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Daily News Feed

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SC questions ED actions in liquor scam probe

■ Court extends the stay on Central agency's probe; questions ED's encroachment on State's authority ■ Is the federal structure affected, and why couldn't local police conduct the probe, CJI Gavai enquires ■ State Vigilance Department had registered 47 FIRs from 2014 to 2021, says Sibal for TASMALC

Aaratrika Bhaumik
NEW DELHI

Extending the stay on the Enforcement Directorate's probe into money laundering cases registered against the Tamil Nadu State Marketing Corporation (TASMALC) in connection with an alleged liquor retail scam, the Supreme Court on Tuesday orally questioned whether the agency's probe encroached upon the State's authority to investigate offences.

Hearing petitions filed by TASMALC and the Tamil Nadu government, a Bench of Chief Justice of India B.R. Gavai and Justice K. Vinod Chandran directed that the case be listed after the court pronounces its judgment on the review petitions challenging its 2022 ruling in *Vijay Madanlal Choudhary vs Union of India* case.

During the hearing, Chief Justice Gavai asked Additional Solicitor-General S.V. Raju, appearing for the ED, "What happens to the federal structure? Would this not amount to encroachment upon the State's right to investigate? Can't the local police look into the matter?"

In its 2022 verdict, the court had held that providing a copy of the Enforcement Case Information Report (ECIR) to the accused is not mandatory in every instance. While TASMALC has argued that it was denied access to the ECIR in the present proceedings, the ED maintained that the ECIR is merely an "internal administrative document" and that no legal right exists for the accused to obtain a copy.

This marks the second occasion in six months that the court has questioned the ED's conduct in the

case. In a previous hearing on May 22, the Chief Justice had orally observed that the agency was "crossing all limits" while ordering an interim stay on its probe. The Madras High Court had earlier declined to grant such a stay.

Appearing for TASMALC, senior advocate Kapil Sibal submitted that the State Vigilance Department had already registered 47 FIRs relating to alleged irregularities between 2014 and 2021. Referring to ED's searches at TASMALC's corporate offices in 2015, he asked, "How can you raid government offices? What happens to the federal structure of this country?"

'Large-scale corruption'
Citing Section 66 (2) of the Prevention of Money Laundering Act (PMLA), Mr. Sibal contended that the provision requires the ED to share information regard-



Enforcement Directorate officials conducting a raid at Tamil Nadu State Marketing Corporation headquarters in Chennai. FILE PHOTO

ing offences with the State authorities conducting parallel investigations, which had not been done. He further argued that the ED had also expanded its remit to probe the underlying aspect of corruption.

Mr. Raju, for the ED, countered that there was

"large-scale corruption" and that the agency was investigating only the money-laundering component. He maintained that the "predicate offence", which forms the basis for ED action, was established through FIRs registered by the State itself, and that the

agency had uncovered incriminating material during its probe.

To this, the Chief Justice remarked, "Law and order must operate within its own domain... what happens to the federal structure otherwise?"

When the Bench pointed out that the State had already filed multiple FIRs, Mr. Raju remarked, "They have also closed 37 FIRs in a short time. Once the predicate offences go, the ED's case collapses. They are attempting to cut off the ED by closing the FIRs."

Favourable report

As the hearing progressed, the Chief Justice, however, refrained from making any adverse comments on the ED's functioning. "In the last six years, I have seen many cases of the ED. But I do not want to say something, else it will again be re-

ported [in the media]," he said.

Responding to this, Mr. Raju said the media seldom reported favourably on the agency's work. "Anything in our favour is hardly reported, and that is my grievance," he said.

The dispute pertains to the ED's search and seizure operations at the headquarters of TASMALC, the State's public sector liquor retailer. The agency has alleged large-scale financial irregularities involving kickbacks, manipulation in procurement, and laundering of illicit proceeds linked to TASMALC's business activities. The Tamil Nadu government, under Chief Minister M.K. Stalin, has firmly rejected these claims, accusing the BJP-led Union government of misusing Central agencies to harass political rivals and undermine the State's autonomy.

(GS Paper II – Polity & Governance / Federalism / Accountability of Executive)

• Summary (English):

The Supreme Court questioned the Enforcement Directorate's (ED) role in probing the Tamil Nadu State Marketing Corporation (TASMALC) liquor scam. The court raised concerns over federal overreach, asking if the ED was encroaching upon the State's investigative powers. CJI Gavai observed that law and order must operate within its own domain. Tamil Nadu argued that its Vigilance Department had already filed 47 FIRs, while ED maintained it was probing money laundering linked to "large-scale corruption."

• Summary (Hindi):

सर्वोच्च न्यायालय ने तमिलनाडु राज्य विपणन निगम (TASMALC) से जुड़े शराब घोटाले की जांच में प्रवर्तन निदेशालय (ED) की भूमिका पर सवाल उठाया। न्यायालय ने संघीय ढांचे में हस्तक्षेप की चिंता जताते हुए पूछा कि क्या ईडी राज्य की जांच शक्तियों का उल्लंघन कर रही है। तमिलनाडु सरकार ने बताया कि राज्य सतर्कता विभाग ने पहले ही 47 प्राथमिकी दर्ज की हैं जबकि ईडी ने मनी लॉन्ड्रिंग की जांच जारी रखी है।

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Maoist leader **Mallojula Venugopal Rao, alias, Bhupati** and 60 others surrendered in Gadchiroli. A list of a few other surrenders:



Date	No. of people who surrendered	Area
Jan. 29, 2025	30	Narayanpur
Jan. 30, 2025	50	Bijapur
April 18, 2025	33	Sukma
Aug. 27, 2025	31	Bijapur
Sept. 25, 2025	71	Dantewada
Oct. 2, 2025	103	Bijapur



With this surrender, we can say that it is the end of the core family of the Naxal movement. It has happened after four to five months of consistent efforts

A SENIOR OFFICIAL

61 Maoists, including top leaders, lay down arms in Maharashtra

The Hindu Bureau

MUMBAI

In a blow to the Maoist movement in Maharashtra, 61 Maoists, including the prominent central committee member of the CPI (Maoist) Mallojula Venugopal Rao, alias, Bhupati, surrendered before the Maharashtra Police at Fodewada village in Bhamragad in the intervening night of Monday and Tuesday.

