like the India Semiconductor Mission (ISM).

The ISM is a ₹76,000 crore corpus, and it is almost fully earmarked to projects across semiconductor fabs, incentives for component manufacturing, and bulk subscriptions to industry-grade semiconductor design applications for students and academia. While the most cutting edge and ambitious projects – fabs – have received capital subsidies of upwards of 50%, other projects have received production- or output-linked incentives.

The report, titled 'Future of India's



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was still a need to manufacture locally, as geopolitical pressures like a disaster in Taiwan could massively disrupt the electronics supply chain. "As many semiconductor parts used in defence systems are produced outside India, deploying them in our aerospace and defence programmes is increasing threats to national security," the report adds.

The sector "requires sustained, mission-mode commitment over a decade or more," the report said.

Fab gestation

The report points to several challenges in this indigenisation process, not least of

before chips reach the market." Developing talent to work in these fabs is also, as a result, time consuming, the report says.

The report urges the government to work on "building sovereign design and research capabilities, R&D excellence and harnessing agentic AI for semiconductor engineering," since "building deep capabilities" in materials sciences and silicon designing will "move India from a services-led design base to a creator of differentiated IP, architectures and integration technologies that define next generation systems."

investors, the report warns. This translates to a shift away from directing public funds towards frontier chips, whose transistors are the smallest – 3 to 7 nanometres – and towards "mature, advanced-aligned with strategic relevance–as well as compound nodes," the report says.

The report is key in understanding the potential scope of ISM 2.0, since its ambition is defined and largely stays out of big-ticket frontier fab projects. It advocates, for instance, "selective depth, capital efficiency and system-level differentiation, rather than attempting to replicate the full global manufacturing spectrum."

For instance, packaging, which is among the last steps of a chipmaking process, and less expensive and complex than fabrication, is identified as a "core production pillar, not a downstream activity" in the report. The report calls for "[r]apid import substitution in high volume domestic segments".

Trusted partners

The report implies that China is an adversary in chipmaking in spite of the recent thaw in relations. In a list of "priority partners," the report highlights the U.S., Japan, the European Union, and South Korea as partners with whom to work to get "access to critical tools, equipment servicing and lifecycle support," and to take advantage of "India's market scale, talent base and packaging capacity."

"With sustained commitment and strategic clarity, India can build a competitive semiconductor ecosystem that strengthens economic resilience and

THE GIST

- The Union government has made semiconductor manufacturing a priority, but India does not yet have a fabrication unit. A recent report by NITI Aayog's Frontier Tech Hub underscores the need to bolster local manufacturing.
- The report urges the government to work on 'building sovereign design and research capabilities, R&D excellence and harnessing agentic AI for semiconductor engineering'.

NITI Aayog releases "Future of India's Semiconductor Industry" Roadmap

Charts India's path from high import dependence to becoming an indispensable global semiconductor player by 2035

Posted On: 29 MAY 2026 6:20PM by PIB Delhi

NITI Aayog's Frontier Tech Hub released a report last week that had two main messages: first, that India faces steep challenges in developing world-class semiconductor manufacturing capabilities, and second, that national interest necessitated pursuing this field doggedly regardless of those difficulties.

NITI Frontier Tech Hub

- It was created as an action tank for Viksit Bharat to anticipate emerging mega-technology shifts and shape India's preparedness to unlock their potential for faster economic growth, inclusive societal outcomes, and strategic resilience—advancing the country's journey towards becoming a frontier-technology nation.

- Collaborating with over 100 experts from government, industry, and academia, the Hub is shaping a 10-year roadmap across critical frontier technologies - AI, Quantum, and Biotechnology - to harness them for economic growth, societal outcomes, and strategic resilience.

The Union government has made chipmaking a priority, since semiconductors are a part of nearly all electronics, from consumer gadgets to defence gear. Yet, India does not have a single fabrication unit, with the first expected to open in Dholera, Gujarat by 2028, with a total of ten in various stages of development. Multiple semiconductor packaging and testing facilities have been generously subsidised and supported by the Union government (as well as some State governments), through initiatives like the India Semiconductor Mission (ISM).

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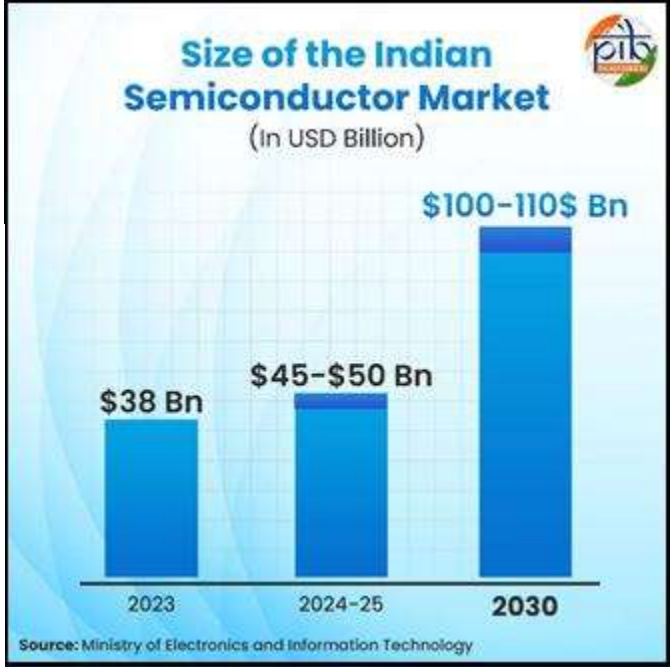
The **India Semiconductor Mission (ISM)** is a specialized, autonomous business division within the Digital India Corporation under the Ministry of Electronics and IT (MeitY). It serves as the nodal agency driving India's long-term strategy to establish a sustainable, world-class semiconductor fabrication, packaging, and design ecosystem. PIB +3

