

INDIAN EXPRESS UPSC IAS EDITION HD 30~07~2025  
-:FOR UPSC IAS ASPIRANTS:-  
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Can't So Then You Have To Increase Your Efforts  
All the topics of this UPSC IAS Edition are directly or  
indirectly important for the prelims & main examination.  
There are some topics which can be coded in answer writing  
of other topics in the main exam.

## Challenge in US trade deal: Tackling Trump, ensuring tariff edge

ANIL SASI  
NEW DELHI, JULY 29

WITH JUST two days left for the August 1 deadline set by the Donald Trump administration to wrap up agreements with its trading partners, the American President said he is planning tar-

iffs at “somewhere in the 15-20 per cent range” for “the rest of the world”. That would mean a significant increase on the 10 per cent “baseline” tariff that applies to most trading partners now. Given how talks have proceeded, an interim deal still seems distant. But three things

CONTINUED ON PAGE 2

## Manipur district election officers begin outreach on SIR, meet parties

SUKRITA BARUAH  
GUWAHATI, JULY 29

EVEN AS Manipur remains under President’s Rule, district election officers have begun holding meetings with local representatives of political parties to discuss the Special Intensive Revision

(SIR) of electoral rolls. While these meetings have already been held in at least five of the 16 districts in the state, notices convening such meetings have been issued in the remaining districts. On Monday, representatives of the BJP, Congress and the Kuki People’s Alliance attended one

CONTINUED ON PAGE 2

### DISCUSSION ON OPERATION SINDOOR IN LOK SABHA

## No world leader asked India to stop Op (Sindoor)... only 3 countries backed Pak: PM

‘Vance said Pak was planning big attack... I said will answer bullets with cannonballs’

VIKAS PATHAK  
NEW DELHI, JULY 29

WITH THE Opposition flagging US President Donald Trump’s repeated claims of mediating the May 10 ceasefire between India and Pakistan, Prime Minister Narendra Modi told Lok Sabha on Tuesday that “no leader in the world asked India to stop its military operation (Sindoor)”. He said he had told US Vice-President JD Vance on May 9 that if Pakistan fired bullets, India would respond with cannonballs.

Replying to an over 16-hour discussion in Lok Sabha on the Pahalgam terror attack and Operation Sindoor, Modi said it

CONTINUED ON PAGE 2



Prime Minister Narendra Modi, Leader of Opposition in Lok Sabha Rahul Gandhi during the discussion on Tuesday. PTI



FROM PAGE ONE FULL REPORTS ON WWW.INDIANEXPRESS.COM

● No world leader asked India to stop Op (Sindoor): PM

was the Pakistan DGMO (Director General of Military Operations) who “begged” his Indian counterpart for a ceasefire.

While he did not mention Trump, Modi said he spoke to US Vice-President J D Vance on the night of May 9. “On the night of May 9, the US Vice-President tried to talk to me. He was trying for one hour, but I was busy in meetings with the forces. Then I called... He told me that Pakistan was planning a big attack. My answer was... that if Pakistan is planning this, it will pay a heavy price. If Pakistan attacks, we will attack harder. Then I said we will answer bullets with cannonballs,” he said.

“No country in the world stopped India from acting in its defence. The United Nations has 193 countries — only three spoke in favour of Pakistan during Operation Sindoor. All other countries supported India,” Modi said. “We got support from the world, but it is unfortunate that the valour of our forces did not get support from the Congress. They were jumping within three-four days of April 22 (day of the Pahalgam attack), asking where is Modi... They were enjoying it. Even in the killing of innocent people, they were looking to score political points... You can grab media headlines like this but you cannot find a place in people’s hearts,” he said.

On the ceasefire, Modi said: “... The Pakistan DGMO begged our DGMO... please stop, you have beaten us enough, we can’t take it any longer. India had said on May 7 that we have completed our job, if you do something, you will pay a price. It was India’s clear strategy to target terror hubs, and our action was non-escalatory.”

He also defended India’s decision to inform Pakistan about the attack minutes after it targeted terror hubs early on May 7, recalling that the Army had said at a press conference that it had accomplished its goals and would retaliate only if Pakistan attacked.

“India destroyed Pakistan’s military strength between May 9 and May 10. Pakistan now clearly understands that India’s response will always get bigger and that India can do anything if it engages in any misadventure in future,” he said. “I repeat that Operation Sindoor is still on. If Pakistan tries anything, it will be given a tough reply,” the PM said.

Modi also accused the Congress of “importing issues

from Pakistan” and echoing the country’s propaganda. “Unfortunately, Congress leaders have become spokespersons of this stratagem of Pakistan,” he said. “Yesterday, our security forces sent the Pahalgam terrorists to their destination in Operation Mahadev. Here, they are asking why it happened yesterday. What has happened to them? This level of hopelessness.”

Modi said the Congress had also raised questions on the Uri surgical strikes and Balakot airstrike. This time, when all the evidence was presented, the party was asking why the government halted the operation, he said. He said criticising the security forces was an old habit of the Congress, adding that the party never celebrated the Kargil victory when in power.

Modi said the Pahalgam terror attack was a conspiracy to provoke violence in India, but the country’s unity foiled the plot. He recalled that when he returned from abroad after the attack, he gave the defence forces a free hand to pick the time, spot and means of their attack. “We are proud that terrorists were given the kind of punishment that their masters are sleepless till today.”

Pakistan’s nuclear blackmail did not work, India reached sites in Pakistan it had never reached before, established its superior technical skill based on make-in-India equipment, and showed synergy across the three defence forces because of reforms — like the creation of the office of the Chief of Defence Staff, tripling of the defence budget in a decade, a 250 per cent increase in defence production, 30-fold increase in defence exports — over the last decade, Modi said. “The Congress, when in power, did not even think of self-reliance for the forces. The Congress used to find opportunity in every defence deal. From jeep to Bofors to helicopter — there is a scam attached with everything. Our forces had to wait for decades for modern equipment,” he said.

He said while terror attacks used to happen earlier too, their masterminds were having sleepless nights now, adding that this was the new normal India had set. “Terrorists are crying, their mas-

ters are crying and some people are crying watching them,” he said in a swipe at the Congress.

Operation Sindoor targeted the epicentre of terrorism, where the Pahalgam attack had been planned and terrorists were recruited and trained, he said.

Modi said those asking why India did not take back Pakistan-occupied Kashmir should remember that it was lost by the then Jawaharlal Nehru govern-



SCAN THIS FOR PM NARENDRA MODI'S FULL SPEECH

ment just after independence.

Modi also blamed Nehru for the Indus Waters Treaty. “It was about rivers emanating here. Those rivers were part of our civilisational ethos. The Indus was India’s identity. But Nehru ji and Congress gave

the World Bank the panchayat to decide on our waters and rivers. The Indus Waters Treaty was a deception inflicted on India,” he said. He said the treaty gave 80 per cent water to Pakistan and only 20 per cent was left for India. “Our farmers had the right to these waters,” he said. “They pushed India into a water crisis; there arose differences between our states for water. Many big projects would have come up if this treaty would not have been signed. India would have had more drinking water and hydroelectric power,” Modi said.

“Despite wars and proxy wars, the Congress did not rethink the treaty. But now, India has corrected Nehru’s blunder by keeping the treaty in abeyance in the interests of our farmers. Blood and water cannot flow together.”

“After 26/11, the Congress’s love for Pakistan did not stop. Under foreign pressure, they started talking to Pakistan soon. They did not expel even one diplomat from India. They did not even cancel a single visa. Pakistan-sponsored attacks continued, but Pakistan had most-favoured-nation status. The country was asking for justice, and Congress was busy doing trade with Pakistan,” the PM said. Modi said the Congress’s failure to take decisive action against terror was partly because of its “appeasement policy”, adding that when India was facing repeated terror attacks, the Congress was seeking out “Hindu terror”.

● Challenge in trade deal with US

are clear: One, the US is pushing hard for zero duty access to the Indian markets, like it did with Vietnam and Indonesia. Two, from its perspective, New Delhi is keen ensure the headline tariff doesn’t exceed 15 per cent for its goods exports to the US. And three, the tariff for each country may depend on multiple external factors, such as investment commitments and high-value purchases.

The Trump administration is learnt to be pushing for India to commit to specific purchases and investments, of the sort that it got the EU and Japan to sign up for. This may not be a big issue for India, given that Trump may be keen on scoring a political point on extracting a big investment commitment without any specific hard time-frame to achieve it. India may be open to purchasing three big-ticket items from the US: defence equipment, natural gas imports and nuclear reactors.

While New Delhi has managed to keep two contentious issues, agri and dairy, off the table for now, it may be willing to be flexible on segments such as opening up public procurement, like it did in the UK trade deal.

Indications are a sixth round of talks between the two negotiating teams will take discussions forward in August. What could be instructive is the limited takeaway for the US from the Japan deal: how the Japanese negotiators managed to upstage their American counterparts by getting an immensely favourable deal on automobiles, even as they dangled the agri market access concessions and Tokyo’s investment pledges as distraction the entire time.

Headline tariff number; comparative advantage

New Delhi is likely to push for market access in labour-intensive sectors, while trying to ensure a significant tariff differential compared to its Asian peers. If the final US headline tariff is between 10 per cent and 15 per cent, the tariff

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EXPLAINED Why US, China talks matter

INDIAN NEGOTIATORS are keeping a close watch on the trade talks the US is currently engaged in with China. This will give New Delhi an idea about the comparative advantage it will have vis-à-vis Beijing. A delay in the deal does offer more visibility on what a favourable tariff range would be, in comparison to the tariff deals other countries have clinched.

points offered to the UK and Japan, respectively, New Delhi would be satisfied. The advantage starts to taper off once the tariff goes over 15 per cent and inches up closer to 20 per cent, as was offered to Vietnam. A trans-shipment clause, of the kind slapped on Vietnam which levies an additional 20 per cent tariff, could be a problem for India too, given that a lot of Indian exports have inputs and intermediate goods in sectors such as pharma, engineering goods and electronics coming in from outside, including China. Also, New Delhi will be closely looking for clarity on the final American duty offer on China, given its belief that Trump will maintain a tariff differential. For Indian negotiators, extra tariffs on steel and aluminium, over and above the baseline, is an added complication. Trump’s threat of steep tariffs on BRICS countries for buying Russian oil is also a looming concern. On specific sectors such as auto or consumer non-durables, India is likely to follow a quota system that progressively opens up market access over a span of multiple years, like it did in the UK deal signed last week.

Another question for New Delhi is: in the absence of an interim deal, should it brace for an eventuality where there may not

just be 26 per cent reciprocal tariffs, but an additional 10 per cent BRICS tariff as well? Without this, India will compare well with Indonesia (19 per cent) and Vietnam (20-40 per cent), and give an advantage over China (30-34 per cent) and Bangladesh (35 per cent). The equation changes when the additional levies are factored in.

Exporters Struggle

As the uncertainty continues, India’s exporters are struggling to navigate the way forward because buyers in the US are not clear as to what the final tariff will be, and are consequently holding back orders. The higher tariffs the US has imposed on China means a number of Chinese manufacturers are now also rerouting shipments to Europe at throwaway prices, which is impacting India’s exports to the EU as well. India, like other countries, had frontloaded shipments ahead of the reciprocal tariff deadline for the ongoing Spring-Summer season, but there is now a question mark over the orders for the Fall-Winter season from October to March.

Once the official level discussions wrap up by mid-August, there is a sense that a final call on the deal could come down to a conversation between the two leaders, PM Narendra Modi and President Trump. This is especially so since it is Trump who is the trade negotiator-in-chief. For India, the best-case scenario would be to get a deal of some sort now, and then build on that, experts said. For Trump, another consideration could be the fact that higher tariffs imposed by it mean higher prices for everyday goods made overseas. A Yale estimate from July 23 found that the tariffs will result in as much as \$2,700 in “lost annual income” per household, though taxes collected would potentially help narrow the federal deficit. The tariffs that have kicked in are bringing in some money into the US Treasury, with tariff revenue pegged at \$27.2 billion in June and \$22.8 billion in May, according to the Treasury Department’s statements, a sharp increase from earlier years.

war. We are going to fight.”