The 70-year-old Bhupati is known to be one of the brains behind the extremist movement. Those who surrendered include two State zonal committee members, 10 divisional committee members and cadres from Maharashtra and Chhattisgarh.

The Maoists handed over 54 weapons, including seven AK47s, six SLRs and six INSAS rifles. Bhupati's surrender comes months after his wife Tarakka, alias Vimala Sidam, also a Maoist leader, turned herself in. His sister-in-law had also surrendered.

A senior official told *The Hindu* that with Bhupati's surrender, "the core family of the Naxal movement" has ended and that it is a

"major step in the elimination" of the insurgency. "It has happened after four to five months of consistent efforts by the Maharashtra Police," the official said, adding that there was "stiff competition between police forces of Maharashtra, Chhattisgarh and Telangana to secure the surrender of the most-dreaded Naxal leader." "Bhupati was the brain or the guiding spirit behind the Naxal movement. He was the number two in the movement and was to become the general secretary. Ever since his wife surrendered, he had been openly talking about the idea of surrendering. He was unhappy with the way the movement was going, about the way the party had changed lines," an official said.

"The official surrender will take place in front of the Chief Minister of Maharashtra on Wednesday morning," an official said.

A commerce graduate from Pedapalli in Telangana, Bhupati was a Polit Bureau member of the CPI (Maoist) and is the brother of Kishenji, the dreaded Maoist leader gunned down in 2011.

(GS Paper III – Internal Security / Left-Wing Extremism)

- **Summary (English):**

In a major setback to the CPI (Maoist), 61 Maoists including central committee member Mallojula Venugopal Rao alias Bhupati surrendered to Maharashtra Police. Bhupati was one of the top strategists of the Naxal movement and brother of slain leader Kishenji. His surrender, along with family members, is being termed a critical blow to left-wing extremism in central India.

- **Summary (Hindi):**

महाराष्ट्र में नक्सलवाद को बड़ा झटका लगा जब सीपीआई (माओवादी) के 61 सदस्यों, जिनमें शीर्ष नेता मल्लोजुला वेणुगोपाल राव उर्फ भूपति शामिल हैं, ने आत्मसमर्पण किया। भूपति को नक्सली आंदोलन का प्रमुख रणनीतिकार माना जाता था। इसे वामपंथी उग्रवाद समाप्ति की दिशा में बड़ी सफलता माना जा रहा है।

After 55 years, Manipur village prepares for Muivah's homecoming

The Hindu Bureau
GUWAHATI

Fifteen years after the Manipur government thwarted his last homecoming attempt, Thuingaleng Muivah is scheduled to visit his village Somdal in the State's Ukhrul district on October 22.

Emotions are running high as people in the village and the district prepare to welcome the 90-year-old general secretary of the National Socialist Council of Nagaland (Isak-Muivah) for the first time after he left Somdal in 1970 to fight for an independent Naga homeland.

The NSCN, which declared a ceasefire with the Centre in 1997, is more familiar as NSCN (I-M), or the Isak-Muivah faction of the National Socialist Council of Nagaland. Mr. Muivah is a Tangkhul, the Naga community that dominates the NSCN and the Ukhrul district.

"The much-awaited ho-



Homeward-bound: NSCN(I-M) general secretary Thuingaleng Muivah is scheduled to visit Somdal in Ukhrul district on October 22. FILE PHOTO

mecoming of Avakharar [honorific in the Tangkhul dialect for Mr. Muivah] to Ukhrul and his birthplace, Somdal, is a matter of immense joy for every Tangkhul soul. We warmly welcome him with open hearts and prayers for his good health and safety," Epchan Kapai, the chairman of the Tangkhul Naga Zingtung Longphang (TNZL), said.

TNZL is an organisation of Tangkhul people inhabiting the northern part of

the community's domain straddling the Ukhrul and Kamjong districts of Manipur. Zingtung means north.

"We have long prayed for the day of his return to his native place. The Naga movement gained direction, dignity, and determination under his leadership," A. Nathan, the chairman of the apex body representing the southern (Zingsho) Tangkhul people, said. "His sacrifice and service for the Naga people

are unmatched," he added.

"For the Tangkhul region in particular, and the Nagas in general, his historic visit will remain one of the most precious and auspicious," Wungpam L. Shimray, the chairman of the eastern (Ato) Tangkhul region's apex community body, said. His western (Aze) counterpart, Sophayo Siro, was equally effusive.

Once most wanted

As the general secretary of the underground Naga National Council (NNC), which was seeking independence for the Naga-inhabited areas of the Northeast, Mr. Muivah was the most wanted man in Manipur in the 1970s. The reward on his head was revised several times from the initial ₹100,000.

He quit the NNC after differences with other leaders of the group following the Shillong Accord of 1975. Along with Isak Chishi Swu and S.S. Khaplang, he formed the NSCN in Janu-

ary 1980. Swu died in June 2016 and Khaplang died in June 2017.

Mr. Muivah fell out with Khaplang over pursuing talks with the government of India. This led to a split in the NSCN into the Isak-Muivah and the Khaplang factions.

As the NSCN (I-M) began engaging in talks with the Centre, what rankled was Mr. Muivah's inability to visit his Somdal home, although there were no restrictions on other leaders of the outfit.