Core Schemes & Fiscal Incentives

The Union Government offers massive **50% fiscal support** on a pari-passu basis for approved project costs across multiple segments: India Semiconductor Mission (ISM) +3

- **Semiconductor Fabs**: Encouraging large investments to set up Silicon CMOS-based wafer fabrication plants for logic, memory, and analog chips. India Semiconductor Mission (ISM) +1
- **Display Fabs**: Providing massive capital subsidies for establishing domestic advanced display manufacturing units. India Semiconductor Mission (ISM)
- **Compound Semiconductors & Packaging**: Supporting Compound Semiconductors, Silicon Photonics, Sensors, and advanced packaging via Semiconductor ATMP / OSAT facilities.
- **Design Linked Incentive (DLI) Scheme**: Nurturing a fabless startup ecosystem by providing financial incentives and infrastructure support for chipsets, Integrated Circuits (ICs), and Systems on Chips (SoCs). India Semiconductor Mission (ISM) +1

By **2029**, India is expected to achieve the capability to design and manufacture chips required for nearly **70–75 per cent of domestic applications**. Advancing on this foundation, the next phase under **Semicon 2.0** will focus on advanced manufacturing, with a clearly defined roadmap to achieve **3-nanometre and 2-nanometre technology nodes**. By **2035**, India aims to be among the **top semiconductor nations globally**.



The report, titled 'Future of India's Semiconductor Industry', reiterates that these are yet early days for the semiconductor industry, since even chips used in domestic electronics assembly operations are largely sourced from outside the country. "India's local ecosystem is not ready to fully meet domestic demand for semiconductors," the report said. But it insisted that there was still a need to manufacture locally, as geopolitical pressures like a disaster in Taiwan could massively disrupt the electronics supply chain. "As many semiconductor parts used in defence systems are produced outside India, deploying them in our aerospace and defence programmes is increasing threats to national security," the report adds.

Fab gestation

The report points to several challenges in this indigenisation process, not least of which is the time involved. "Typically, fab units require four to five years before commencing production," the report points out. "During the gestation phase, these units need to invest in purchasing more than 50 specialised equipment from global players. Even after the production is over, processes like yield optimisation and reliability test take several quarters before chips reach the market." Developing talent to work in these fabs is also, as a result, time consuming, the report says.

Capital investment

While the details on the second phase of the India Semiconductor Mission are yet to be revealed, the report pegs the necessary capital expenditure from the state at $45–60 billion over a period of ten years. This amount should, however, be spent on projects where the risk is less and "bankability" can assure returns to investors, the report warns. This translates to a shift away from directing public funds towards frontier chips, whose transistors are the smallest — 3 to 7 nanometres — and towards "mature, advanced—aligned with strategic relevance—as well as compound nodes," the report says.

The report is key in understanding the potential scope of ISM 2.0, since its ambition is defined and largely stays out of big-ticket frontier fab projects. It advocates, for instance, "selective depth, capital efficiency and system-level differentiation, rather than attempting to replicate the full global manufacturing spectrum."

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Mains Practice Question

Q. Critically evaluate ‘Future of India’s Semiconductor Industry’ report brought out recently by NITI Aayog’s Frontier Tech Hub. (250 words; 15 marks)

2. Pg 10 – GS III (Economy and E&E)

The need for strengthening India's EV supply chains

As EV adoption gathers pace, there is a greater need to focus on reducing vulnerability to external shocks

Jaideep Saraswat
Akanksha Golchha

India's electrification of road transport has entered a decisive growth phase. Around 2.5 million vehicles were sold in FY26, a significant increase from FY25. This momentum reflects the effectiveness of policy support from both the Centre and the States, including upfront purchase incentives, road tax exemptions and other demand-side interventions. These measures helped create the initial market, reduce consumer hesitation, and establish electric vehicles (EVs) as a credible and tested technology.

Import dependence

The next phase of EV adoption demands a different policy and industrial logic. As the sector scales, India is moving away from imported fossil fuels, only to find itself becoming increasingly dependent on imported lithium-ion batteries. The challenge is no longer how quickly India can electrify transport, but how it can do so without creating a new strategic vulnerability. EV growth must now be judged by three additional metrics: supply chain resilience, strategic autonomy, and long-term sustainability.