Throughout the special debate on Operation Sindoor in Parliament, the charge that the government “bucked under pressure from the US” and agreed to a ceasefire when the Indian forces were in “an advantageous position” against Pakistan has been a recurring theme of speeches made by Opposition leaders.

In his combative 37-minute speech, Gandhi, the Leader of the Opposition in Lok Sabha, also alleged that the Indian forces went into the conflict with Pakistan with their “hands tied behind their back”, as the Modi government did not have “the political will” to wage a war with Pakistan.

“If you want to use the Indian forces, then you should have 100% political will. And secondly, you should give them full operational freedom. (Defence Minister) Rajnath Singh in his speech compared the 1971 (war with Pakistan) and Operation Sindoor. There was political will in 1971. In the Indian Ocean, the Seventh fleet (of the US) was approaching. The then Prime Minister (Indira Gandhi) said we will do whatever we want to do in Bangladesh... political will without any confusion,” Gandhi said.

“General Manekshaw told Indira Gandhi that he cannot carry out the operation in the summers... he needs six months. Indira Gandhi told him take whatever time you want... because you should have the freedom of action, freedom to manoeuvre. One lakh Pakistani soldiers surrendered and a new country was created.”

Referring to the telephonic conversation that India’s DGMO (Director General of Military Operations) had with his Pakistani counterpart right after Operation Sindoor began, informing him

about the attacks India had carried out on terror camps and hideouts in Pakistan, he called it “shocking” that India had conveyed that it had hit non-military targets and did not want escalation.

The Congress leader said this amounted to a “ceasefire” offer on the first night of Operation Sindoor itself. “You told the Pakistanis exactly what you would do. You told them that we will not hit military targets. You told them that we do not want escalation... You have told Pakistan directly that you don’t have the political will to fight... And this the Defence Minister has said, in the House... that we don’t want to escalate... (It was) immediate surrender in 30 minutes,” Gandhi said.

He also referred to the remarks made last month by Captain Shiv Kumar, India’s Defence Attache to Indonesia, that “India did lose some aircraft”. Gandhi said this happened “only because of the constraint put by the political leadership not to attack the military establishment or their (Pakistan’s) air defences”. “You went into Pakistan... you told our pilots to not attack their air defence systems... You tied their hands... What will happen? Planes will fall... You don’t want to answer, but everyone knows the outcome.”

Gandhi also referred to CDS General Anil Chauhan’s remarks that “what is important is not the jets being downed, but why they were being downed”, and that the Indian forces had learnt from their mistakes, rectified the same and taken off again. “I want to tell CDS

Anil Chauhan that you made no tactical mistake. The Indian Air Force made no mistake. The mistake was made by the political leadership... And Anil Chauhan must have the guts to say this... that my hands were tied behind my back,” he said.

According to Gandhi, the goal of this exercise was “to protect the PM’s image”. “Because he has the blood of the people of Pahalgam on his hands, the goal was to make sure that he used the Air Force to protect his image... It is dangerous for the country. The forces should be used only in national interest... If you want to use them,



SCAN THIS FOR RAHUL GANDHI'S FULL SPEECH

do not tie their hands behind their back.”

“The nation is above your image, your politics and your PR... Have the humility and dignity to understand that.”

The Congress leader also took on S Jaishankar. “Sometimes, this

External Affairs Minister amazes me. He says, and even the Defence Minister, that we have deterred Pakistan. The man behind Pahalgam is Pakistan’s General (Asim) Munir, the Chief of Army Staff. That man is having lunch with the President of the US... Trump is breaking all protocol and inviting the man who has (perpetrated) terrorism in India to have lunch... and the PM has not said anything.” He said General Munir also had a meeting with US Central Command Chief Gen Michael Kurilla, and generals from four Central Asian countries on “how to prevent terrorism”. “Which planet is the Foreign Minister sitting on? Please come down. You have flown off somewhere.”

● Manipur district election officers begin outreach on SIR, meet parties

such meeting in Kangpokpi district. According to an official there, the meeting was held based on “informal” instructions issued by the State Election Commission. “There was no formal notice from either the Election Commission of India or from the State Election Commission to conduct such meetings. However, we were given an informal communication that in view of the ensuing SIR, a meeting should be held

with political parties to sensitise them on the process, as well as on pre-revision house-to-house surveys and rationalisation of polling stations,” the official said.

At the meeting, representatives of all three parties are learnt to have expressed concern over the non-inclusion of Aadhaar cards for the exercise.

Amid the ongoing Special Intensive Revision of electoral rolls in Bihar, ahead of the

Assembly elections there, the Supreme Court has asked the Election Commission to consider inclusion of Aadhaar, Voter ID and ration cards as proof for updating the rolls.

“We had communicated with the representatives about the 11 documents that are permissible for proving identity and address. They were concerned that in a hilly, tribal area like this, most people may not have the

other required documents but are most likely to have Aadhaar since it is linked with so many things,” said the official.

Thangjamang Kipgem, a BJP leader who attended the meeting, said the concern was shared by other parties as well. “We are very concerned about this, because Aadhaar is one document that everyone, from new voters to old people, are most likely to have. The officials told us that

they will convey our concerns to the authorities,” he said.

A similar meeting was also held in Kamjong on Monday, which was attended by representatives of the BJP, Congress and the Naga People’s Front. “We explained what the process is and what the documents required are. The representatives emphasised that every eligible citizen must be a part of the electoral roll,” said a district official. Similar meetings have also been held in Noney, Ukhrul and

Thoubal districts.

Earlier this month, the state also conducted training sessions on the SIR for booth level officers and their supervisors across multiple Assembly constituencies. With these preparatory steps, Manipur has set the ball rolling for an imminent SIR, even as its neighbour, Assam, has effectively sought a delay in the exercise in the state by asking for the inclusion in a final NRC — a matter that has been in limbo for six years — as among the admissible documents.



# 8 GOVT & POLITICS

## ‘Most substantial trade pact since EU exit, sends positive message to world’

THE VISION 2035 document brought out by the UK and India during Prime Minister Narendra Modi's visit last week places significant emphasis on the security and defence relationship between the two countries, says British Deputy High Commissioner **CHRISTINA SCOTT**. In an exclusive interview with **DIVYA A**, Scott, currently officiating as the High Commissioner in New Delhi, also speaks about various aspects of the the free trade agreement (FTA), talks between the two PMs on Khalistani extremism and extradition of economic offenders, and PM Keir Starmer's potential visit to India. Edited excerpts:

**During his recent visit, PM Modi invited PM Starmer to visit India. Is this likely to happen this year?**

We have got two governments that had general elections at roughly the same time over the last year, there's been a lot of conversations. Vision 2035 sets out the joint ambition for the next decade for the two governments. I am expecting quite a heavy drumbeat of contact and visits over the autumn. Personally, I hope that involves my Prime Minister, but we will see. We hope to make that happen as soon as possible. Our PM will be very keen to come at the earliest opportunity.

**How is the FTA being viewed in the UK as the world deals with the US trade tariff negotiations?**

Our FTA has gone down enormously well in the UK. For us, it is the most substantial economic trade agreement we have made since leaving the European Union. It's also the broadest trade deal that India has ever done, and sends a very positive message to the world. It's been three or four years now in negotiating this document and for the two big democracies like this to come

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together. The FTA is good for itself, regardless of what other countries are choosing to do.

**What would be the biggest takeaway for the UK from this FTA?**

It is anticipated that it will add — over the medium term — £25 billion a year to the trade between the two countries. It will also add to the UK GDP. It offers opportunities for British businesses to invest in India. And it's a great story also for our British consumers who can benefit from cheaper and quality goods from India as well. Both governments, when they were negotiating, had their domestic issues very much at heart and we have come to this point because we have such complementary economies.

**This time, there was a lot of talk about Khalistani extremism... PM Modi spoke about this at the joint press statement. What was the kind of conversation the two sides had? And what was the kind of assurance the UK**

ongoing on the India–European Union Free Trade Agreement, India–Australia Comprehensive Economic Cooperation Agreement, India–Sri Lanka Economic and Technology Cooperation Agreement, India–Peru Free Trade Agreement, India–Chile Comprehensive Economic Partnership Agreement, India–New Zealand Free Trade Agreement, India–USA Bilateral Trade Agreement and a similar approach has been followed while dealing with the United Kingdom to safeguard the interests of farmers and secure market access for our agri-products,” Thakur said.

## Over 50% tiger deaths since 2021 took place outside reserves, shows data

**New Delhi:** More than half of the tiger deaths in India between 2021 and 2025 have occurred outside protected reserves, with Maharashtra and Madhya Pradesh accounting for the highest numbers, government data shows.

According to the National Tiger Conservation Authority (NTCA), 667 tigers died during this period and 341, or 51 per cent, of the deaths occurred outside tiger reserves.

About 30 per cent of India's

estimated 3,682 tigers live outside notified tiger reserves.

The year-wise data shows 129 tiger deaths in 2021, 122 in 2022, 182 in 2023, 126 in 2024 and 108 so far in 2025.

The number of deaths outside reserves was 64 in 2021, 52 in 2022, 100 in 2023, 65 in 2024 and it is 60 in 2025 so far.

Maharashtra reported the highest number of 111 tiger deaths outside reserves, followed by Madhya Pradesh with

**would have given?**

The UK takes violent extremism of any form incredibly seriously. We are working closely with the government of India and we know the importance and we have a duty in the UK to disrupt violent extremists. It's part of the conversation we have with India and we will continue to work with India on the exchange of information where we think such influences exist.

**But there's a layer of freedom of expression that comes in, which India is not very comfortable, especially with referendums and everything.**

The UK has a proud history of peaceful protest and the right to peaceful protest within the law. And it's an important part of our democracy that people have the right to give their views. But it can't be in a way that incites violence. When it trips over the line, our police are very good at taking action in accordance with the law to uphold the security of our nation.

**Vision 2035 clearly spells out that terrorism in all its forms and manifestations has to be condemned. In that context, was there any discussion about the Pahalgalam attack and Operation Sindoor?**

The (Indian) Prime Minister referenced in the joint press conference that they talked about this. And obviously, our PM will have expressed deep condolences for the terrible attack in Pahalgalam. For the UK, the peace and stability of this region matters a lot, because we have such great links.

What you can see from Vision 2035 is the importance and emphasis we put on our security and defence relationship with India. And in that document, a number of areas where the PMs are committed to working together for the stability of the region. And that's the really important thing going forward.

He said, “In order to protect the interests of the farmers and domestic industry, including MSMEs, FTAs provide for maintaining sensitive, negative or exclusion lists of items on which limited or no tariff concessions are granted.”

“In addition, in case of surge in imports and injury to the domestic industry, a country is allowed to take recourse to trade remedial measures such as anti-dumping and safeguards on imports within the period as mutually agreed to by the parties under the FTAs. Likewise Rules of Origin, including product-specific rules are developed with stakeholder consultations,” he said.

90. In 2021, Maharashtra recorded 23 such deaths, Madhya Pradesh 18, Kerala five and Telangana four. In 2022, Maharashtra saw 18 deaths, Madhya Pradesh 12, and Kerala and Uttarakhand four each. In 2023, 34 tigers died outside reserves in Maharashtra, 13 in Madhya Pradesh, 11 each in Kerala and Uttarakhand, and six in Karnataka. In 2024, Madhya Pradesh logged 24 such deaths, while Maharashtra saw 16. **PTI**

## Linguistic states led to creation of second-class citizens: TN Gov

**EXPRESS NEWS SERVICE**  
AHMEDABAD, JULY 29

TAMIL NADU Governor R N Ravi on Tuesday claimed that the linguistic division of states after Independence had created “second-class citizens”.

Ravi was speaking at the Rashtriya Raksha University in Gandhinagar. According to Ravi, the country was “united” before Independence even though there was no single national government. After Independence, he said, “we have started fighting with each other... what they call linguistic nationalism”.

He said: “Within a decade of our Independence, there had to be a linguistic reorganisation of Bharat and this happened following violent protests in many parts of the country... people had started refusing to live with each other. When we created linguistic states, a large population became second-class citizens...”