Nagaland's Dimapur, where he has mostly stayed after returning to India, is about 160 km north-west of Somdal. Yet, this distance became increasingly difficult for Mr. Muivah to cover, particularly after the Manipur government and local organisations opposed the Centre's decision to extend the scope of its ceasefire with the NSCN (I-M) on June 14, 2001.

The extension was aimed at covering Naga-in-

habited areas of Arunachal Pradesh, Assam, and Manipur, apart from Nagaland. Manipur's non-Nagas saw this extension as a direct threat to the State's territorial integrity and feared that it would lead to the creation of the 'Greater Nagalim' espoused by the NSCN (I-M).

The Union government reverted to the original agreement after protesters burnt down the Manipur Assembly building and other government offices in Imphal and more than a dozen people were killed in police firing.

The next conflict was in 2010 when Manipur's Congress government refused to let Mr. Muivah in through the State's border with Nagaland. Six persons were killed during the stand-off on the inter-State border.

There has been no opposition to Mr. Muivah's scheduled visit, announced on October 10, this time.

(GS Paper III – Internal Security / Insurgency in North-East)

- **Summary (English):**

Thuingaleng Muivah, general secretary of NSCN (IM), will visit his native village in Manipur's Ukhrul district after over five decades. The visit marks a symbolic reconciliation, following decades of insurgency and peace negotiations between the NSCN (IM) and the Centre. Earlier visits were blocked due to tensions over the Greater Nagalim demand.

- **Summary (Hindi):**

एनएससीएन (आई-एम) के महासचिव थुइंगलेंग मुइवाह 55 वर्षों बाद मणिपुर के उखरुल जिले स्थित अपने गांव का दौरा करेंगे। यह कदम नगा शांति प्रक्रिया में प्रतीकात्मक मेल-मिलाप का संकेत है। पहले, 'ग्रेटर नागालिम' की मांग को लेकर राज्य सरकार ने उन्हें प्रवेश की अनुमति नहीं दी थी।

Seventh NSG hub to come up in Ayodhya

The Hindu Bureau

MANESAR

A new hub of the National Security Guard (NSG), the elite counter-terror and counter-hijack force, will be established at Ayodhya in Uttar Pradesh, Union Home Minister Amit Shah said on Tuesday.

He said that this would be in addition to the six NSG hubs operational in Mumbai, Chennai, Kolkata, Hyderabad, Ahmedabad, and Jammu, where NSG commandos are stationed round the clock throughout the year.

“The commandos at this hub will always be ready and available to provide a strong response to any sudden terrorist attack in their zone,” he said on the 41st Raising Day of the NSG.

Mr. Shah said that in the coming days, the Modi government will bring signifi-

cant changes to the NSG’s operations, emphasising that its headquarters will continuously focus on training NSG personnel and anti-terrorism units of the State police forces across the country, sharing best practices, and ensuring physical fitness of the security forces.

New training centre

Mr. Shah also laid the foundation stone of the Special Operations Training Centre at the NSG centre in Manesar, Haryana. He said the centre, being built on eight acres of land at a cost of ₹141 crore, will provide state-of-the-art training to special commandos combating terrorism.

NSG Director-General Brighu Srinivasan said that a model standard operating procedure for anti-terrorist operations had been shared with all States.

(GS Paper III – Internal Security / Counter-Terrorism / Disaster Management)

- **Summary (English):**

Union Home Minister Amit Shah announced a new NSG (National Security Guard) hub in Ayodhya — the 7th in the country — to enhance anti-terror preparedness. It will operate alongside existing hubs in Mumbai, Chennai, Kolkata, Hyderabad, Ahmedabad, and Jammu.

- **Summary (Hindi):**

केंद्रीय गृह मंत्री अमित शाह ने अयोध्या में एनएसजी (राष्ट्रीय सुरक्षा गार्ड) का नया केंद्र स्थापित करने की घोषणा की। यह देश का सातवां एनएसजी केंद्र होगा जो आतंकवाद-रोधी तैयारियों को मजबूत करेगा।

India to train border security force of Mongolia, says Modi

Kallol Bhattacharjee

NEW DELHI

India will start a new programme to help in capacity building for the border security force of Mongolia, Prime Minister Narendra Modi said on Tuesday.

Welcoming visiting Mongolian President Khurelsukh Ukhnaa, Mr. Modi highlighted common Buddhist bonds between Mongolia and India. He announced that holy relics of two of Lord Buddha's leading disciples would travel to Mongolia next year. He also said that India would start issuing free e-visas for Mongolian citizens.

"Our defence and security cooperation is also steadily strengthening. We have launched several new initiatives, from training programmes to the appointment of a Defence Attaché at the Embassy. India



Prime Minister Narendra Modi and Mongolia President Khurelsukh Ukhnaa at a press conference in New Delhi on Wednesday. ANI

will also launch a new capacity-building programme for Mongolia's border security forces," Mr. Modi said.

Explaining the announcement, senior officials of the Ministry of External Affairs said India and Mongolia already had joint defence exercises, saying, "They are interested and they see a lot of benefits of training with us."

Mr. Modi highlighted

common Buddhist links between India and Mongolia and said, "I am happy to announce that next year, the holy relics of two great disciples of Lord Buddha – Sariputra and Maudgalyayana – will be sent from India to Mongolia."

The two sides signed 10 MoUs covering areas such as immigration, cooperation, humanitarian aid, geology and mineral resources, and yoga.

(GS Paper II – International Relations / India's Foreign Policy / Buddhism Diplomacy)

- **Summary (English):**

PM Modi announced a new capacity-building programme for Mongolia's border security forces. Both nations signed 10 MoUs covering immigration, defence, mineral resources, and yoga cooperation. The PM also said relics of Lord Buddha's disciples Sariputra and Maudgalyayana will be sent to Mongolia.