India's domestic cell manufacturing is still far below the scale needed to alter import dependence meaningfully. Under the ACC Battery Production Linked Incentive scheme, 40 GWh of capacity has been awarded, but only about 1 GWh has been installed so far. Meanwhile, passenger EVs sold in India are sourcing batteries from 14 global manufacturers, with 7,987 MWh imported in 2025. Of this, a significant share came from Chinese manufacturers, highlighting that increasing EV sales are tightly correlated with increasing imports from China.

This concentration creates a structural risk for Indian EV OEMs (original equipment manufacturers). Battery supply is increasingly exposed to a single-country ecosystem that is shaped by policy, geopolitics, and industrial strategy outside India's control. Several developments in China are influencing pricing and availability, like tighter technology restrictions, prioritisation of domestic demand, withdrawal of VAT exemptions on battery exports, and more. Additionally, the West Asia conflict has compounded the pressure through higher raw material costs, elevated manufacturing expenses in China, and rising transport and risk premiums.

The consequences extend beyond OEM balance sheets. Battery inflation delays price parity with internal combustion engine (ICE) vehicles and slows the shift from early adopters to mass-market buyers. In a market as price-sensitive as India's, rising cell costs can confine EVs to premium segments and place national adoption targets at risk if the situation persists and OEMs are forced to pass on higher costs to consumers.

This requires a holistic situational assessment and identifying key interventions in the short to medium term. The near-term response must be pragmatic. Many OEMs already talk of a "China + 1" sourcing strategy, but actual supplier diversity varies widely by segment. Higher-end EVs are increasingly paired with non-Chinese NMC batteries, while cost-sensitive mass-market models continue to rely on cheaper Chinese LFP cells. True diversification, across suppliers, chemistries, and geographies, may raise costs initially; but it significantly lowers the risk of strategic disruption over time.

Product modifications

The cost shock should also drive product-level discipline. OEMs need to design EVs around efficiency, lighter architectures, more effective drivetrains, smarter software calibration, and battery right-sizing aligned with actual usage rather than aspirational range. India's market may ultimately reward lean, purpose-built electrification over oversized vehicles designed around imported battery economics. Software-defined battery platforms that support multiple chemistries without hardware redesign would further improve flexibility as the cell market evolves. Moreover, Indian manufacturers should begin type-testing vehicles across emerging chemistries, including sodium-ion batteries. Sodium-ion is not yet a full substitute for lithium-ion across all use cases, but it could serve as a meaningful hedge as production scales domestically, broadening the technology base and reducing dependence on any single chemistry or supplier.

Further, India's path forward lies in building a structured 'EV supply chain alliance' with trusted partners, one that spans minerals, manufacturing, technology, and standards. Such an alliance would distribute risk across geographies, deepen domestic capability over time, and ensure that no single external disruption can stall India's electrification agenda.

The EV transition is no longer straightforward and the recent disruptions underscore the need for a more resilient approach. India has already demonstrated that it can create demand for clean mobility. The next test is whether it can build the industrial depth to sustain that demand without becoming dependent on a single external bottleneck.

(Jaideep Saraswat is the Associate Director of the Clean Power, Electric Mobility & Emerging Technologies vertical at Vasudha Foundation. Akanksha Golchha is Senior Associate (non-resident) with the Chair on India & Emerging Asia Economics at Center for Strategic and International Studies.)

India's electrification of road transport has entered a decisive growth phase. Around 2.5 million vehicles were sold in FY26, a significant increase from FY25. This momentum reflects the effectiveness of policy support from both the Centre and the States, including upfront purchase incentives, road tax exemptions, registration charge waivers, and other demand-side interventions. These measures helped create the initial market, reduce consumer hesitation, and establish electric vehicles (EVs) as a credible and tested technology.

Import dependence

The next phase of EV adoption demands a different policy and industrial logic. As the sector scales, India is moving away from imported fossil fuels, only to find itself becoming increasingly dependent on imported lithium-ion batteries. That shift changes the core question. The challenge is no longer how quickly India can electrify transport, but how it can do so without creating a new strategic vulnerability. EV growth must now be judged by three additional metrics: supply chain resilience, strategic autonomy, and long-term sustainability.

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The EV transition is no longer straightforward and the recent disruptions underscore the need for a more resilient approach. India has already demonstrated that it can create demand for clean mobility. The next test is whether it can build the industrial depth to sustain that demand without becoming dependent on a single external bottleneck. The goal should not be merely to electrify faster, but to electrify intelligently, securely, and on terms that strengthen India's long-term strategic and economic autonomy.

Mains Practice Question

Q. As EV adoption gathers pace in India, there is a greater need to focus on reducing vulnerability to external shocks. Analyze. (250 words; 15 marks)

3. Pg 8 – GS II (IR) & GS III (Security)

The 'harvest' China wants is one India cannot afford

When Luo Zhaohui, then China's Ambassador to India, revived the idea of an "early harvest" in India-China boundary negotiations in 2017, India responded with scepticism. The proposal — to settle the Sikkim boundary in isolation from the three other sectors — was an asymmetric concession dressed up in the language of progress. India has resisted it. There is now a gnawing doubt as to whether it can hold that position. The trigger for this piece is a former border negotiator's concern that India might "stumble" into a damaging course of action under Chinese pressure and driven by the temptation to project contrived progress. Diplomacy that trades long-term strategic interests for short-term optics is self-defeating.