He said, “In my own state Tamil Nadu... people of different languages... they all live together but the moment it became a linguistic state, one third of the population became a second-class citizen. It happened in other parts also.”

The TN Governor said, “Something went wrong after Independence... The rashtra (nation) was taken in a direction that created division among our people in every conceivable way. So much so that the government began accepting as if it was an inevitable natural phenomena. This is reflected in the administrative (reforms) commission report. In



**Tamil Nadu Governor R N Ravi**

2008, the central government commissioned it. It was a voluminous report on conflict management, countering terrorism and if you read it, you will see how the government viewed the country.”

Ravi said until 2014 the “entire Northeast was burning” but now it is “far, far near normal”.

He said, “Because if you understand the organising principle of rashtra, we will be able to find solutions to our internal security problems in a way that will not create more problems but you will be able to resolve them. Because what we created before the PM came, was (that) in the course of finding solutions, we created more problems.”

Criticising the creation of Nagaland as an “ethnicity-based state”, he said that the violence did not end and the region started getting “vivisected”.

He said, “They created a homeland for Mizos, another for Garo and Khasi in Meghalaya, and even within Assam, there are more than 20 ethnicity-based homelands created under statutory provisions. You kept creating homelands for ethnic groups and within them, there are sub-groups which started fighting. It was like a nuclear reaction... Society started breaking and from a peaceful region, it turned into more than 50 armed organisations.”

### IN PARLIAMENT

## India in trade talks with EU, other countries, minister tells Lok Sabha

**EXPRESS NEWS SERVICE**  
NEW DELHI, JULY 29

INDIA IS actively pursuing trade negotiations with the European Union (EU), US, Australia, Sri Lanka, Peru, Chile and New Zealand, Minister of State for Agriculture and Farmers Welfare Ram Nath Thakur informed Lok Sabha on Tuesday.

In a written reply to a question asked by CPI (M) member R Sachithanantham, Thakur said that with these trade discussions, India will focus to expand its global trade footprint and enhance competitiveness of Indian exports.

“At present, negotiations are



# If there’s mass exclusion, we will step in: SC on Bihar electoral list revision

EXPRESS NEWS SERVICE  
NEW DELHI, JULY 29

THE SUPREME Court on Tuesday said it will hear on August 12 and 13 pleas related to the Special Intensive Revision (SIR) of the electoral list carried out by the Election Commission (EC) in Bihar, and sought to assure the petitioners who challenged the process that “if there is mass exclusion, we will step in”.

Hearing the matter on Monday, a bench of Justices Surya Kant and Joymalya Bagchi, while refusing to stop the EC from publishing the draft revised list, had asked the parties involved to inform it on Tuesday how much time they will take to make their submissions so that the court can fix a date.

As the court took up the matter on Tuesday, Senior Advocate Rakesh Dwivedi, appearing for the EC, submitted that the draft has been advertised and given to political parties.

Senior Advocate Kapil Sibal, appearing for RJD MP Manoj Jha, said those who have been left out must have a chance to submit objections. “They will have the right. Who said they won’t?” Justice Kant said, adding, “The moment they deviate from the notification, we will interfere.”

To this, Sibal said, “We don’t know who has been left,” and asked if the EC had given the

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names of those excluded. Dwivedi replied, “It won’t be given to you. Take from the website.”

Advocate Prashant Bhushan, appearing for petitioner Association for Democratic Reforms (ADR), submitted that according to the EC, 65 lakh people have not submitted the enumeration forms as they are either dead or have permanently shifted elsewhere. Contending that those excluded will have to apply afresh, he wondered how they will come to know whether they are in the draft.

Justice Kant said that the EC is a constitutional body and “we would deem their action will be in accordance with the law”. He assured that the court is there to take care of any concern. “We are here, we will hear you,” he said.

Justice Bagchi said, “January 2025 list is the starting point if there was no SIR. Draft list will be published by ECI. Your apprehension is 65 lakh-odd voters will not feature... They (ECI) are seeking correction vis-a-vis 2025 entry. We are over-viewing the thing as a judicial authority. If there is mass exclusion, we will step in. Bring 15 people saying they are alive but left out.”

The EC counsel, however, said there is a 30-day window for filing objections, and that the petitioners should help with adding names. Justice Kant said political parties should operate like NGOs during the process.

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## 2002 Bengal voter lists appear on EC site, spark talk of SIR from Aug

ATRI MITRA  
KOLKATA, JULY 29

THE WEST BENGAL Chief Electoral Officer has made some voter lists from the 2002 electoral roll revision available online, sparking speculation that the exercise will begin in the state in August.

This comes two weeks after the Election Commission of India wrote to state Chief Electoral Officers (CEOs) asking them to prepare for a Special Intensive Revision similar to one currently ongoing in Bihar.

According to sources in the election commission, the list that has been published on the website of the of the State’s Chief Electoral Officer (CEO) contains the names of 11 districts – Cooch Behar, Jalpaiguri, Darjeeling, Uttar Dinajpur, Dakshin Dinajpur and Malda in North Bengal and Nadia, Howrah, Hooghly, Medinipur (undivided) and Bankura in the south.

So far, there’s been no word from the Election Commission on the speculation in West Bengal, with a senior official saying only that they were “ready for anything”.

“Within two-three days we will publish all 23 districts’ lists of electors according to 2002 SIR,” the official at the West Bengal CEO said.

Significantly, West Bengal is due to hold Assembly polls next year. In its order to Chief Electoral Officers, the ECI asked them to rationalise polling stations (including identification of new buildings to ensure no polling station has more than 1,200 electors); fill up all vacant positions of key officials, from Block Level Officers (BLOs) and Electoral Registration Officers (EROs) to Assistant Electoral Registration Officers (AEROs), and supervisors who will undertake the enumeration on the ground; and conducting their training.

Also mentioned in the order was the direction to publish the 2002 electoral rolls online.

As part of the exercise, the West Bengal Chief Election Officer began training its Booth Level Officers for the enumeration exercise Saturday.

But Chief Minister Mamata Banerjee has opposed the exercise, saying Monday that her party “won’t allow SIR in West Bengal”.

She also accused the Election

Commission of acting on directions from the Bharatiya Janata Party-led National Democratic Alliance at the Centre.

“They (EC) are finalising the voters’ list, while sitting in Gujarat... The BJP’s agency (EC) is doing this... They have already set up detention camps in Haryana and Assam... We want to say: *Jo humse takrayega, choor choor ho jayega*” (Those who mess with us will be shattered),” she said.

However, Leader of Opposition and BJP leader Suvendu Adhikari has supported the move. “No Rohingya or Bangladeshi Muslim illegal immigrant, however, will be allowed to have their names in the electoral rolls in the state,” Adhikari said.

The electoral roll revision exercise in Bihar has been at the centre of a row, with Opposition parties claiming that the requirement that voters enrolled after 2003 produce multiple documents to stay on the rolls could potentially disenfranchise millions of voters and has spurred legal challenges in the SC.

Unlike the Bihar exercise, the qualifying date for pan-Indian exercise has been kept as January 1, 2026.

# India’s first outreach to Syria after Assad fall: MEA official meets ministers in Damascus

SHUBHAJIT ROY  
NEW DELHI, JULY 29

IN ITS first official outreach to the new dispensation in Syria since the fall of the Assad regime last year, India has sent a senior official to Damascus to meet with ministers in the transitional government led by Ahmed Hussein al-Sharaa.

An Indian delegation led by M Suresh Kumar, Joint Secretary in charge of West Asia and North Africa Department at the Ministry of External Affairs, met Syrian Minister of Foreign Affairs and Expatriates, Asaad Al-Shaibani on Monday, according to Syrian news agency SANA. Kumar was earlier India’s charge d’affaires at the Indian High Commission in Islamabad, Pakistan.

“Talks during the meeting dealt with issues of mutual concern and ways of enhancing relations between the two countries in the interests of both peoples,” SANA reported, quoting a Syrian Foreign ministry statement.

The Indian delegation also held discussions with Syrian Health Minister Musab Al-Ali on Monday.

Sources said the focus of the dialogue was on enhancing col-



Syria's interim President Ahmad al-Sharaa

laboration in health care, particularly in “pharmaceutical manufacturing and medical training”.

Both sides also deliberated on the implementation of a “scholarship program for Syrian students” and the development of a “specialised engineering co-operation initiative tailored for Syrian government employees”.

According to SANA, Al-Ali emphasised Syria’s keenness to build a lasting partnership with India in the pharmaceutical and health-care sectors and noted it would strengthen the country’s national health system and improve the availability of essential medicines.

Kumar reaffirmed New Delhi’s commitment to support Syria through funding specialised training programs for Syrian professionals. He also said India would continue coordinating the training of Syrian doctors at Indian institutions while fostering deeper collaboration in nursing, pharmaceuticals and drug exports.

India had strong and robust ties with the Assad regime — led primarily by Hafez al-Assad and then his son Bashar al-Assad — for more than five decades until last December, when al-Sharaa led a rebel coalition to overthrow the Bashar al-Assad regime and took over as the country’s leader.

According to officials, India has been monitoring the situation after the departure of Bashar al-Assad on 8 December 2024. In the immediate aftermath of the political change in Syria, India carried out the evacuation of 77 Indian nationals from Syria on 10-11 December 2024.

On December 9, India had called for a “peaceful and inclusive Syrian-led political process” which respects the interests and aspirations of all sections of Syrian society. It was India’s first statement since Bashar al-Assad’s fall.

“We hope that the new constitution, due to be drafted, takes into account the interests of all the sections of the Syrian society,” an Indian official said.

Syria adopted a new interim constitution on March 13. The country is expected to hold its first parliamentary election under the al-Sharaa administration in September.

# Jay and Veeru, inseparable lion duo from Gir, die weeks apart

EXPRESS NEWS SERVICE  
AHMEDABAD, JULY 29

THEIR FRIENDSHIP was the stuff of legend. Perhaps that is why they were named Jay and Veeru after the iconic duo from 1975 blockbuster *Sholay*.

For years, the two adult lions had been the pride of Gir National Park in Gujarat. Earlier this year, even Prime Minister Narendra Modi called on the inseparable pair during his visit to Gir.

But over a month ago, when they were not in each other’s company, Jay and Veeru sustained serious injuries in separate territorial fights. While Veeru died on June 11, a few days after sustaining the wounds, Jay succumbed to its injuries on Tuesday.

Additional Principal Chief Conservator of Forest and Chief Wildlife Warden of Gujarat Jaipal Singh said the two lions used to lead the same pride of big cats.



RS MP Parimal Nathwani

The lions sustained serious injuries in separate territorial fights. While Veeru died on June 11, Jay died on Tuesday

“Veeru had sustained very serious injuries and he died a few days after that. Whereas, Jay died today. The two were rescued and we made a lot of attempts to save them but could not succeed,” Singh said on Tuesday.

Deputy Conservator of Forest, Wildlife Division (Sasan-Gir), Mohan Ram said that the two

were prime adult males who used to accompany around 15 female lions. “Their area was very big, (spanning) from tourism zone to non-tourism zone and from grassland to woodland and even fringe areas. They sustained injuries in territorial fights (with other lions) while they were not together,” he said.

# 103 days, 293 camera traps, 4,011 images — how Kaziranga reserve counted its tiger population

Survey finds 148 tigers in reserve, which now has third-highest density of the big cats in the world

SUKRITA BARUAH  
GUWAHATI, JULY 29

KAZIRANGA TIGER Reserve has the third-highest density of tigers in the world, the first large-scale assessment of the big cat’s population there has revealed. Officials say the reserve has an estimated 18.65 tigers per 100 square kilometres.

On Tuesday, officials released a summary report for 2024 titled ‘Status of Tigers in the Kaziranga Tiger Reserve’, with the findings of a Phase IV tiger monitoring initiative across Eastern Assam, Nagaon, and Biswanath Wildlife Divisions. This was done at the direction of the National Tiger Conservation Authority.