- **Summary (Hindi):**
प्रधानमंत्री मोदी ने घोषणा की कि भारत मंगोलिया की सीमा सुरक्षा बलों के लिए क्षमता निर्माण कार्यक्रम शुरू करेगा। दोनों देशों ने प्रवासन, रक्षा, खनिज संसाधन और योग सहयोग पर 10 समझौते किए। मोदी ने यह भी बताया कि अगले वर्ष भगवान बुद्ध के शिष्यों के अवशेष मंगोलिया भेजे जाएंगे।

India calls for swift action on climate measures at Pre-COP

Jacob Koshy

NEW DELHI

Environment Minister Bhupendra Yadav emphasised the need to “implement” climate measures, in a series of meetings in Brasilia, Brazil, on Monday in the build-up to the 30th edition of the Conference of Parties (COP) in the city of Belem, beginning November 10.

“We must now focus on implementing ambitious climate measures and, above all, addressing the most pressing challenge: the urgent lack of resources for developing countries to deliver adaptation and mitigation,” he said. The Minister stressed that the time for continuous reviews without action has passed. “Dialogue is important, but action is imperative.”

These meetings called ‘Pre-COP’ meetings are an annual feature ahead of the main meeting and usually involve participation by a small group of senior delegates representing their countries, to iron out differences, find common bridging points to improve the chances of a successful outcome at the COP



Bhupendra Yadav

meeting.

Mr. Yadav acknowledged the successful conclusion of the first Global Stock Take (GST), a five-yearly process established by the Paris Agreement to assess the world’s collective progress on climate action.

He said that the GST is designed to strengthen ambition by performing three essential roles – enabling Parties (member countries) to evaluate collective progress, identify remaining gaps, and guide enhanced actions both domestically and globally.

The Minister also met Mr. Simon Stiell, Executive Secretary, United Nations Framework Convention on Climate Change (UNFCCC).

GS Paper:

GS Paper III – Environment, Climate Change, and Conservation

English Summary:

Environment Minister **Bhupender Yadav** urged global leaders to focus on *implementation* rather than mere discussions on climate measures during the **Pre-COP meetings** in Brasília, Brazil. These meetings are preparatory sessions for the **30th Conference of Parties (COP-30)**, scheduled to be held in **Belém, Brazil**, from **November 10**.

Yadav emphasized the urgent need to address **the lack of financial resources for developing countries** to ensure **adaptation and mitigation**. He highlighted that continuous dialogues without real action have become insufficient, calling for **ambitious implementation of climate commitments** under the **Paris Agreement**.

He also referred to the completion of the **first Global Stocktake (GST)** — a five-yearly review process that evaluates global progress, identifies gaps, and guides future climate actions. The Minister also met **Simon Stiell**, Executive Secretary of the **UNFCCC**, to discuss India's commitment to climate responsibility and cooperative frameworks.

Hindi Summary (हिन्दी सारांश):

पर्यावरण मंत्री **भूपेंद्र यादव** ने ब्राज़ील के ब्रासीलिया में आयोजित **प्री-सीओपी (Pre-COP)** बैठकों के दौरान कहा कि अब केवल संवाद नहीं बल्कि ठोस **कार्रवाई** का समय है। उन्होंने विकसित देशों से अपील की कि वे **विकासशील देशों को जलवायु अनुकूलन और शमन (adaptation & mitigation)** के लिए संसाधन उपलब्ध कराएँ।

यह बैठकें नवंबर में **ब्राज़ील के बेलें शहर** में होने वाले **30वें कॉन्फ्रेंस ऑफ पार्टिज़ (COP-30)** से पहले की तैयारी हैं। यादव ने कहा कि **लगातार समीक्षा (reviews)** पर्याप्त नहीं हैं, बल्कि अब **कार्यान्वयन (implementation)** आवश्यक है।

उन्होंने **ग्लोबल स्टॉक टेक (GST)** की सफलता का उल्लेख किया, जो पेरिस समझौते के तहत प्रत्येक पाँच वर्षों में विश्व की जलवायु कार्रवाई की प्रगति का आकलन करता है। यादव ने **यूएनएफसीसीसी (UNFCCC)** के कार्यकारी सचिव **साइमन स्टील** से भी मुलाकात की और भारत की जलवायु प्रतिबद्धता पर चर्चा की।

UPSC/BPSC/JPSC Relevance:

- **GS Paper III Topics:**
 - Climate Change and International Agreements
 - India's role in Global Climate Diplomacy
 - Paris Agreement and Global Stocktake (GST) Mechanism
- **Key Concepts:**
 - **Pre-COP Meetings:** Preparatory sessions before the annual COP to finalize agenda and consensus.
 - **Global Stocktake (GST):** Reviews collective progress toward Paris Agreement goals.
 - **Adaptation and Mitigation:** Core focus areas for developing nations facing resource constraints.

WHO issues product alert on three contaminated oral liquid medicines

The Hindu Bureau
NEW DELHI

The World Health Organization (WHO) has issued a medical product alert on three liquid medicines identified in India as contaminated and reported to it on October 8.

They have been identified to be of specific batches of Coldrif, Respifresh TR and ReLife, manufactured by Sresan Pharmaceutical, Rednex Pharmaceuticals, and Shape Pharma, respectively.

The UN agency said Indian regulatory authorities had been advised to consider targeted market surveillance, with particular attention to informal and unregulated supply chains where products might circulate undetected.

They should carefully evaluate the risks associated with any oral liquid medicines originating from



The products are deemed substandard for failing to meet quality standards. REUTERS

the same manufacturing sites – particularly those produced since December 2024.

“The CDSCO [Central Drugs Standard Control Organisation] has informed WHO that none of the contaminated medicines have been exported from India and there is currently no evidence of illegal export,” it said adding that the affected products contained

active ingredients commonly used to relieve symptoms of the common cold, flu, or cough.