Ashok K. Kantha

Former Ambassador to China, Subhas Chandra Bose Chair Professor at International Relations, Chanakya University, and Distinguished Fellow with the Vivekananda International Foundation

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New Delhi must be cautious

The readout issued by the Ministry of External Affairs (MEA) on the 24th round of the Special Representatives' Dialogue on the Boundary Question between India and China (on August 19, 2025) between National Security Adviser Ajit Doval and Chinese Foreign Minister Wang Yi recorded India's agreement to "set up an Expert Group ... to explore an early harvest in boundary delimitation in the India-China border areas". China's own readout was more pointed: it used the term "demarcation" rather than "delimitation" and spoke of "launching boundary demarcation negotiations in sectors where conditions are ripe."

The MEA press release on the 35th Meeting of the Working Mechanism for Consultation and Coordination on India-China Border Affairs, held in Beijing on May 27, 2026, mentions that the two sides "discussed issues pertaining to delimitation, border management, mechanism building and cross-border cooperation" and "agreed to work together to make substantive preparation" for the next SRs' meeting. The reference to 'delimitation' is significant as it suggests follow-up discussions on the understanding "to explore Early Harvest in boundary delimitation".

The cornerstone of Special Representative negotiations is the Agreement on Political Parameters and Guiding Principles, signed on April 11, 2005. Article III explicitly envisages "a package settlement" covering all sectors of the India-China boundary. It establishes a three-step process: first political parameters, then a framework for a final settlement, then delineation and demarcation. Demarcation — placing physical markers on the ground — comes last, not first. China's proposal to begin demarcation in a single "ripe" sector inverts this sequence and, in effect, asks India to abandon the package architecture in exchange for the appearance of progress. India should decline.

Why does the package settlement matter so much? Because the four sectors of the India-China boundary are strategically interlinked, requiring give and take across sectors. It also guards against China extracting concessions sector by sector. An early harvest in Sikkim, where India holds comparative geographical advantage, would let Beijing bank a settlement on its preferred terms while leaving the other three sectors unresolved.

Diplomatic optics must not dictate India's boundary negotiations with China

The Sikkim stakes

The Sikkim Sector boundary is not, as sometimes claimed, a simple matter. Clashes at Nathu La and Cho La in 1967, with heavy casualties, showed how sharp these differences are. Article I of the 1890 Great Britain-China Convention identifies "Mount Gipmochi on the Bhutan frontier" as the starting point of the Sikkim-Tibet boundary, but it is preceded by an assertion that the boundary "shall be the crest of the mountain range separating the waters flowing into the Sikkim Teesta and its affluents from the waters flowing into the Tibetan Mochu". China reads the article as placing the trijunction at Gipmochi. India and Bhutan hold that the trijunction lies at Batang La, some 6.5 kilometres to the north, on the watershed — which is the operative geographical principle in Article I.

Zompelri (or Jampheri) Ridge adjoining Geymochen commands a direct view of the Siliguri Corridor, the narrow strip connecting mainland India to its northeastern States. Any settlement implicitly endorsing the Gipmochi trijunction would hand China a legal instrument to press its claim to the very edge of the Himalayas, exposing the Corridor. The Chinese objective is to deepen and widen its Chumbi Valley and increase pressure on India's most acute territorial vulnerability.

The Doklam dimension reinforces this concern. Since 2017, China has systematically consolidated its position in western Bhutan — building roads and military facilities, constructing villages including Pangda on the Amo Chu river, and developing routes to the Jampheri Ridge that bypass the 2017 Doklam standoff site. A Sikkim settlement would immediately be leveraged by Beijing to step up pressure on a vulnerable Bhutan to settle its boundary with China. India and China have agreed that trijunction points must be finalised in trilateral consultation with all countries concerned. Even if the trijunction point is left out, China could force Bhutan to settle the rest of the disputed boundary on its own terms and present India with a *fait accompli* in Doklam.

Since the Eastern Ladakh transgressions of 2020, China has pursued multiple pressure tracks simultaneously: military consolidation along the Line of Actual Control (LAC), steady resurrection of the "Zangnan" (South Tibet) narrative to describe Arunachal Pradesh, renaming of places in Arunachal Pradesh, and expansion of "border defence villages" close to India-China LAC.

The resumption of Special Representative talks is welcome, but dialogue must be conducted with strategic clarity, not under diplomatic pressure or for the optics of progress. Three principles should guide India's approach.

First, hold the 2005 Agreement's framework firm. The Expert Group agreed upon in August 2025 must not become a vehicle for an early harvest in Sikkim. Agreeing to "explore" is not a commitment to accept. India should reject a standalone Sikkim delimitation or demarcation exercise.

Second, make peace and tranquility on the LAC the non-negotiable condition of progress. China has periodically attempted to delink border management from the broader relationship; India has resisted this, and should continue to do so. Unilateral alterations to the LAC cannot be normalised. Indeed, the so-called "buffer zones" in Eastern Ladakh must not be allowed to persist.