The survey documented 148 tigers in the reserve, up from 104 recorded in 2022, 99 in 2018 and



The reserve had recorded 104 tigers in 2022, 99 in 2018 and 96 in 2014. Express

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96 in 2014. Reserve director Sonali Ghosh said these findings show that Kaziranga has the third-highest density of tigers in the world, after Corbett Tiger Reserve in Uttarakhand and

the first time. “This growth is particularly notable due to the first-time sampling of the Biswanath Wildlife Division, where 27 newly recorded tigers have contributed to the overall increase. In the core Eastern Assam Wildlife Division, the population grew from 104 in 2022 to 115 in 2024, while the Nagaon Wildlife Division maintained a stable count of six tigers,” it states.

The survey was conducted over 103 days using 293 paired camera traps across 1307.49 square kilometres, which yielded 4,011 tiger images in 242 locations. The report states that the right-flank stripes of the animals in these images were used to identify 148 adult tigers – 83 females, 55 males, and 10 with undetermined gender.

“The park’s diverse ecosystems, including Eastern wet allu-

vial grasslands, semi-evergreen forests, tropical moist mixed deciduous forests, and wetlands, provide an ideal habitat for tiger and megaherbivores. The conservation status of tigers in Kaziranga has been strengthened through rigorous protection measures, including anti-poaching efforts, habitat restoration, and community-based conservation initiatives,” states the report.

“Despite these successes, Kaziranga’s tiger population faces persistent challenges, including habitat fragmentation, human-wildlife conflict, and the pressures of agricultural expansion and infrastructure development around the tiger reserve. The impacts of climate change further complicate conservation efforts, necessitating adaptive management strategies to ensure long-term population viability,” it states.



# NISAR set for launch today

ANONNA DUTT & ANJALI MARAR  
NEW DELHI/BENGALURU, JULY 29

IN ONE of its most anticipated missions in recent years, the Indian Space Research Organisation (ISRO) will launch NISAR (NASA-ISRO Synthetic Aperture Radar), a sophisticated and expensive earth observation satellite developed in collaboration with NASA, from Sriharikota on Wednesday.

The launch will see India's GSLV rocket, for the first time, inject a satellite into a Sun Synchronous Polar Orbit, an orbit in which the satellite will scan over the same point on Earth at the same time each day. Usually, PSLV is utilised for such an orbit, but NISAR is a heavier satellite, beyond the capability of a PSLV.

The GSLV launch vehicle has so far been used to put satellites only in a geosynchronous transfer orbit, a highly elliptical orbit that is used as an intermediary to easily take satellites to the high geosynchronous orbits at around 36,000 km where they move with the Earth to remain over the same location every single day.

"This has been a much-anticipated launch," said ISRO chairperson Dr V Narayanan.

The NISAR satellite is capable of mapping the Earth during the day and the night and in any weather condition. The satellite will scan the entire globe every 12 days, providing a series of very detailed images of the Earth's surface that can capture changes even as small as a centimetre.

"This is a very advanced satellite that can capture even the

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slightest of the movements on the Earth's surface. These observations can help them in mapping changes such as volcanic hazard or landslides and prepare in advance. This is a result of a collaboration that started nearly 10 years ago," said former ISRO chairperson K Sivan.

The mission marks the first hardware collaboration between the Indian and the US space agencies, with each providing a different radar system for the satellite. NASA's L-band radar and ISRO's S band radar are sensitive to two different sizes of features on the Earth as well as two different types of attributes such as moisture content, surface roughness and motion.

The NISAR satellite is meant to capture detailed information about various systems on Earth such as the changing surface and interior of the planet like magma and volcano eruptions, the cold regions with its ice cover, glaciers, sea ice and permafrost, the terrestrial ecosystems like forest cover, rivers, crop fields as well as the water. It will provide important data to researchers across the globe for better management of natural resources, planning for natural disasters, and importantly, understanding the effects and the pace of climate change.

NISAR cannot predict floods or forest fires but can observe the minutest of changes and provide risk assessment analysis.

The 2,392-kg satellite will be put in a 747-km circular orbit nearly 19 minutes after launch. The mission life of the satellite is five years.

GSLV's previous launch, earlier this year, had not been entirely successful.

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## BOOST TO CALAMITY RESPONSE

Some of the planned applications of NISAR satellite:

**MONITOR CHANGES IN SURFACE WATER AND SOIL MOISTURE:**  
This data can provide actionable points to mitigate or better deal with occurrences such as flooding, landslides, crop failures, droughts, wildfires

**EARTHQUAKES:**  
Data from the satellite can be used to map fault zones where an earthquake is likely to occur. Their long-term study can also help in forecasting. Data can also be used to locate the areas of damage after a quake

**PERMAFROST:**  
NISAR can observe the changes to the permafrost — the frozen sub-surface layer — that can inform about the communities that may be affected

**VOLCANIC ERUPTIONS:**  
The data can be used to monitor volcanic process, build models of sub-surface magma movement before, during and after eruptions. This will help develop more realistic models of active volcanoes, which are critical for eruption forecasting





JAWED ASHRAF

UK-India FTA is a template for other agreements. It serves Delhi's economic and geopolitical objectives

THE FORMAL SIGNING of the India-UK Comprehensive Economic and Trade Agreement (CETA) headlined Prime Minister Narendra Modi's visit to the UK. Since leaving the EU, "Global" Britain has been on a spree to conclude or join FTAs. After a period of FTA pause, India, too, is on an accelerated pursuit of trade agreements. Though neither is the other's major trading partner, the salience of CETA lies in the symbolism and substance, the future potential, the many tangible and intangible dimensions of this partnership, and the infusion of strength into a relationship that faces challenges not from customary colonial memories, but from contemporary challenges to India's security and integrity.

CETA's significance also derives from its ambition. FTAs either cover areas that fall within the mandate of the WTO or go deeper in covering commitments and harmonisation on a range of national economic policy issues to facilitate stronger economic partnership among signatories. CETA embodies the latter. The two governments have hailed CETA as a landmark agreement because of the balance of openings and protections, coverage and scope and also because, from India's standpoint, it is the first comprehensive one with a major Western partner that defines the template for others, including with the EU.

CETA is historic for another reason. It is an important milestone in India's — as in the world's — growing reliance on bilateralism and regionalism at a time when the multilateral trade regime is eroding as its architect, which is still the world's most powerful economy, turns its back on it. President Donald Trump has abandoned the foundational principle of the global trade regime. As in other domains, the US no longer finds the system it created useful or attractive. Trump has accelerated a longer-term trend in the US since the Global Financial Crisis (GFC) of 2008 towards trade hesitancy, if not hostility, and protectionism, through the successive tenures of presidents Barack Obama, Trump and Joe Biden. There is a bipartisan consensus that the US will not surrender its sovereignty to the binding rule-making role of the WTO. The current sentiments will continue to shape the US political economy.

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India signed a spate of agreements during the UPA era, mostly in Asia. However, not all of them were with competitors like ASEAN, but also with complementary economies like Japan and Korea. That these agreements had disappointing outcomes was as much due to their terms as to our lack of competitiveness. Their lessons are shaping the choice of partners and the terms of the agreements, and alignment with domestic policies and incentives. Nonetheless, global trends point to an enhanced need for comprehensive FTAs.

For the US and the West broadly, the problem has deeper structural roots in the consequences of the recent wave of globalisation that began in the 1970s and peaked by the time of the GFC. The first wave of globalisation from 1870 to 1914 led to the concentration of prosperity and power in the industrialising West and America's rise as a major power. By contrast, the recent phase triggered Asia's rise, China's emergence as a major power and the West's relative decline with disruptive political consequences in the advanced countries. In particular, it has resulted in China's extraordinary accumulation of industrial and technological power and dominance in key industries and supply chains in a fundamentally different political and economic system, incongruous with a transparent trade regime. The concentration risk was laid bare by the Covid pandemic. Further, the sharpening geopolitical competition has manifested in trade and technology. The war in Ukraine deepened shifts and uncertainty. Together, these factors have put globalism and its scaffolding under extreme stress.

Calls for reshoring and industrial sovereignty face limitations of lost capabilities, and deeply entrenched Global Value Chains (GVCs) that various estimates put at 50-70 per cent of global trade. Trade remains essential for all nations. But as nations seek to derisk, diversify and rebalance trade relations in a world in flux, they seek long-term commitment, trust, assurance and resilience through bilateral and regional agreements. The number of such agreements, although within the WTO framework, has risen rapidly in the past two decades, with an increase in momentum after the GFC and the Covid pandemic.

Trump's strategy will accelerate the trend. For one, despite his impetuosity, the legislative uncertainty of his authority and questionable enforceability of the "deals", countries are seeking exclusive and competitive bilateral agreements with the US. At the same time, hedging strategies, against both US unpredictability and China's dominance, will trigger new bilateral or regional agreements, as well as expansion, restructuring and interlocking of existing regional agreements: The Trans

Pacific Partnership was resuscitated as the Comprehensive and Progressive Trans Pacific Partnership (CPTPP) after the US's exit.

India's preferred path is more manageable bilateral agreements with countries or groupings rather than participation in regional agreements. India signed a spate of agreements during the UPA era, mostly in Asia. However, not all of them were with competitors like ASEAN, but also with complementary economies like Japan and Korea. That these agreements had disappointing outcomes was as much due to their terms as to our lack of competitiveness. Their lessons are shaping the choice of partners and the terms of the agreements, and alignment with domestic policies and incentives.

Nonetheless, global trends point to an enhanced need for comprehensive FTAs. With the atrophying of the predictable, non-discriminatory global trade regime, FTAs will become determinants of competitiveness. These have become essential for creating opportunities for our services sector and mobility of our professionals, and for access to critical minerals, technology, innovation and energy.

Above all, there is a strong correlation between high-quality FTAs and the GVCs.

Assured integration into GVCs will serve our twin objectives of rapid industrialisation and export growth at scale. It is even more critical now as various studies estimate the share of potential bottleneck products in global trade to have doubled since 2000 to around 20 per cent, with almost 66 per cent of the share of the global export value in these products now coming from East Asia-Pacific. This also means that, besides the new FTA with Australia, we must revisit the CEPA/CECA with Japan, Korea and Singapore, not just to improve their terms but also for assured access to critical inputs to fully exploit the potential of FTAs with Western partners. This will also require finding a *modus vivendi* with China.

As India pursues its national transformation at a time of global disorder, shaping our external economic engagement strategically is both a geopolitical necessity and an economic imperative.

The writer is a retired ambassador



ADITI NAYAR

## A LIMITED BORROWING SPACE

Assistance by Centre has played a key role in boosting capital expenditure of states

THE FISCAL HEALTH of the Centre and the states is a key part of the overall macro picture. This article analyses the fiscal trends for a large sample of 17 state governments (excluding Arunachal Pradesh, Assam, Bihar, Goa, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim) for FY2025 and what they augur for the current fiscal and the medium term. These states account for about 90 per cent of India's GDP. Typically, a wide variation has been observed in the states' actual fiscal metrics relative to the Budget and Revised Estimates. Therefore, the focus here is on the trends revealed by the provisional actuals (PA) for FY2025 relative to the actual position in the previous year.

The FY2025 PA indicates a widening in the combined fiscal deficit of 17 states to Rs 9.5 trillion (3.2 per cent of the Gross State Domestic Product or GSDP) from Rs 7.8 trillion (2.9 per cent of GSDP) in FY2024. This was driven by the near-doubling of their revenue deficit to Rs 2.1 trillion (0.7 per cent of the GSDP) in FY2025 PA from Rs 1.1 trillion (0.4 per cent of GSDP) in FY2024, and to a relatively smaller extent by a rise in capital spending (by Rs 678 billion or 0.2 per cent of GSDP).

The spike in revenue deficit levels in FY2025 was due to a moderation in the pace of growth of revenue receipts, which increased to 6.3 per cent in FY2025 from 7.9 per cent in FY2024, amid a stable year-on-year rise of 9 per cent in revenue expenditure.