Substandard product

The WHO said the products were considered substandard as they failed to meet quality standards and specifications. On October 8, the CDSCO reported presence of diethylene glycol in at least three oral liquid medicines. Diethylene glycol is toxic to humans when consumed and can prove fatal.

“WHO continues to collaborate closely with Indian health authorities to monitor the situation, identify the source of the contamination and mitigate any potential public health risks,” it said.

The agency warned that the contaminated products posed significant risks to patients and could cause life-threatening illness.

GS Paper III – Science & Technology / Public Health & Safety

English Summary:

The **World Health Organization (WHO)** issued a **medical product alert** on three **contaminated oral liquid medicines** identified in India and reported on **October 8, 2025**. These medicines — **Coldrif**, **Respishfr TR**, and **ReLife** — were manufactured by **Sresan Pharmaceutical**, **Rednex Pharmaceuticals**, and **Shape Pharma** respectively.

WHO found that these medicines were **substandard** as they **failed to meet quality standards** and contained **diethylene glycol**, a toxic substance known to cause **acute kidney injury and death** when consumed.

The **Central Drugs Standard Control Organisation (CDSCO)** informed WHO that none of these products were exported and that there was **no evidence of illegal export**. However, WHO urged **increased domestic market surveillance**, particularly for **informal and unregulated supply chains**, to prevent circulation of unsafe drugs.

The contaminated products were mainly **over-the-counter cough and cold syrups**, and WHO warned that they posed **serious health risks** and could lead to **life-threatening illness**.

Hindi Summary (हिन्दी सारांश):

विश्व स्वास्थ्य संगठन (WHO) ने भारत में निर्मित तीन तरल औषधियों पर चेतावनी जारी की है, जिन्हें **दूषित (contaminated)** पाया गया है। इन दवाओं के नाम हैं — **कोल्डरिफ (Coldrif)**, **रेस्पिशफ्र TR (Respishfr TR)** और **रिलाइफ (ReLife)**, जिन्हें **श्रीसन फार्मास्युटिकल**, **रेडनेक्स फार्मास्युटिकल्स** और **शेप फार्मा** द्वारा बनाया गया था।

WHO ने कहा कि ये उत्पाद **गुणवत्ता मानकों में विफल** रहे और इनमें **डाइथिलीन ग्लाइकोल (Diethylene Glycol)** पाया गया, जो मनुष्यों के लिए **घातक** है। इससे **किडनी फेलियर और मृत्यु** तक हो सकती है।

केंद्रीय औषधि मानक नियंत्रण संगठन (CDSCO) ने WHO को बताया कि ये दवाएं **भारत से निर्यात नहीं की गईं**, परंतु WHO ने भारत को **घरेलू निगरानी बढ़ाने** और **अनियमित आपूर्ति श्रृंखलाओं पर ध्यान देने** की सलाह दी। संगठन ने चेतावनी दी कि ये दूषित उत्पाद **मरीजों के लिए गंभीर खतरा** बन सकते हैं और **जीवन-घातक बीमारियां** उत्पन्न कर सकते हैं।

UPSC/BPSC/JPSC Relevance:

GS Paper II – Governance / International Relations:

- Role of WHO in global health surveillance.
- India's coordination with WHO and CDSCO in public health regulation.
- Strengthening drug safety and regulatory mechanisms in developing nations.

GS Paper III – Science & Tech / Public Health:

- Ethical manufacturing standards and pharmaceutical governance.
 - Toxic adulterants in medicines (Diethylene Glycol incidents in India and abroad).
 - Importance of pharmacovigilance and global health alerts.
-

Key Concepts for Examination:

- **WHO Medical Product Alert:** An international warning system for substandard or falsified medicines.
- **CDSCO (Central Drugs Standard Control Organisation):** India's national regulatory authority for pharmaceuticals.
- **Diethylene Glycol (DEG):** A toxic chemical often mistakenly used as a solvent in syrups — responsible for multiple poisoning incidents globally.
- **Pharmacovigilance:** Monitoring, detection, and prevention of adverse effects of medical products.

Microplastics pollution threatens Goa's estuarine fisheries, human consumers

A study has traced microplastic contamination in fish along the Goan coast; it also analysed factors that increase the uptake of these particles and the resulting risks for fish and human health; scientists examined the habitats and feeding behaviour of 251 fishes belonging to nine species of finfish and shellfish captured from various depths

Sandhya Ramesh

Microplastics in water bodies can be ingested by tiny organisms, which in turn are consumed by larger ones. As a result, the bodies of animals higher up in the food chain accumulate more microplastics and can suffer from amplified toxicity. This phenomenon is called bioaccumulation.

To understand microplastic bioaccumulation along the Goan coast, scientists from the CSIR-National Institute of Oceanography in Goa and the Academy of Scientific and Innovative Research in Ghaziabad recently examined the habitats and feeding behaviour of 251 fishes belonging to nine species of finfish and shellfish. These included mackerel, anchovy, oyster, clam, catfish, sardine, and other commercial varieties, which the team captured from various depths in the ocean's water column.

In a study published in *Environmental Research* in August, the team identified 4,871 polluting particles in these fish, of which 3,369 particles were plastic polymers of 19 types. The scientists also found more contamination on the sea floor and in sediments at the bottom of the water column (in the benthic realm) than in the open water column (pelagic realm).

These particles were mainly from degraded fishing material left at sea and wastewater discharged from human settlements.

Based on the findings, the scientists have indicated that the fish are suffering from disrupted gene expression, oxidative stress, reproductive damage, and lower growth. When people eat these fish, according to the team, effects on the human body could include immune dysfunction, higher risk of cancer, and toxicity to the brain.

Five key questions

Fisheries around Goa focus on the estuaries – ecologically critical zones that nourish young fish and which serve as feeding grounds for the older ones.

Finfish and shellfish are commonly fished at estuaries. These fish kinds also feature frequently in Indian cuisine because they are accessible, affordable, and are rich in proteins.