Third, press for genuine political engagement on a comprehensive settlement. Decades of talks have shown that the respective narratives cannot be reconciled through legal arguments. The 2005 Agreement recognised this: it called for a political settlement that would "safeguard the vital interests of both countries" and set out principles such as the two sides "safeguarding] due interests of their settled populations in the border areas". Any breakthrough requires political will on both sides. India should press for meaningful boundary negotiations, not paper over the lack of progress with working groups. The test of China's seriousness will be whether it is prepared to engage on the framework for a comprehensive settlement — and whether it is prepared to hold the LAC stable while that engagement proceeds. Absent those conditions, the Special Representative process risks becoming what it has sometimes been before: a forum for managing appearances while China improves its position on the ground.

Stay the course

In boundary talks, China has a track-record of cherry-picking and resiling from formal commitments, as it did in the case of an explicit agreement to arrive at a common understanding of the LAC after exchanging maps showing the entire alignment. India must prevent the Agreement On the Political Parameters and Guiding Principles for the Settlement of the India-China Boundary Question from meeting a similar fate. If peace and tranquility on the LAC is the foundation for rebuilding India-China relations, the 2005 Agreement is the road map for resolving the boundary question. India has nothing to gain from an early harvest limited to Sikkim and must maintain its negotiating space through a comprehensive negotiation. India cannot afford a shortcut to a destination that suits China.


Ladakh
Jammu and Kashmir
Himachal Pradesh
Uttarakhand
CHINA
The Doklam tri-junction of Bhutan India-China
Arunachal Pradesh
Sikkim
India-China Border
Western Sector
Middle Sector
Eastern Sector
Disputed Territories
China claims parts of Arunachal Pradesh
Aksai Chin on Ladakh border

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4. Pg 12 – GS II (IR)

No role for third parties in bilateral matters between India, Nepal: Centre

The response comes after Nepal PM suggests countries such as U.K. and China could help address the issue; govt. says close to 98% of the boundary has been demarcated, with the remaining segments being addressed through established channels

Kallol Bhattacherjee
NEW DELHI

Responding to assertions made by Nepal Prime Minister Balendra Shah, the External Affairs Ministry on Tuesday said that India and Nepal had bilateral mechanisms to deal with border issues and that there was "no role for any third parties" in such matters.

Addressing pressperssons, Ministry spokesperson Randhir Jaiswal responded to the claims made by Mr. Shah, who had asserted that the boundary issue was a complex one with both India and Nepal having possession of each other's territory and had sought intervention of countries like the U.K. and China. The Ministry's response to the Nepali Prime Minister coincided with the visit of Rabi Lamichhane, chairman of the ruling Rastriya Swatantra Party in Nepal, who received a warm welcome in the national capital and met External Affairs Minister S. Jaishankar on Tuesday.

Union Home Minister Amit Shah greets Chairman of the Rastriya Swatantra Party Rabi Lamichhane in New Delhi. PTI

"We have established bilateral mechanisms to deal with all aspects of boundary matters. It should be clear to all concerned that there is no role for any third parties in a bilateral matter between India and Nepal," said Mr. Jaiswal.

In a speech in the Nepali Parliament on May 31, Mr. Shah said: "You will be surprised to know a fact that I have learnt recently, only after becoming Prime Minister. India has not only encroached Nepali territory, but Nepal has also encroached Indian territory in many places. Now, both countries should study the facts and sit together as friends and resolve the issue."

In response to this, the Ministry spokesperson referred to natural phenomena like the shifting of the Gandak river that is part of the India-Nepal border. Mr. Jaiswal said, "While close to 98% of the India-Nepal boundary has been demarcated, there are some unresolved segments."

No man's land

Explaining the complexity of the border issue, Mr. Jaiswal further said, "In addition, there are cases of cross-border occupation and encroachment of no-man's land in demarcated segments of the boundary, which are currently being mapped jointly."

The remarks from the official spokesperson coincided with the welcome that Mr. Lamichhane continued to receive here on the second day of his visit to India.

Mr. Lamichhane arrived here on Monday when he was welcomed by representatives of the Bharatiya Janata Party in the VIP lounge of the Indira Gandhi International Airport here.

'People-to-people ties'

On Tuesday, Mr. Lamichhane, who has been the leader of RSP since 2022, called on the External Affairs Minister. Following the discussion, Mr. Jaishankar said: "Our discussions focused on the development partnership and people-to-people ties. These have a crucial role in promoting growth and prosperity."

The visit of Mr. Lamichhane, who is in the country on the invitation of the BJP foreign affairs cell, has drawn attention as the trip came weeks after Foreign Secretary Vikram Misri's scheduled Nepal visit was cancelled because of Mr. Shah's reported disinclination to meet him.

Prelims Bytes

5. Pg 12 – Security

Indigenous RudraM-II missile clears flight trials

The Hindu Bureau
NEW DELHI

The Defence Research and Development Organisation (DRDO) and the Indian Air Force (IAF) have successfully conducted flight-tests of the indigenous RudraM-II air-to-surface missile, marking a significant milestone in India's efforts to strengthen its precision strike capabilities and advance self-reliance in defence technology.