The rise in the states' revenue deficit in FY2025 is in contrast to the compression at

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In FY2025, Rs 1.5 trillion was disbursed as capex loans to all states, up from Rs 1.1 trillion in FY2024. Based on the previous shares, the proportion of 17 states in the capex loan in FY2025 is estimated at Rs 1.13 trillion, up from Rs 0.8 trillion in FY2024. This suggests that the increase in the capex loan funded over 40 per cent of the incremental capital spending of the sample set in FY2025.

the Centre. A higher share of revenue deficit in the fiscal deficit is not a favourable outcome for state finances. This indicates that the limited borrowing space is partly used towards funding the revenue expenditure, which tends to be less productive compared to capital spending. For instance, the total capital spending of the 17 states in FY2025 PA comprised 78 per cent, lower than the trend during FY2022-24, wherein 80-90 per cent of the fiscal deficit was attributed to capex.

The combined capital spending of the 17 states was Rs. 7.4 trillion in FY2025 PA, Rs 678 billion higher than the amount spent in FY2024. The incremental capex of the states in FY2025 PA was sharply lower than the incremental spending of Rs 910-1,120 billion during FY2022-FY2024. Another discouraging trend is the undershooting in capex relative to the Revised Estimates (RE) by Rs 1.1 trillion, once again in contrast to the overshoot seen for the Centre. The capex of the states in FY2025 till the end of February was lower than the spending in the previous year. In March 2025, the states' capex surged by 42 per cent YoY to Rs 2.2 trillion from Rs 1.5 trillion in March 2024, led by a pick-up in spending by Uttar Pradesh, Andhra Pradesh, Madhya Pradesh, Maharashtra, Tamil Nadu and Karnataka. As much as 30 per cent of the annual combined capex of the sample states was incurred in March 2025, much higher than the proportion of spending seen in March 2024. Incidentally,

back-ended capex is one of the reasons that the states' borrowing through state government securities tends to spike in March.

The amounts disbursed by the GoI to the states under the special assistance for capital expenditure (capex loan scheme) in recent years have played a key role in boosting spending on capex. In FY2025, Rs 1.5 trillion was disbursed as capex loans to all states, up from Rs 1.1 trillion in FY2024. Based on the previous shares, the proportion of 17 states in the capex loan in FY2025 is estimated at Rs 1.13 trillion, up from Rs 0.8 trillion in FY2024. This suggests that the increase in the capex loan funded over 40 per cent of the incremental capital spending of the sample set in FY2025.

For the budget estimates of FY2026, 17 states have indicated capital spending of Rs 9.5 trillion, 29.2 per cent higher on a YoY basis or an incremental spending of Rs 2.1 trillion in FY2026, relative to the FY2025 PA. This is double the average incremental capex of Rs 1 trillion during FY2022-FY2024, and appears somewhat implausible.

Beyond FY2026, the recommendations of the Finance and Pay Commissions, as well as changes related to GST compensation cess, will cast an indelible mark on the evolution of state finance. Any incentives towards maximising capex within the permitted borrowing space and fiscal deficit anchor would certainly be valuable.

The writer is chief economist, head- Research & Outreach, ICRA



# West vs Rest, a fiction

Many are keen to proclaim the decline of the Western global order. But its legacies of reason, scepticism, individual liberty and secularism continue to be powerful magnets all over the world



RAJA-MANDALA  
BY C RAJA MOHAN

SPEAKING AT THE 1957 Moscow Conference of Communist and Workers' Parties, Chinese communist leader Mao Zedong declared that the “East wind will prevail over the West”. The occasion was the 40th anniversary of the 1917 Bolshevik Revolution. For Mao, the “East wind” meant the “socialist camp” (led by the Soviet Union and China), and the “West wind” represented the capitalist countries (led by the US). He declared that the balance of world forces had shifted decisively in favour of the socialist camp in the middle of the 20th century.

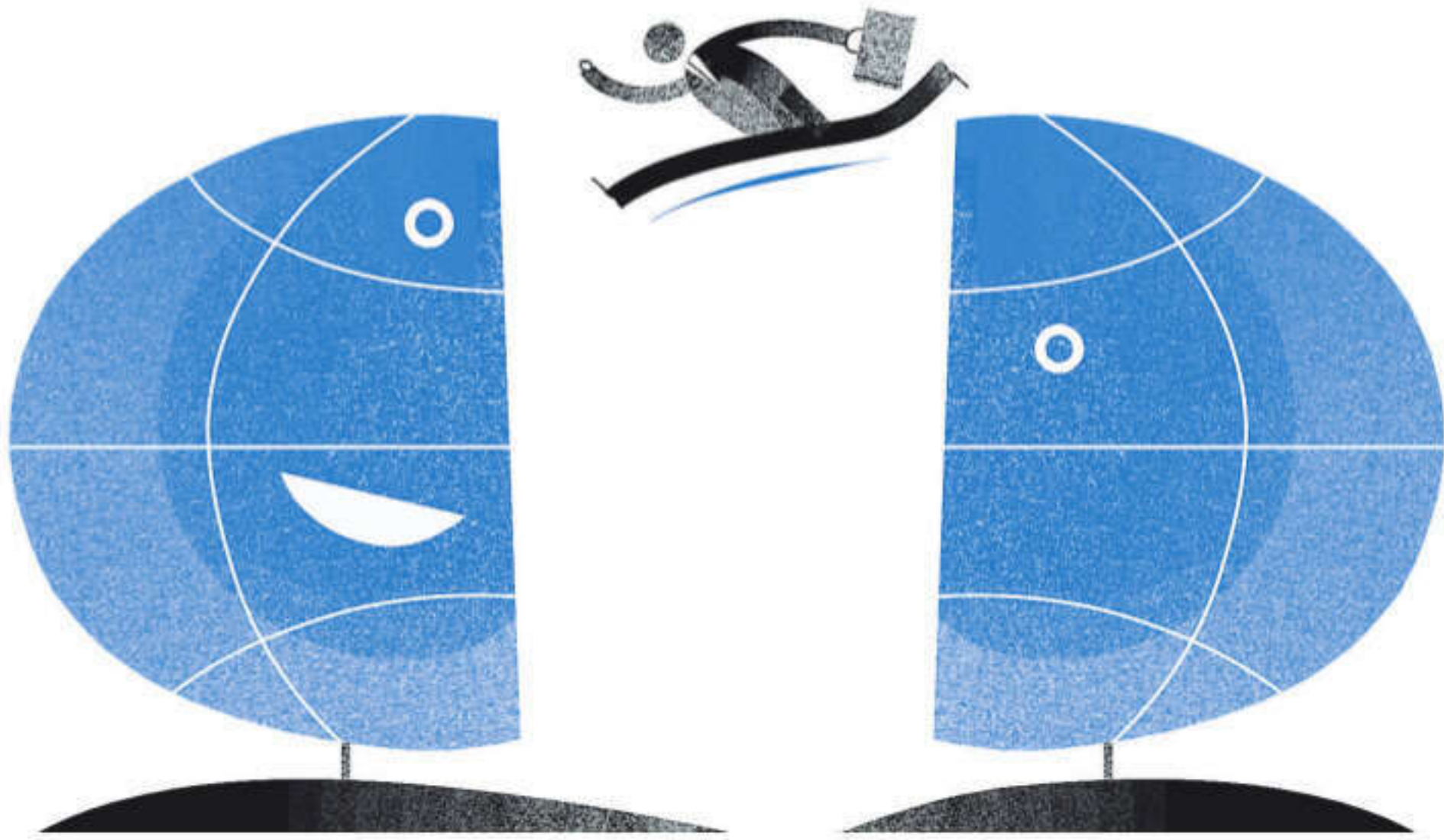
The idea that the West is in decline and that it will soon be swamped by the rising tide of “the rest” has been a recurrent theme since the encounter between the West and the rest began several centuries ago. Here is the problem. The West refuses to disappear, and the rest is having a difficult time taking charge.

Mao himself embarked on a fight with the Soviet Union barely two years after making the grand declaration on the rise of the East wind. He broke the socialist camp, divided the communist movement all over the world, and paved the way for an alliance between Communist China and the “evil empire”, the US. The marriage between Western capital and the Chinese market produced a breathtaking global economic expansion for nearly five decades. It also made Beijing the second most important power — economic, technological and military — in the world.

A risen China now talks again of leading the East, now rebranded as the “Global South” or the “Global Majority” to victory against a declining West. Declinism is also in fashion in Western academia and think tanks. Many fear the barbarians from the East are ready to show up at the gates. The fear in the West is matched by the irrational exuberance in the rest about the impending collapse of the US-led world order.

Sceptics might say, not so fast. They point to US President Donald Trump's entirely unanticipated initial successes in single-handedly rewriting the rules of global trade. The rest did not join hands to counter Trump. Most of them have queued up to negotiate bilateral trade agreements with him. The claim that Trump is winning is vigorously contested. Is Trump accelerating the decline of the American empire and the West, or is he heralding its resurgence? While the debate on this question will continue, Amitav Acharya, one of the leading scholars of international relations, puts the debate in a deep historical perspective.

Acharya's new book, *The Once and Future World Order*, seeks to dismantle the conceptions of global order built around the rise of the West. He reminds us that there was a world before the West and another after it. Acharya argues that the pursuit of order — rules, norms, and institutions that enable peace and promote commerce — did not begin with the modern West. He suggests it is rooted in ancient, diverse civilisations. Join FREE Telegram Channel <https://t.me/+jUYKq0AFHBaWGGQ1>



C R Sasikumar

across the world. Far from a future dominated by a new hegemon or descending into chaos, he foresees a decentralised, inclusive system drawing on both Western and non-Western traditions.

Acharya asserts that ancient Sumer, China, India, Greece, Mesoamerica, and the Islamic world all devised ways to manage interstate relations. While the post-World War II Liberal International Order led by the US shaped the modern age, Acharya sees it as just one chapter in a longer global history.

The Western-led order, forged through empire, conquest, exploitation and ruthless Cold War geopolitics, was never as universal or complete as its proponents claimed. Global norms evolved through continuous cross-civilisational borrowing. The West never monopolised the ideals of peace, law, or cooperation.

In confronting anxieties about Western decline, Acharya offers a different narrative. Rather than a harbinger of disorder, the erosion of Western primacy creates space for a more equitable global structure. He introduces the concept of a “multiplex” order — where no single state dominates, and multiple actors, from states to international institutions and non-state players, share responsibility for shaping norms.

Rejecting both the “clash of civilisations” thesis and the idea of an inevitable Chinese hegemony, Acharya advocates a cooperative system grounded in civilisational pluralism. He envisions a world not of imposed norms but of negotiated consensus — a “confluence of civilisations”. This future demands learning from each other, not dominance. *The Once and Future World Order* is a timely corrective to the dominant narratives in the West and the East. Acharya's central message is that the rise of non-Western actors is not a crisis but a chance to build a fairer, more representative system.

Acharya's hopeful vision of a multiplex order is persuasive but incomplete. It downplays serious constraints in the East that hinder its capacity to shape a just and effective global order. These include authoritarianism, the rise of a state that is free to curb individual freedoms in the name of claimed collec-

There is no question that China has been the most successful non-Western world state in bringing economic prosperity and in rooting out the feudal vestiges. But it is yet to redeem the Chinese national movement's promise to deliver democracy to its people. Externally, China is unable to overcome the temptations of national chauvinism and the urge to dominate its neighbourhood. That, in turn, shatters ideas of Asian unity and the Chinese ability to lead a compact of the rest against the West.

tive interests, violent politics based on exclusive religious, caste, and linguistic identities, and the empowerment of violent vigilante groups that destroy social peace.

There is no question that China has been the most successful non-Western world state in bringing economic prosperity and in rooting out the feudal vestiges. But it is yet to redeem the Chinese national movement's promise to deliver democracy to its people. Externally, China is unable to overcome the temptations of national chauvinism and the urge to dominate its neighbourhood. That, in turn, shatters ideas of Asian unity and the Chinese ability to lead a compact of the rest against the West.

If the Western oppression is real, the Eastern ones are worse. Meanwhile, students, scientists, technologists, entrepreneurs, the rich and political dissidents from the East continue to migrate to the West, if they can. The soft power of the West remains a powerful magnet to those who see themselves as suffocating under the Eastern regimes.