Anchovies, sardines, and mackerel are small pelagic fish that play an important role in estuarine ecosystems, feeding on plankton and drawing in larger predatory fish. They are also filter feeders: they trap floating particles in the water and ingest them, and are thus more liable to imbibe microplastics.

● These small fish are consumed by



Fishermen cast their nets in the backwaters of the Mandovi river in Goa. FILE

other larger ones, which in turn are prey for the elasmobranchs, or cartilaginous fish, including the sharks that dwell in shallow shelf waters. Microplastics thus move all the way up the food chain in a process called trophic transfer, eventually affecting the apex predators and human consumers.

The scientists analysed fish samples only from the Mandovi estuarine system, part of the Mandovi-Zuari system that contributes to 97% of Goa's fish output. They treated the bamboo shark, an apex predator, as the focal species to identify the effects of microplastic accumulation.

The study fills a knowledge gap for five key questions for the region: microplastic contamination quantities in commercial fish, factors that increase the uptake of microplastics in fish, parts of the body that are the primary ingestion pathways, evidence of microplastics through ingestion in the bamboo shark, and risks of microplastic ingestion for fish and human health along the Goan coast.

Many shapes and colours

The scientists analysed 30 members each of mackerels, sardines, anchovies, bamboo sharks, sole fish, catfish, clams, and oysters, plus 11 of the rarer green mussels. These fish were grouped by their feeding levels: filter feeders and planktivores, secondary consumers, and carnivorous consumers. The scientists determined the microplastic concentration in their bodies by assessing the soft tissue.

Their analysis revealed that anchovies had the highest concentration among the



Such findings only underscore the urgent need for us to take action to remove plastic, with better waste disposal and new research for biodegradable alternatives

RAVIDAS K. NAIK

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pelagic species, at 8.8 microplastic particles per individual (MP/in). The catfish led the benthic realm at over 10 MP/in. The bamboo shark had the least: 3.5 MP/in. The water column itself contained 120 MP/litre.

The team found that the longer bodies the fish had, the fewer microplastic particles they accumulated. They also concluded that fish with habitats closer to contaminated sediments on the sea bed ingested more microplastics when they fed.

Among the finfish, the scientists found more microplastics in the digestive tract than in the gills, indicating accumulation through the consumption of contaminated water or prey. (As water moves through the fish, the particles are trapped in the gills and could lead to respiratory issues.)

They also identified four major shape-types of microplastics: fibres (53%), fragments (29.9%), films (13.1%), and beads (4%). Marine animals use colours to detect prey, and the particles came in nine hues: blue (37.6%), black (24.3%), red

(12%), discoloured (8.7%), transparent (6.8%), green (4.4%), pink/purple (2.5%), yellow (1.9%), and orange (1.7%). The types and colours of microplastics revealed their sources to be fishing gear, tire residue from roads, e-waste, packaging, and textiles.

Risk assessment

In all, the study categorised the region and ecosystem as low-risk but placed benthic life at more risk than pelagic. The paper also said 11 of the 19 types of polymers identified were highly toxic. The study showed 66 of the 71 shellfish to have poor nutritional statuses. Previous studies have found the direct effects of microplastics on fish include lower fitness, protein, and fatty acids and lower nutritional quality. Indirectly, as the demand for such fish drops in the market, coastal populations could be at risk of losing their livelihoods.

"This is a good study that further supports several other independent findings," Ravidas K. Naik, who also studies microplastics in marine environments at the National Centre for Polar and Ocean Research in Vasco da Gama and wasn't affiliated with the study, said.

"There are microplastics in every place on earth, and such findings only underscore the urgent need for us to take action as a society to remove plastic from various environments, with better waste disposal and new research for biodegradable alternatives."

(Sandhya Ramesh is a freelance science journalist. sndhyrnmsh@gmail.com)

THE GIST

Researchers identified 4,871 polluting particles, of which 3,369 particles were plastic polymers of 19 types. Researchers found more contamination on the sea floor than in open water. Particles were mainly from fishing material and wastewater

The study indicated that affected fish exhibited disrupted gene expression, oxidative stress, reproductive impairment, and reduced growth. Consumption of these fish by humans may result in immune dysfunction, increased cancer risk, and neurotoxicity

The longer bodies the fish had, the fewer particles they accumulated. Fish with habitats closer to the contaminated sediments on the sea bed ingested more when they fed. Among finfish, more microplastics were found in the digestive tract than in the gills

GS Paper:

GS Paper III – Environment, Ecology, and Biodiversity Conservation

(Topics: Pollution – Microplastics, Marine Ecology, Biodiversity, Human Health Impacts)

English Summary:

A recent study by the **CSIR-National Institute of Oceanography (Goa)** and the **Academy of Scientific and Innovative Research (Ghaziabad)** found alarming levels of **microplastic contamination** in fish along the **Goan coast**, posing threats to **fisheries, marine ecosystems, and human health**.

Researchers examined **251 fish samples** from nine species, including **anchovy, mackerel, clam, sardine, oyster, and shellfish**, collected from various depths of the **Mandovi estuary** and coastal waters. They identified **4,871 polluting particles**, of which **3,369 (~69%) were plastic polymers** – mainly **polypropylene and polyethylene**, materials used in fishing gear, packaging, and textiles.

Key findings revealed that **benthic (bottom-dwelling)** fishes had higher levels of contamination compared to open-water species. This was linked to **wastewater discharge, plastic debris deposition, and sediment accumulation** in the seabed.

The study warned that ingestion of these plastics by fish leads to **bioaccumulation and biomagnification**, eventually impacting **human consumers** through seafood intake. Microplastics were also found in **fish gills and digestive tracts**, suggesting direct contamination from polluted water and prey species.

Scientists emphasized that such contamination not only threatens **marine biodiversity** and **fishery yields** but also raises risks of **endocrine disruption, reproductive failure, liver and kidney damage, and cancer** in humans due to chronic exposure.