According to the Defence Ministry, the missile was test-fired from an airborne platform under extreme release conditions, with the trials designed to validate the performance of all critical subsystems and flight parameters.

Data captured through a network of tracking and monitoring instruments deployed by the Integrated Test Range (ITR), Chandipur, confirmed the missile's performance and the success of the trials.

The RudraM-II is an indigenously developed, solid-propelled, air-to-surface missile designed primarily for Suppression and Destruction of Enemy Air Defenses (SEAD/DEAD) missions. Developed by the DRDO, it has a strike range of nearly 300 to 350 km and is launched from the Indian Air Force's Su-30 MKI fighter jets. PIB +3

Key Details & Capabilities

- **Primary Role:** Specifically built to hunt down and neutralise enemy radars, communication assets, and air-defence systems from stand-off ranges. The Indian Express
- **Guidance System:** Uses a hybrid architecture combining Inertial Navigation, GPS, and a passive homing seeker that tracks radio-frequency emissions across a broad spectrum. Swarajyamag
- **Precision:** Flight tests conducted by the DRDO and IAF confirmed the missile establishes its critical trajectory and strikes predefined targets with pinpoint accuracy. PIB +1
- **Status:** The missile underwent highly successful, integrated flight-tests, confirming the capability of all subsystems and cementing its role as a key force multiplier for the armed forces. PIB +1

6. Pg 14 – E&E

Tigress Zeenat gives birth to four cubs in Odisha's Similipal

The translocation effort aimed at enhancing the genetic diversity of tigers in Odisha's Similipal Tiger Reserve has received a major boost, with tigress Zeenat, brought from Maharashtra, giving birth to four cubs. Photographs of Zeenat gently carrying her cubs in her mouth have since gone viral. "Today, a proud chapter has been added to Odisha's natural resources and wildlife conservation efforts," Chief Minister Mohan Majhi said in a post on X on Tuesday. The event assumes significant importance for the State Forest Department, especially after an earlier experiment to introduce tigers in Satkosia Tiger Reserve had failed.

Similipal Tiger Reserve, located in Odisha's Mayurbhanj district, is a 2,750 sq. km biodiversity hotspot. Famous as the only wild habitat of the rare melanistic (black) tiger, it also features majestic waterfalls like Barehipani and Joranda, and dense *Sal* forests. EcoTour Odisha +1

It holds the **highest tiger population in Odisha.**

It is the **only tiger reserve** in the country to **boast of melanistic tigers.**

Apart from the tiger, the major mammals are the **leopard, sambar, barking deer,** gaur, jungle cat, wild boar, four-horned antelope, giant squirrel, and common langur.

Park Overview & Highlights

- **Key Wildlife:** Royal Bengal Tigers, melanistic tigers, Indian elephants, leopards, and giant squirrels.
- **Waterfalls:** Barehipani (217m) and Joranda (181m) are cascading marvels deep within the reserve.
- **Flora:** Over 1,250 species of flowering plants, including 94 rare and endemic orchid varieties. EcoTour Odisha +1

Not only a National Park, Similipal is **also a Tiger Reserve, Wildlife Sanctuary, Biosphere Reserve,** and also a **part of the Mayurbhanj Elephant Reserve.**
It is surrounded by high plateaus and hills, the **highest peak** being the **twin peaks of Khairiburu and Meghashini** (1515 m above mean sea level).

It is also home to various **tribes**, including **Kolha, Santhala, Bhumija, Bhatudi, Gondas, Khadia, Mankadia, and Sahara.**

Vegetation: The forest is **predominantly moist mixed deciduous forest** with tropical semi-evergreen forest in areas with suitable microclimatic conditions and sporadic patches of dry deciduous forests and grasslands.

7. Pg 14 – S&T

India losing ability to build its own instruments: climate science report

Use of imported equipment that remains uncalibrated leads to incorrect data being reported, marring credibility of Indian science; researchers also aim to study long-term impact of uncontrolled tapping of natural resources for renewable energy

Jacob Koshy
NEW DELHI

A group of India's leading climate scientists has warned that the country has almost lost the ability to build its own scientific instruments, leaving its climate observations dependent on imported equipment that is often run uncalibrated for years. This has led to "incorrect data being reported in national and international journals, often leading to questions on the credibility of Indian science", they said.

The researchers also called for long-term studies to evaluate the climate consequences of the "uncontrolled" growth of renewable energy installations, warning that the effects of large solar and wind plants on the climate remain "poorly understood".

The warning appeared in the Mega Science Vision-2035 (MSV) report on Climate Research, a road map prepared by the Indian climate research community with the Indian Institute of Science, Bengaluru, as the nodal institution, and submitted to the Office of the Principal Scientific Adviser (PSA) to the Union government.

The report was made public earlier this week.