Acharya's critique of Western dominance is compelling, but not all aspects of the Western legacy can or should be discarded. The Enlightenment ideals of the 17th and 18th centuries — reason, scepticism, science, individual liberty, and secularisation of society away from religious dominance — are at the very foundation of Western primacy in the last three centuries.

If the East wishes to lead in shaping the world order, it must engage these ideals critically and constructively. Any notion that the East can rise by short-circuiting these values is an illusion. It only delays and derails the effort to rise. The battles against political, religious, and other absolutisms remain to be fought and won in the East. Until then, a rising East will not present an alternative model — only a different and less attractive one. The profound internal contradictions within and across the East will continue to keep it well behind the West.

The writer is distinguished fellow at the Council for Defence and Strategic Research and contributing editor on international affairs for The Indian Express



JAYANT CHAUDHARY

# A roadmap for learning

Surveys like PRS 2024 can provide key insights for a stronger education system

IN RECENT YEARS, education in India has not only expanded in scale but matured in ambition. Our reforms today are about quality, pedagogy, and learning outcomes. We have made a deliberate shift towards ensuring that every child in the country not only attends school but also truly learns. To understand if that is happening, we must pause and ask the right questions. What are our children learning? Are schools enabling them to build essential skills at each stage of their education? These questions require reliable, scientific answers.

As an expert noted, “Students can learn despite poor teaching, but they cannot overcome poor assessment.” This reminder is crucial because the best way to determine the effectiveness of our education system is through large-scale assessments. These analyse macro trends to determine educational effectiveness. They find patterns in data from different locations, subjects, grades, and schools. This form of evaluation helps teachers and policymakers understand the strengths and weaknesses of students. Overall, it helps diagnose systemic issues and buttress policymaking.

Over the past two decades, India has gradually built capacity in this area. Advancing from the National Achievement Surveys (NAS) to PARAKH Rashtriya Sarvekshan (PRS) 2024, the scale of the survey has grown to cover 21.15 lakh students in 74,229 schools across the country. Students from Grades III, VI, and IX were assessed to correspond with the end of

the foundational, preparatory, and middle stages of schooling. These stages are now well-established under the new curricular structure in line with the National Education Policy (NEP) 2020.

At the foundational stage, the data show that India has not only recovered from the learning losses of the pandemic but, in many cases, surpassed earlier benchmarks. In Grade III, 57 per cent of children demonstrated proficiency or above in Language, up from 39 per cent in 2021 and 47 per cent in 2017. In Mathematics, the figure has jumped to 65 per cent, compared to 42 per cent in 2021. These gains reflect the serious and sustained efforts made under the NIPUN Bharat Mission, underscoring how targeted support, teacher mentoring, and early-grade interventions are beginning to bear fruit. The data also show that government schools in rural areas have, in some cases, outperformed their urban and private counterparts in foundational grades. This is a significant development, demonstrating what focused, systemic reform can achieve. However, as we move to Grades VI and IX, the picture becomes more complex. Central government schools have performed well overall, but marginal gaps persist by gender and region, particularly in Mathematics and Science. These are areas that need urgent focus.

Many comparisons have been made between PRS 2024 and earlier surveys, which are misplaced and require clarification. The struc-

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ture of the assessment has changed. Earlier surveys focused on Grades V and VIII, whereas this edition concentrates on Grades VI and IX, aligning with the new curricular stages. Moreover, the shift from textbook learning outcomes to competencies means the assessment tools are fundamentally different. Directly comparing a Grade V outcome from NAS 2021 with a Grade VI outcome from 2024 is methodologically unsound. Only Grade III scores are comparable across all three surveys, and the improvement in these scores is established. Any interpretation that suggests a decline in performance based on comparisons with other grades risks misrepresenting the actual story.

What we now have is not just a report card, but a roadmap. The actual value of the data from the survey lies in how they are used locally. PRS provides district-level insights, and it is now the responsibility of states, districts, and school systems to translate these findings into granular, need-based interventions. Every state and UT will need to study its data — where learning levels are strong, where gaps persist, which support systems are working and which are not. The Centre will continue to provide guidance, frameworks, and resources; however, the real impact will come from what is done at the school and district levels. Our goal is not just to meet national benchmarks, but to achieve international comparability, and we are steadily moving in that direction.

The importance of assessments, however, does not end with school education. We must also focus on how young people transition into the world of work, entrepreneurship, and economic participation. Skills matter as much as academics. That is why, soon, the government will initiate a qualitative, large-scale skills assessment that will help us understand the skill-readiness of our population, map regional variations, and plan targeted interventions in vocational education and skilling. The recent adoption of a data-driven ITI grading system and inclusion of NEET (Not in Education, Employment or Training) in the PLFS exercise is also aimed at providing key inputs for our reform process.

The ambition is to link learning to livelihood, ensuring that every young Indian is not only educated but also employable, entrepreneurial, and equipped to contribute meaningfully to the country's development.

PRS 2024 is a powerful reflection of how far we have come. But it is also a signal of what lies ahead. As we build stronger foundations in school education and expand the horizon of skill development, we remain committed to a system that is inclusive, evidence-driven, and future ready.

The writer is Union Minister of State (Independent Charge) for Skill Development and Entrepreneurship, and Minister of State for Education, Government of India



SLOWLY ALLOWING CHINESE COMPANIES TO PARTNER WITH INDIAN ENTITIES

Amid trade upheaval, India rethinks China blockade to further tech manufacturing

SOUMYARENDRA BARIK  
NEW DELHI, JULY 29

NEARLY HALF a decade ago, India adopted a ‘China-out’ strategy of sorts, in response to the border clashes in 2020, introduced an anti-Beijing foreign investment policy, and kept Chinese firms out of critical sectors like telecommunications.

Now, however, necessitated by changing geopolitical dynamics, following US President Donald Trump’s unprecedented onslaught on global trade, and India’s own manufacturing ambitions, New Delhi is undertaking a serious rethink on the existing strategy, and is strongly considering particularly easing China-based entities’ entry into the country, with some riders. The most recent sign of the thaw came in the form of a recommendation made by the government think tank Niti Aayog, earlier this month, to ease India’s foreign direct investment (FDI) rules, which involves government scrutiny into investments made by Chinese firms. Earlier, the Economic Survey 2023–24 had sprung a surprise by advocating attracting investments from Chinese companies to boost exports.

India had earlier put restrictions on investments from China

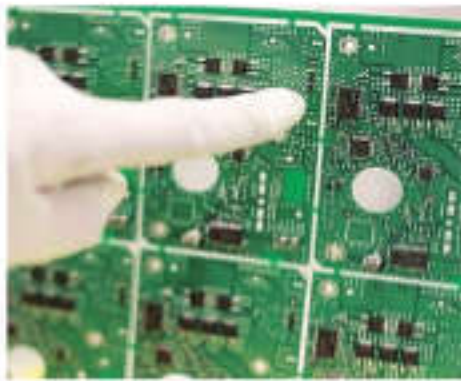
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through Press Note 3 in April 2020 to curb potential opportunistic takeovers of Indian companies during the Covid-19 pandemic by making a government approval mandatory for all investments from countries sharing a land border with India, including China. It continued to be in force in the wake of national security concerns due to border tensions after the Galwan clash.

Early signs of a thaw

There have been some signs that India is slowly, but surely, allowing Chinese companies to partner with Indian entities. Dixon Technologies, which is a major Indian electronics assembly company, received approval from the IT Ministry to set up a joint venture with China-based Longcheer. The new company will focus on manufacturing and supplying a wide range of electronics, including smartphones, tablets, true wireless stereo (TWS) devices, smartwatches, AI-powered PCs, automotive electronics, and healthcare devices. Dixon will hold 74 per cent in the JV, and the remaining 26 per cent will be with Longcheer.

“We can not continue to avoid China. The truth is, they make things which we need for our assembly operations, and if we want to go deeper into the supply chain,



File

EXPLAINED

Changing geopolitical dynamics

NECESSITATED BY changing geopolitical dynamics, following US President Donald Trump’s unprecedented onslaught on global trade, and India’s own manufacturing ambitions, New Delhi is undertaking a serious rethink on the existing strategy on China.

our companies have to work with Chinese companies,” a senior government official said. The IT Ministry, earlier this year, notified a Rs 23,000 crore policy for electronic components manufacturing, and it is widely anticipated that Indian firms would partner with Chinese entities to partici-

pate in the scheme, given the expertise they have.

Recently, India also resumed issuance of tourist visas to Chinese nationals as part of a broader effort to repair bilateral ties. Earlier this month, External Affairs Minister S Jaishankar travelled to China where he had underlined that “differences should not become disputes” nor should “competition ever become conflict” and that while India and China have made good progress in the past nine months towards the normalisation of bilateral relations, they should work to address de-escalation on the border.

China out in letter, not in spirit

Of course, while the government managed to keep China out in some sectors like finished smartphones, imports from the country continued, particularly for a number of electronic components, which are crucial for the final assembly process in India, but for which New Delhi has little to no production base.

The Indian Express had earlier reported that in the financial year 2023–24, India imported electronic components worth over \$12 billion from China and \$6 billion from Hong Kong, with the two accounting for more than half of total such imports to India —

suggesting that the country’s growing footprint in electronics manufacturing was not necessarily translating into reduced reliance on Beijing.

In the last five years, electronics imports from China and Hong Kong have far outnumbered imports from other major manufacturing hubs like South Korea, Japan, Taiwan, and all ASEAN countries, combined. China, for its own part, and seeing India’s growing manufacturing footprint, also imposed restrictions on its companies, making it harder for them to do business with Indian firms.

For instance, India’s share in US smartphone imports surged to nearly 36 per cent in the first five months of 2025, from about 11 per cent in 2024. China, which continues to dominate the product category, saw its share drop from 82 per cent to 49 per cent over the same period, this paper had reported earlier.

China’s actions include pulling workers out of India, and making it more difficult for India-based manufacturing companies to obtain capital goods, which are needed for the assembly process. China has also imposed a blockade on several rare earth metals and magnets, and while the prime target of that restriction is the United States, India has found itself caught in the crosshairs.

IN APRIL, IMF PROJECTED INDIA’S FY26 GROWTH AT 6.2%

IMF upgrades India’s FY26 GDP growth forecast to 6.4% as trade tensions ease

SIDDHARTH UPASANI  
NEW DELHI, JULY 29

THE INTERNATIONAL Monetary Fund (IMF) on Tuesday raised its Gross Domestic Product (GDP) growth forecast for India to 6.4 per cent for both 2025–26 and 2026–27 on account of easing global trade tensions, with the world economy also seen expanding at a slightly faster pace than what the multilateral organisation had predicted in April.

“In India, growth is projected to be 6.4 per cent in 2025 and 2026, with both numbers revised slightly upward, reflecting a more benign external environment than assumed in the April reference forecast,” the IMF said in an update to its World Economic Outlook report, referring to India’s fiscal years that begin in 2025 and 2026.

According to non-partisan policy research centre The Budget Lab at Yale, US consumers faced an overall average effective tariff rate of 18.2 per cent as on July 28, down from 28 per cent on April 9.

India’s GDP is estimated to have increased by 6.5 per cent in 2024–25, the lowest growth rate in four years. The Reserve Bank of India (RBI), meanwhile, expects the GDP to grow by another 6.5 per cent in the current fiscal, with the Finance Ministry estimating it in the range of 6.3–6.8 per cent. For 2026–27, the RBI on April 9 had forecast a growth rate of 6.7 per cent. Back in April, the IMF

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INTERNATIONAL MONETARY FUND PROJECTIONS		
	New forecast	Old forecast
India*	6.4%	6.2%
World	3.0%	2.8%
Brazil	2.3%	2.0%
Canada	1.6%	1.4%
China	4.8%	4.0%
Euro Area	1.0%	0.8%
Japan	0.7%	0.6%
Russia	0.9%	1.5%
UK	1.2%	1.1%
US	1.9%	1.8%
* India forecast for FY26; 2025 for others		Source: IMF

had cut its growth forecasts for India by 30 basis points (bps) to 6.2 per cent for 2025–26 and by 20 bps to 6.3 per cent for 2026–27 due to “higher levels of trade tensions and global uncertainty”. Since then, the tariff war waged by the US has eased somewhat, with IMF Chief Economist Pierre-Olivier Gourinchas calling the Trump administration’s April actions an “unprecedented escalation”.