Hindi Summary (हिन्दी सारांश):

गोवा तट पर किए गए एक अध्ययन में यह पाया गया है कि **माइक्रोप्लास्टिक प्रदूषण** समुद्री मछलियों, शंख-घोंघों और अंततः **मानव स्वास्थ्य** के लिए गंभीर खतरा बन रहा है। यह अध्ययन **सीएसआईआर-राष्ट्रीय समुद्रविज्ञान संस्थान (गोवा)** और **वैज्ञानिक एवं अभिनव अनुसंधान अकादमी (गाजियाबाद)** द्वारा किया गया।

वैज्ञानिकों ने 9 प्रजातियों की 251 मछलियों में कुल **4,871 प्रदूषक कण** पाए, जिनमें से **69% प्लास्टिक कण** थे। ये मुख्य रूप से **पॉलीप्रोपाइलीन और पॉलीइथिलीन** जैसे पदार्थ थे, जो मछली पकड़ने के जाल, पैकेजिंग और अपशिष्ट सामग्री से समुद्र में पहुंचे थे।

तल-आधारित मछलियों (benthic fishes) में प्लास्टिक प्रदूषण की मात्रा ज्यादा पाई गई, क्योंकि ये समुद्र तल पर जमा अपशिष्ट और मल-जल से अधिक प्रभावित होती हैं।

इन कणों के **गिल्स और पाचन तंत्र (digestive tract)** में पाए जाने से यह स्पष्ट होता है कि मछलियाँ इन्हें सीधे जल या अपने शिकार के माध्यम से निगल रही हैं।

अध्ययन के अनुसार, यह प्रदूषण न केवल **मछली पालन और समुद्री पारिस्थितिकी** को प्रभावित करता है बल्कि मनुष्यों में **कैंसर, हार्मोन असंतुलन, तंत्रिका विकार, और प्रजनन संबंधी समस्याएँ** उत्पन्न कर सकता है।

UPSC/BPSC/JPSC Relevance:

GS Paper III – Environment, Biodiversity & Climate Change

- Pollution and its effects on flora and fauna
- Conservation of marine biodiversity
- Bioaccumulation and biomagnification
- Link between environmental degradation and human health

Key Terms to Note:

- **Microplastics:** Plastic particles <5 mm in size that accumulate in marine and freshwater ecosystems.
- **Benthic species:** Organisms living at the bottom of water bodies, more vulnerable to pollution.
- **Bioaccumulation:** Gradual buildup of toxic substances in an organism.
- **Biomagnification:** Increase in toxin concentration as it moves up the food chain.

Exam-Oriented Insights:

1. India's coastal ecosystems (like Goa's estuaries) face increasing **marine pollution** due to plastic waste.
2. The study reinforces the need for **stringent waste management laws, biodegradable alternatives, and monitoring of fisheries**.
3. Microplastic contamination is now a **global concern**, linked to **SDG 14 (Life Below Water)** and **SDG 3 (Good Health and Well-being)**.

Powering up the Australia-India clean energy partnership

At a time when both India and Australia are pushing ambitious clean energy targets, it is timely that Australia's Minister for Climate Change and Energy, Chris Bowen is arriving in Delhi today (October 15) to meet his Indian counterpart, New and Renewable Energy Minister Pralhad Joshi. His visit comes amidst confronting vulnerabilities in the global supply chains of businesses and the government grappling with how to meet ambitious targets in the clean energy transition. The central challenge is clear: how to scale up renewable energy while avoiding an ongoing overdependence on China, which dominates the processing and manufacturing of critical materials.

This is where the India-Australia Renewable Energy Partnership (REP), launched last year by Prime Ministers Narendra Modi and Anthony Albanese, must move from vision to implementation. If it is to succeed, both countries need to focus on joint projects, critical mineral cooperation and capacity building, turning climate ambition into practical, resilient outcomes. Mr. Bowen will have the chance to highlight the significance of this partnership when he delivers the Australia India Institute's Annual Oration in New Delhi this week.

A climate change vulnerable region

The Indo-Pacific is already experiencing the harshest effects of climate change. Between 1970 and 2022, the region averaged nearly 10 climate-related disasters a month, causing thousands of fatalities and billions in losses. By 2050, projections suggest as many as 89 million people could be displaced, with 80% of the region's population directly impacted.

To mitigate the challenges, India has pledged to reach 500 GW of non-fossil electricity capacity by 2030, with about 280 GW to come from solar. And it is already five years ahead of schedule to reach it. In July 2025, half of India's installed electricity capacity is now from non-fossil sources. Meanwhile, Australia has recently set a



Lisa Singh

is a former Australian senator and the first woman of Indian heritage to be elected to federal Parliament. She is currently the Chief Executive Officer at the University of Melbourne's Australia India Institute



Tushar Joshi

is a Research Associate at the Australia India Institute and a PhD candidate at the University of Melbourne. He is a visiting fellow at the Observer Research Foundation, Delhi

It can result in a resilient and regionally anchored clean energy ecosystem

62%-70% reduction in emissions below 2005 levels, by 2035, raising its climate ambition in line with net-zero goals.

Mr. Bowen said recently on the sidelines of the United Nations General Assembly that the emission reduction target is 'ambitious and achievable, but also investable'. Yet, targets alone do not insulate against structural risks. The global clean energy transition depends on critical minerals, solar components, batteries and hydrogen technologies.

The risks of single country dependence

Today, much of this value chain is concentrated in one country. China refines over 90% of rare earth elements and produces nearly 80% of global solar modules, giving it a pivotal role in the world's renewable energy supply.

For India, this dependence is acutely felt in sectors such as electric mobility and wind power, where the import of rare earth magnets and battery materials is unavoidable. For Australia, the story is different but connected: while it is one of the world's largest producers of lithium and has rich reserves of cobalt and rare earths, it lacks large-scale refining and downstream manufacturing.