Heat is on: The warning lands at a time when India is already facing the harmful effects of the warming climate. SHIV KUMAR PUSHPAKAR

Atmanirbhar challenges

The warning on instruments sits awkwardly with the government's drive for "atmanirbhar" or self-reliance. To boost domestic manufacturing, the Government e-Marketplace (GeM) portal was made mandatory for public scientific institutions, requiring procurement from the lowest-bidding India-registered vendor.

As *The Hindu* has reported, scientists found this a stumbling block when they needed customised equipment built to high-quality standards, with GeM vendors often unable to meet such specifications and the alternative – a global tender – entailing long bureaucratic delays.

In June 2025, the Finance Ministry rolled back some of the rules amid complaints over sub-standard materials.

The warning also lands at a time when India is already facing the harmful effects of the warming climate, from intensifying heatwaves and erratic monsoons to accelerating Himalayan glacier melt – the very trends that reliable, well-calibrated observations are meant to track.

The MSV exercise, historically used to plan large, long-horizon projects in fields such as nuclear and high-energy physics, was for the first time extended to climate research, ecology and astronomy, and was facilitated by the PSA's office under Professor Ajay K. Sood.

On the energy transition, the report recommended devising "scientific methods to estimate the social cost of carbon [i.e., the cost of damages from an extra ton of CO_2]" and a mechanism to implement the "polluter pays" principle to stop the atmosphere being used as "a dumping ground" for emissions, while seeking ways to "offset the effects of the carbon tax on the poor."

The scientists' justification for studying "uncontrolled" renewables is cautionary rather than sceptical. The report said that while "renewable energy seems to be the right solution to replace polluting energy sources, studies are needed to understand the long-term consequences of the uncontrolled tapping of natural resources."

India has pledged 500 GW of non-fossil capacity by 2030, and crossed the halfway mark on installed electricity capacity from non-fossil sources in 2025.

Mega projects

The report called for an indigenous Earth System Model built "from first principles", distinct from existing Indian models which have been "adapted from the U.S. or Europe."

It also proposed eight "mega projects" – spanning observatories, satellites, in-situ networks, field campaigns, indigenous sensors, carbon-neutrality research and adaptation science – phased across three roughly five-year blocks until 2035.

THE MEGA SCIENCE VISION EXERCISE

India's plans for setting up national, as well as participating in international, Mega Science Projects have always been made after careful nation-wide consultations. These consultations have come to be known as Mega Science Vision (MSV) Exercises. The last such Mega Science Vision Exercise was undertaken in 2014.

The latest Mega Science Vision-2035 (MSV-2035) Exercise has been undertaken by the Office of the Principal Scientific Adviser to the GOI in six areas: High Energy Physics, Nuclear Physics, Astronomy & Astrophysics, Accelerator Science & Technology and Applications, Climate Research, and Ecology & Environmental Science. The Year 2035 has been chosen keeping in view the timelines of similar exercises undertaken elsewhere in the world and the expected timeframe for establishment and utilization of various national and international facilities at the present time. The MSV-2035 Exercise will result in Roadmap Documents in the six areas after widespread national stakeholder consultations.

8. Pg 16 – IR

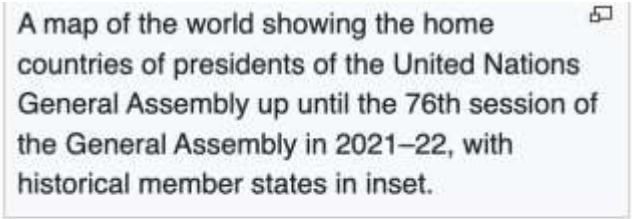
UNITED NATIONS

Bangladeshi FM Rahman elected president of UN General Assembly

ANI

Bangladesh's Foreign Minister was elected president of the 81st UN General Assembly on Tuesday in a vote that, unusually, featured more than one candidate. Khalilur Rahman won 99 votes in the secret ballot compared to 91 for Cypriot diplomat Andreas Kakouris. He will succeed the outgoing president in September. AFP

The **president of the United Nations General Assembly** is a position voted by representatives in the United Nations General Assembly (UNGA) on a yearly basis. The president is the chair and presiding officer of the General Assembly.



A map of the world showing the home countries of presidents of the United Nations General Assembly up until the 76th session of the General Assembly in 2021–22, with historical member states in inset.

The presidency rotates annually between the five geographic groups: African, Asia-Pacific, Eastern European, Latin American and Caribbean, and Western European and other States.[1]

Because of their powerful stature globally, some of the largest, most powerful countries have never held the presidency, including the five permanent members of the United Nations Security Council and Japan.

A few countries had a national elected as president of UNGA twice: Argentina, Chile, Ecuador, Germany, Hungary and Nigeria. In addition to the president, a slate of 21 vice-presidents are elected for each General Assembly session. The vice-presidents have the same powers and duties as the president, and the president may designate one of them to cover his or her absence from any meeting or part thereof.[2][3]

Base Year of Wholesale Price Index Revised from 2011–12 to 2022–23

Revised Wholesale Price Index and New Producer Price Indices Scheduled for Release on June 15

Revised WPI Series with Expanded Coverage, Renewable Energy Inclusion and Improved Methodology to Strengthen Price Measurement

Posted On: 02 JUN 2026 4:05PM by PIB Delhi

The revision of the Base Year of Wholesale Price Index (WPI) from 2011-12 to 2022-23 and compilation of Producer Price Indices (PPIs) has been approved by the competent authority in its meeting held on 25.05.2026. Earlier, the recommended compilation methodology was approved by the Technical Advisory Committee (TAC) on Statistics of Price and Cost of Living (SPCL). Subsequently, the methodology was also presented before the National Statistical Commission (NSC).