Moreover, global financial conditions have eased and the US dollar has weakened around 8 per cent since January, allowing the IMF to now project that the global GDP will grow 3 per cent in 2025 and 3.1 per cent in 2026, up from 2.8 per cent and 3 per cent, respectively, predicted in April.

‘Historically high’ tariffs

However, the IMF continued to warn that while the “modest decline in trade tensions” had contributed to the resilience of the global economy, tariffs remain “historically high” and global policy remains highly uncertain, with risks to the world “firmly to the downside”.

“...compared to our pre-April 2 forecast, global growth is revised downwards by 0.2pp (0.2 percentage points) this year. At around 3 per cent, global growth remains disappointingly below pre-COVID average. And we continue to project a persistent decline in global trade as a share of output despite the recent front-loading, from 57 per cent in 2024 to 53 per cent in 2030,” Gourinchas said. One percentage point is equal to 100 basis points.

The other countries expected by the IMF to grow at a faster pace now in both 2025 and 2026 include the US, Canada, China, Brazil, Saudi Arabia, and Nigeria. China, in fact, received the largest growth forecast upgrade by the IMF, with its GDP now seen expanding 4.8 per cent in 2025, up from 4 per cent predicted in April.

FULL REPORT ON [www.indianexpress.com](https://www.indianexpress.com)



THE FINNS ARE DESPERATELY LOOKING FOR SOLUTIONS BECAUSE THEY GET ONLY TWO MONTHS OF SUMMER

Finland’s short, precious summers are plagued by ‘shocking amount’ of goose poop

AMELIA NIERENBERG & JOHANNA LEMOLA  
HELSINKI, JULY 29

EACH SUMMER, sun-starved Finns flock to Hietsu Beach, a sandy stretch in Helsinki, to exercise, splash and attempt to tan. Amid a late July, record-breaking heat wave, a very different flock has also been stalking the surf around Finland’s capital: barnacle geese — white-faced, black-backed and ever-present. At night, they roost by the water’s edge. Come daytime, as people spread out their towels, they waddle away, leaving small mountains of excrement in their tracks.

“There can be a shocking amount of poop,” acknowledged Jukka Lundgren, the manager of Helsinki’s public beaches, who has spent 15 of his 18 years on the job trying to keep the sand from looking like a goose litter box. Now, after Sisyphean summers facing down the fowl’s feces, he thinks that he just may have found a solution: a wheeled cage with a strong resemblance to an old-fashioned hand lawn mower that is meant to sift the dirtied sand and whisk up only the offending feces. The contraption may be Helsinki’s most innovative poop-fighting effort yet. It is being tested this summer on about half

the city’s 25 public beaches. It was designed in-house by beach staff members, who drew inspiration from a public competition last year meant to crowdsource poop-scooping ideas. Finns are hardly alone in their fight against geese droppings, which can carry dangerous germs like E.coli and salmonella. In other places, officials fight the problem at its source: the birds themselves. In recent years, Canadians have tried to relocate the geese, New Yorkers hired a patrol dog and Californians moved to cull them. But Finland does not allow culling, and hunting geese in urban Helsinki would not be a feasible option anyway.



White-faced and black-backed Barnacle geese can be seen everywhere in Helsinki. NYT

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The Finns are desperate for solutions because their two months of summer are precious. They live so far north, that’s about all they get. However brief, the summers they do get can sometimes be unpredictably hot, with this past Sunday marking the 16th consecutive day that temperatures exceeded 30 degrees Celsius, or 86 degrees Fahrenheit, somewhere in Finland — a record. So on a recent afternoon — a warm day in a city where anything over 25 degree Celsius is considered hot — Pauli Puirava biked with his wife and two children to Hietsu Beach, whose formal name is Hietaranta. They brought some nuts and a few juice boxes for their children, 5 and 8. Helsinki’s humans are not the only ones who gravitate to the beach in summer. Last July, according to the Finnish Environment Institute, researchers counted about 5,300 geese in the Helsinki area. The plump birds are everywhere: They jaywalk across bike paths, swagger through crosswalks barefoot like the Beatles, preen in the parks and sometimes strut between office buildings and cultural landmarks in the city center. In parks, the problem can be even worse, with the droppings matting the grass and squishing into the treads of shoes. At the beach, sunbathers must check the sand before they lay down their blankets. Beach volleyball players hope that a dive does not bring them face to face with you know what. And parents, like Puirava, an entrepreneur keep a watchful eye out so their young children do not end up putting the feces in their mouths. “You have to watch your every step,” he said. To keep up with the cleaning demands, the ranks of summer maintenance workers have grown in the past decade, Lundgren said. Some beaches can see well over 40 pounds of excrement a day, he said.

NYT



EXPLAINED HEALTH

EXPOSURE OVER LONG TERM TO AIR POLLUTION INCREASES DEMENTIA RISK, SAYS A LARGE NEW STUDY

LONG-TERM exposure to air pollution is linked to an increased risk of developing dementia, a new large-scale study by Cambridge University researchers has found. The report, published in *The Lancet Planetary Health* last week, is the most comprehensive assessment of its kind, involving a systematic review of 51 studies and drawing on data from more than 29 million participants who had been exposed to air pollutants for at least one year.

The findings

The study, the most comprehensive of its kind, found a positive and statistically-significant association between three common air pollutants and dementia.

**PM2.5:** Predominantly produced by vehicle emissions and thermal power plants, PM2.5 is extremely fine particulate matter with a diameter of 2.5 micrometres or less. The study found that for every 10 micrograms per cubic metre (µg/m³) of long-term exposure to PM2.5, an individual's relative risk of dementia would increase by 17% from the baseline. For context, the average PM2.5 levels at Delhi's ITO pollution AQI monitoring station over the last 24 hours (as of Tuesday, 8 pm) was 72.

**NO2:** Nitrogen dioxide is produced primarily due to the burning of fossil fuels by vehicles, thermal power plants, and various industrial processes. The study found that for every 10 µg/m³ of long-term exposure to nitrogen dioxide, the relative risk of dementia increased by 3%. The average NO2 levels at the ITO station over the last 24 hours (as of Tuesday, 8 pm) was 86.

**SOOT:** Soot or black carbon PM2.5 comes from sources such as vehicle exhaust emissions and burning wood. The study reported that dementia risk jumped by 13% for each 1 µg/m³ of long-term soot exposure. The Central Pollution Control Board does not separately report BC/PM2.5 levels.

The explanation

Over the years, scientists have proposed several mechanisms to explain how air pollution may cause dementia. These primarily involve inflammation in the brain and oxidative stress (caused by



Delhi covered in a thick blanket of smog in 2023. Praveen Khanna

an imbalance between the production of reactive oxygen species and the body's ability to detoxify them, leading to cellular damage).

Both oxidative stress and inflammation play a role in the onset and progression of dementia, and air pollution is thought to trigger these processes through direct entry of pollutants into the brain or via the mechanisms that underlie lung and cardiovascular diseases.

Why this matters

Dementia is a term for several diseases that affect memory, thinking, and the ability to perform daily activities. The illness gets worse over time, and mainly affects older people. According to WHO, some 57 million people had dementia worldwide in 2021, with the number expected to increase to at least 150 million by 2050.

The rise in air pollution, especially in developing countries, might lead to an even sharper rise in cases. WHO data show that 99% of the global population breathes air that exceeds WHO guideline limits and contains high levels of pollutants, with low- and middle-income countries suffering from the highest exposures.

"These findings underscore the need for an interdisciplinary approach to dementia prevention. Preventing dementia is not just the responsibility of healthcare: this study strengthens the case that urban planning, transport policy, and environmental regulation all have a significant role to play," said Dr Christiaan Bredell from the University of Cambridge, and the study's first author. **ENS**

AMITABH SINHA & ANJALI MARAR  
NEW DELHI, BENGALURU, JULY 29

COUNTRIES routinely deploy Earth observation satellites in space for various purposes. But the satellite that the Indian Space Research Organisation (ISRO) will launch on Wednesday is anything but routine.

NISAR (NASA-ISRO Synthetic Aperture Radar), built jointly by ISRO and the US National Aeronautics and Space Administration, has been in development for more than a decade.

At more than \$1 billion, NISAR is the most expensive satellite ever built. It is also the first satellite equipped with two synthetic aperture radars (SARs), operating in different frequency bands, which will make it the most powerful Earth observation satellite ever, producing data and high-resolution images that will facilitate research in a range of fields.

What are SARs?

Radars, large dish-shaped antennas, send out signals in the non-visible spectrum of electromagnetic waves, typically microwaves or radio waves, and collect the signals that bounce back from objects.

The returning signals are analysed to obtain information such as the distance of the object from the radar, its velocity (if it is moving), composition, and texture. Larger antennas are usually able to collect more information.

A SAR is a special kind of imaging radar that is deployed in space where large dish-like radars cannot be sent. SARs use sophisticated technologies and algorithms to mimic the power and resolution of large ground-based radars.

NISAR's antenna, which is 12 metres in diameter, can produce images whose resolution would be comparable to those generated by a simple ground-based antenna of 20-km diameter, according to NASA.

A number of SAR-mounted satellites are currently deployed in space, but none of them have two SARs. ISRO's RISAT (Radar Imaging Satellites) series of satellites — now renamed to the EOS series — carry a SAR. Some of ISRO's other Earth observation satellites such as Cartosat and Oceansat do not use SARs.

What is the benefit of using SARs that operate in different frequency bands?

One of NISAR's SARs operates in L-band frequency, the other in the S-band. They are designed to capture complementary sets of images for the same location at the same time,

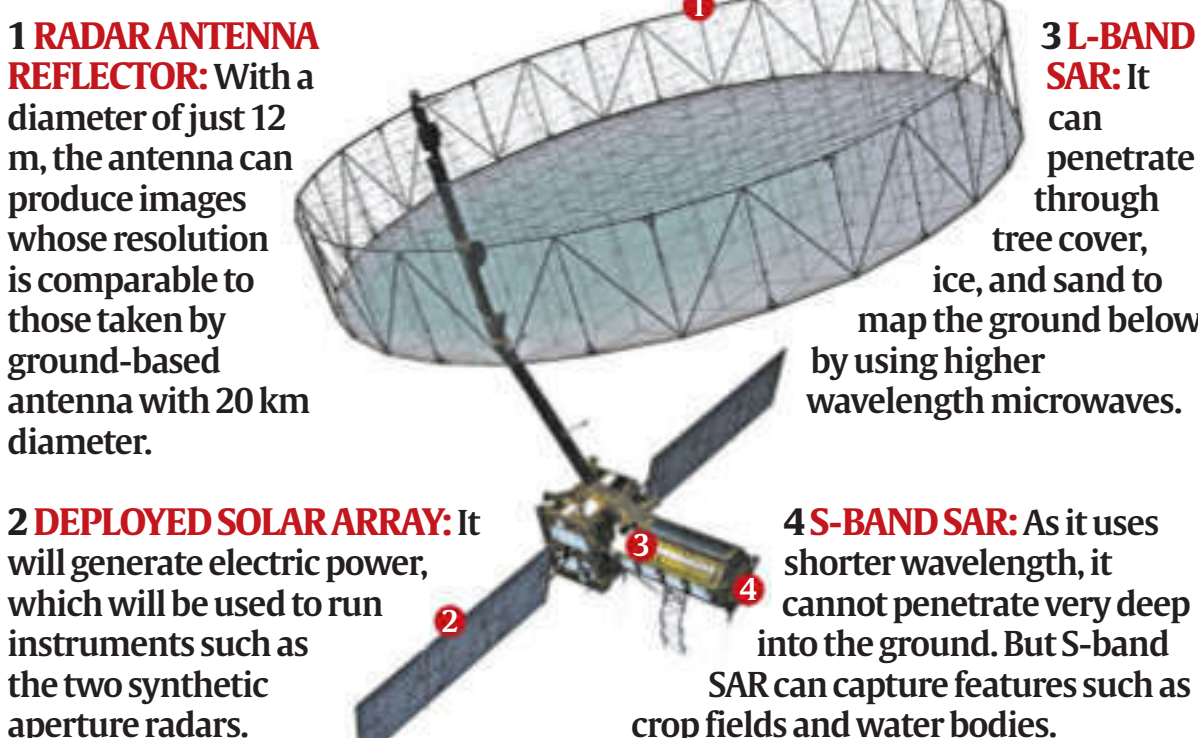
EXPLAINED SCIENCE

NISAR's two eyes on Earth

NISAR, launching today, has been jointly built by ISRO and NASA. It will be the most powerful of all Earth observation satellites, its two synthetic aperture radars operating in tandem in different frequency bands



NISAR at Satish Dhawan Space Centre in Sriharikota on July 18. AP



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Both the L-band and S-band radars can see through clouds, smoke, rain, and fog for an unfiltered view of the planet across all weathers, and through day and night.

The different wavelengths of the radars will enable them to capture different kinds of details on the surface. The L-band SAR, which uses higher wavelength microwaves, can better penetrate tree cover or vegetation, sand, and ice. It will capture minute details of surface undulations, and see through dense forest cover, for example, to map the ground below and measure tree trunk biomass, which is use-

The S-band SAR, which has a shorter wavelength, cannot go very deep, but is good for capturing larger features such as crop fields and water bodies. It can observe crops like soybean, corn, and sugarcane, and provide information on their growth and maturity stages.

As the L-band and S-band SARs will work together, they will give a comprehensive picture of the observed area — generating imagery of the kind that is not possible by integrating data from S-band and L-band SARs on two separate satellites. These satellites would not be able to look at the same place at the

same time, and any changes that occur between their observations would be missed.

Putting two SARs on the same satellite was a major engineering challenge, which was the main reason for the extended time that was needed to get NISAR ready. Each of the two radars requires its specific hardware, and integrating their signal processing capabilities without one of them interfering with the other needed sophisticated engineering.

What is the significance of ISRO partnering with NASA on NISAR?

Developing and installing SARs on NISAR involved significant costs. That is why a collaboration between two space agencies made sense.

The L-band SAR, the 12-metre antenna, and many other components and systems, including GPS control, have come from NASA. ISRO has contributed the S-band SAR, the rocket, the spacecraft and its sub-systems, and will carry out the launch.

The two agencies will handle mission operations from their respective ground stations. NASA has invested about \$1.16 billion in the mission; ISRO has given \$90 million.

The idea for a NISAR-like mission emerged in 2007 after a committee in the US recommended a space mission to study changes in land, ice, or vegetation cover. The mission aimed to carry out surface deformation monitoring to facilitate studies of earthquakes, landslides and volcanoes, and make observations that would help studies of climate change, the global carbon cycle, and changes in vegetation, biomass, and ice cover.

NASA began working on the project in 2008. ISRO came into the picture four years later, when it identified science studies and applications that were complementary to the primary objective of the mission. NASA and ISRO had collaborated earlier — there was a NASA payload on Chandrayaan-1 — but they had not jointly developed or executed a space mission. The NISAR deal was signed in 2014.

The launch comes at a time when the two countries have stepped into a more strategic partnership on space. India has signed on to the Artemis Accords, a US-led partnership on space exploration that is closely linked to NASA's Artemis program to return humans to the Moon. NASA and ISRO have also worked out a strategic framework for human space-flight cooperation. One of the first outcomes was the participation of Shubhanshu Shukla in the NASA-facilitated Axiom-4 private mission to the International Space Station.

NEW ATLAS MAPS BIODIVERSITY HOTSPOTS HIDING UNDERGROUND

THE WORLD'S biological riches are not evenly distributed. Instead, much of Earth's plant and animal life is concentrated in a small number of biodiversity hotspots — from the tropical rainforests of the Amazon to the meadows of the Himalayas — that have earned enormous scientific and conservation attention.

Now, a new research suggests that more of these critical hotspots could be hiding beneath our feet — undocumented and largely unprotected. Last week, a team of scientists unveiled a global underground atlas, mapping the biodiversity of organisms known as mycorrhizal fungi. The fungi, which live in and on plant roots, form vast underground networks and perform critical ecosystem services, transporting nutrients to plants, storing carbon, bolstering soil health and helping crops survive environmental shocks and stresses.

More than 80% of the world's plants form symbiotic relationships with mycorrhizal fungi, which entwine themselves in the plants' roots and spread thin filaments underground. Using ma-



chine learning models, the scientists predicted that rich reservoirs of these fungi lie hidden in some unexpected places, including the Alaskan tundra and Mediterranean woodlands.

Scientists pulled together more than 2.8 billion fungal DNA sequences from 25,000 soil samples collected in 130 countries and built machine-learning models to analyse this data. The models then made predictions about fungal biodiversity, estimating both richness — how many species were present at a given location — and rarity, or how unique those fungi were. More work is needed to confirm their predictions, which were published in *Nature*.

Some of the findings mirror other well-documented biodiversity trends. For instance, the map predicts that the biodiversity of one major subgroup of mycorrhizal fungi — associated with grasses, crops and many species of trees — is greatest near the equator, a pattern that holds for many plants and animals.

**THE NYT**

ALIND CHAUHAN  
NEW DELHI, JULY 29

A YEAR ago, landslides following torrential rain and flash floods killed 373 people in Wayanad, Kerala. A month before that, five Armymen were killed after a flash flood in the Shyok river in Ladakh swept away a tank. In 2023, dozens died after a Glacial Lake Outburst Flood (GLOF) in Sikkim. This month, flash floods and landslides killed more than 100 people in Himachal Pradesh.

Flash floods after extreme rainfall events kill more than 5,000 in India annually, and cause significant damage to infrastructure, farmlands, and the environment. As the global climate crisis intensifies, these events are becoming more frequent — increasing from 132 in 2020 to 184 in 2022, official figures show.

What factors are driving flash floods and where, and how can their impacts be limited? A study by researchers at IIT Gandhinagar has provided some important insights. ("Drivers of flash floods in the Indian sub-continental river basins", *Nature*, July 13)

Most vulnerable

Flash floods occur most frequently in the Himalayas, Central India, and the west coast of the country, the study has reported.

The researchers analysed sub-basins (parts of large river basins) to identify flash-flood hotspots, and identified sub-basins in the Brahmaputra, Narmada, Tapi, Mahanadi, Brahmani, and west coast river basins as being "extremely prone" to flash flooding.

Parts of the Godavari, Ganga, Mahi, and Indus river basins have been identified as "highly susceptible".

There has been a notable increase in flash flood events since 1995. Most have occurred in the Brahmaputra river basin, followed by the Ganga and Krishna basins, the study says.

Driving factors

Only 25% of flash floods are directly caused by extreme precipitation, the study says. The rest are due to a combination of extreme rainfall and the condition of the soil before precipitation.

"If the ground is already wet before a heavy rainfall event, chances are the soil would be

saturated or near saturated, which can lead to instant runoff. This increases the risk of flash floods," study co-author Vismal Misra said.

In only 23% cases does an extreme rainfall event lead to immediate (within six hours) flash floods; prolonged (multi-day) rain, of both low and high intensity, is usually the reason, the study says.

On the west coast and in Central India, flash floods are driven by the high 'flashiness' of sub-basins — where water levels rapidly reach a peak after a heavy rainfall event. Soil conditions play a crucial role in determining how quickly water infiltrates a sub-basin.

In the Himalayas, factors such as steep slopes and high relief (when there is a significant difference between a high point and low point) add to chances of flash floods.

Climate change

For every degree Celsius increase in average temperature, the atmosphere can hold about 7% more moisture, leading to more intense precipitation.

Between 1981 and 2020, the yearly frequency of extreme precipitation events dou-

bled during the pre-monsoon season in India. Extreme rainfall during the monsoon, post-monsoon, and winter seasons has increased by 56%, 40%, and 12.5% respectively, the study notes. More than 75% of all flash flood events in the period 1980 to 2018 occurred during the June-September monsoon season.

Rising temperatures are also leading to more wet hours in most sub-basins that are not currently flash flood-prone, says the study.

Adaptation strategies

Findings of the study point to the need to adopt region-specific adaptation strategies that are based on factors such as topography and soil conditions, and not just extreme rainfall events.

This can help in developing better early warning systems, targeted disaster preparedness, and long-term adaptation plans, the researchers say.

There is also a need to identify new potential flash flood hotspots and build climate-resilient infrastructure to limit the impacts.

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Listening to birds, counting them too: Kaziranga census that PM mentioned

SUKRITA BARUAH  
GUWAHATI, JULY 28

IN HIS *Mann ki Baat* radio program on Sunday, Prime Minister Narendra Modi spoke about the "first-ever grassland bird census" in Assam's Kaziranga National Park, and the technology used for the exercise.

What is the bird census, and what was its methodology?

The census exercise

A team of forest officials, scientists, and conservationists carried out a survey between March 18 and May 25 to record the grassland bird population in Kaziranga National Park.

The idea emerged after doctoral student Chiranjib Bora, who is studying the black-breasted parrotbill, a threatened grassland bird, received the INSPIRE fellowship from the central government's Department of Science & Technology, along with acoustic

monitoring tools to conduct his research.

Bora, along with Kaziranga authorities, decided to use the tools to count all grassland bird species in the park, 70% of which is covered by grassland.

"Our goal was to monitor which grassland bird species live in Kaziranga. Most of these bird species have become rare. They are small, well-camouflaged birds that are not easily spotted, unlike wetland birds. Also, they live in peculiar habitats that are rapidly declining," Bora said.

The survey prioritised 10 species that are either globally threatened or are endemic to the Brahmaputra floodplains: The Bengal florican, swamp francolin, Finn's weaver, swamp grass babbler, Jerdon's babbler, slender-billed babbler, black-breasted parrotbill, marsh babbler, bristled grassbird, and Indian Grassbird. In all, the survey recorded 43 grassland bird species, including one critically endangered, two endangered, and six vulnerable species on the



(From left) Ashy prinia, Finn's weaver, and striated babbler. Kaziranga National Park

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The unique methodology

The use of passive acoustic recording monitoring was the highlight of the survey, Kaziranga National Park Director Sonali Ghosh said. "Surveying these small, shy, and

highly camouflaged birds is very difficult using traditional methods like visual counting. So, the acoustic recorders were placed in tall trees near grasslands during the breeding season of the birds, between March and May. This is the season when they are very vocal, calling out for mates, and with males defend-

ing territory. The instruments recorded all the birds singing in the landscape," Dr Ghosh said.

Bora said various tools were then used to identify the birds from the recordings.

"After recording for three consecutive days, we removed the recorders and analysed those sound files. If the sound was not identifiable, we used software to create a spectrogram, which is a graphical representation of the sound, to aid us in identifying. We also used a tool called Birdnet, which uses machine learning to try and identify species by bird song. We covered 29 locations in the park using six recorders," he said.

Significance of findings

Dr Ghosh said grassland birds are "an indicator of good health" of an ecosystem, rather like body mass index (BMI) for humans. "The presence of these birds tells us that the habitat is healthy," she said.

The park authorities are particularly excited by the discovery of a breeding colony of the endangered Finn's weaver, which is endemic to the Brahmaputra flood plain.

"They nest on treetops, but till now, we did not know where they were nesting. During the survey we found a colony of more than 85 nests," Dr Ghosh said.

Threats to the birds

Over the past four decades, Assam has lost around 70% of its grasslands, Bora said.

"There are anthropogenic factors such as overgrazing and clearing of grasslands for cultivation. But there is also a natural phenomenon called ecological succession, which is basically an instinct for grasslands to gradually transition to forests. Among the 10 species that we had prioritised, three are endemic to the grasslands of the Northeast, which means that if they vanish from here, they become extinct," he said.

Climate change is a major concern, Dr Ghosh said. "It is a cause of worry. We used to see a lot more of some species like the Bengal florican, but this time we could detect only one or two. Further study can tell us if the decline is influenced by climate change or other factors," she said.



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