The Office of Economic Adviser, DPIIT will accordingly release the revised series of WPI with base year 2022-23 on 15.06.2026 at 12:00 noon, which would replace the existing series of WPI with base year 2011-12. In addition, the Office would also release new series of Output Producer Price Index (OPPI), Trial Input Producer Price Index (IPPI), and Service Producer Price Index (Service PPI) of seven services, viz., Banking, Securities Transaction, Insurance, Management of Pension Funds, Railways, Air (Passenger), and Telecom with base year 2022-23.

Considering the wide usage of WPI in price escalation clauses, this index will be released for five years from the date of release of the revised series along with PPI and will be discontinued thereafter. This would give sufficient time to users to switch from WPI to PPI. The transition from WPI to PPI is in alignment with the global best practices adopted by advanced economies and the recommendations of the International Monetary Fund (IMF). Availability of both the Output PPI and Input PPI gives a better understanding of the price movements of output items vis-s-vis inputs items being used in an industry. It also explains how inflation experienced by producers on input items are passed through the output being produced. The Service PPIs for seven services have been compiled in the first phase based on the of availability of data from administrative sources/agencies. More services are planned to be added to the basket of Service PPI in subsequent phase on the basis of availability of data.

Key highlights of the new series of WPI (2022-23):

(a) **Increased number of Items**: The total number of items has increased from 697 to 957;

(b) **Inclusion of New and Renewable Energy under Electricity:** New sources of energy, such as Solar and Wind, have been added under 'Electricity' Group. In addition, Nuclear Electricity has been included in the basket;

(c) **Coherent and Integrated Structure for Tracking Energy Prices:** Crude Petroleum and Natural Gas has been shifted from the 'Primary Articles' to the 'Fuel and Power. This reorganization would lead to better alignment, as this group already houses other major fuels such as coal, electricity, and petroleum products;

(d) **Improved Methodology for Derivation of Weights:** Gross Value of Output (GVO) has been used for preparing weights for WPI (2022-23) as compared to Net Traded Value *i.e.* GVO + Imports – Exports, used in WPI 2011-12 series since the weights based on GVO reflect the economic significance of commodities in a better way from the producer's perspective, as they represent domestic production;

(e) **Improved Computation Methodology:** The elementary indices are being compiled using short-term formulation using chain-based method, in place of long-term formulation method (as practiced in the existing series; and

(f) **Improved Method for Imputing Missing Price Data:** 'Targeted Mean Imputation' method has been used, in place of 'Carry-forward' method being used in the existing series of WPI.

(g) **Linking Factor:** The Linking Factor has been computed as ratio of geometric means of the twelve month indices of old and new series of WPI for the financial year 2024-25. This will be available for All Commodities and the Major Groups.

Union Minister Jyotiraditya M. Scindia launches Mission "Senehjori" for Assam Muga Silk

Prime Minister Narendra Modi's vision of an Atmanirbhar North East finds expression in Mission Senehjori — turning Assam's golden silk into a global luxury brand

Union Minister highlights Assam's potential to emerge as the global hub of premium Muga Silk and luxury textile value chains

Posted On: 02 JUN 2026 7:05PM by PIB Delhi

The Union Minister for Development of North Eastern Region (MDoNER), Shri Jyotiraditya M. Scindia, together with the Hon'ble Chief Minister of Assam, today launched **Mission "Senehjori" – Assam Muga Silk USP**, a comprehensive cluster-based initiative aimed at transforming Assam's unique Muga silk sector into a globally competitive, high-value luxury textile ecosystem.

Anchored by the MDoNER in convergence with the Government of Assam, Central Silk Board, Ministry of Textiles and other Central Ministries/ organizations, the Mission seeks to strengthen the entire Muga silk value chain from host-plant cultivation and silkworm seed production to reeling, weaving, branding, export promotion, digital traceability and tourism.

Muga silk, known as the world's only naturally golden silk and India's first GI-tagged silk, supports nearly 2.6 lakh rearer and weaver families in Assam. Despite its rarity and global recognition, the sector remains significantly under-monetised. Mission Senehjori seeks to bridge this value gap by creating a premium, traceable and export-oriented Muga silk economy.

The Mission adopts a cluster-based approach covering major Muga silk producing districts including Jorhat, Sivasagar, Lakhimpur, Dhemaji, Dibrugarh, Tinsukia, Majuli and Sualkuchi. The initiative envisages strengthening host plant ecology, establishing modern reeling infrastructure, promoting Farmer Producer Organisations (FPOs), creating Common Facility Centres (CFCs), enforcing GI authentication and building global market access under the unified brand identity **"Senehjori"**.

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