This vulnerability has already been tested. The COVID-19 pandemic exposed supply chain fragilities when component shortages disrupted production across sectors. More recently, China restricted rare earth exports, which sent a warning signal to industries worldwide. For India, such disruptions slowed the electric vehicle production. A leading Electric Vehicle (EV) scooter company, for instance, produced just 10,824 units of its EV scooters in July, nearly halving output from a year earlier. For Australia, they underlined the risks of being a raw-material supplier alone. These examples make clear why downstream processing, diversification and supply chain resilience are not optional but strategic imperatives.

The REP presents a framework to respond to

this challenge. It lays out cooperation across eight areas: solar photovoltaic technology, green hydrogen, energy storage, solar supply chains, circular economy in renewables, two-way investment, capacity building, and other shared priorities. Importantly, it also proposes a Track 1.5 Dialogue, bringing together policymakers, industry and research institutions to build practical collaboration.

A strong basis for collaboration

So, what does each side bring to the table? Australia's strengths lie in its resource base and regulatory stability. It can supply India with critical minerals such as lithium and rare earths, but the real value lies in co-investing in refining and processing infrastructure that strengthens the control both countries can have over the clean energy value chain. Australia's recent Net Zero Jobs Plan also reflects its focus on creating the skilled workforce needed for this transition, an area where collaboration with India makes sense.

India's own advantage lies in its scale and youth. With nearly two-thirds of its population under the age of 35, India's demographic dividend can be directed towards clean energy manufacturing, installation and maintenance through programmes such as Skill India. Its growing market demand for solar, storage and hydrogen, combined with production-linked incentive (PLI) schemes, offers Australian firms an avenue to expand investment while helping diversify supply chains. Together, Australia's resources and India's workforce can form the backbone of a more resilient and regionally anchored clean energy ecosystem.

Mr. Bowen's Delhi visit could not have come at a more crucial moment. Cooperation to deliver clean energy together could show the world how two democracies can respond to a region under constant threat of climate-related disasters and deliver resilient clean-energy supply chains to address it.

GS Paper:

GS Paper II – International Relations (Bilateral Relations, India–Australia Relations)

GS Paper III – Energy, Environment, and Sustainable Development

English Summary:

The article discusses the growing importance of the **India–Australia Renewable Energy Partnership (REP)** at a time when both countries are advancing toward **ambitious clean energy goals** and **climate resilience**. Australian Minister for Climate Change and Energy, **Chris Bowen**, is visiting India to meet New & Renewable Energy Minister **Pralhad Joshi** to strengthen collaboration on sustainable technologies and energy transition.

Key Points:

1. Purpose of the Partnership:

- To transform joint vision into implementation through **joint projects, critical mineral cooperation, and capacity building**.
- To reduce dependence on **China**, which currently dominates the global supply chain for **rare earth elements and critical minerals** essential for clean energy technologies.

2. Global Context:

- Between **1970–2022**, the Indo-Pacific region faced rising climate-related disasters.
- India has committed to **500 GW of non-fossil fuel electricity capacity by 2030** and aims for **62–70% emission reduction below 2005 levels by 2035**.
- Australia targets **net-zero emissions** by mid-century.

3. Risks of Supply Chain Dependence:

- **China refines 90% of rare earth elements** and produces 80% of global solar modules.
- COVID-19 and recent Chinese export restrictions exposed supply chain vulnerabilities.
- India and Australia are working to **diversify sources** and build **resilient regional supply**

chains for renewable energy components.

4. **Mutual Strengths:**

- **Australia:** Abundant in lithium, cobalt, rare earths, and a stable regulatory system.
- **India:** Strong in clean energy manufacturing, skilled workforce, and domestic market expansion.
- Together, both countries can co-develop **solar, wind, green hydrogen, and battery technologies**.

5. **Collaborative Framework:**

- The partnership supports the **Track 1.5 Dialogue**, linking policymakers, industries, and research institutions.
- Emphasis on **circular economy, skill development, and innovation** to ensure a just and sustainable energy transition.

Hindi Summary (हिन्दी सारांश):

लेख में भारत और ऑस्ट्रेलिया के बीच बढ़ते **स्वच्छ ऊर्जा सहयोग (Clean Energy Partnership)** की महत्ता को रेखांकित किया गया है। यह साझेदारी दोनों देशों को **नवीकरणीय ऊर्जा, हरित हाइड्रोजन, बैटरी भंडारण और जलवायु सहनशीलता (climate resilience)** के क्षेत्र में अग्रणी बना सकती है।

मुख्य बिंदु:

1. **साझेदारी का उद्देश्य:**

- भारत और ऑस्ट्रेलिया के बीच संयुक्त परियोजनाओं, **महत्वपूर्ण खनिज सहयोग (critical minerals cooperation)**, और **क्षमता निर्माण** पर जोर देना।
- चीन पर निर्भरता घटाना, जो विश्व में 90% **rare earth elements** और 80% सोलर मॉड्यूल का उत्पादन करता है।

2. **भारत का लक्ष्य:**

- 2030 तक 500 GW गैर-जीवाश्म बिजली उत्पादन क्षमता प्राप्त करना।
- 2035 तक उत्सर्जन में 62-70% की कमी लाना।

3. **ऑस्ट्रेलिया का लक्ष्य:**

- **नेट-जीरो उत्सर्जन (Net Zero Emission)** तक पहुंचना और **स्वच्छ ऊर्जा आपूर्ति शृंखला** को मजबूत करना।

4. **जोखिम और समाधान:**

- कोविड-19 के बाद आपूर्ति शृंखला में बाधाओं ने इस निर्भरता को उजागर किया।
- भारत और ऑस्ट्रेलिया मिलकर **सप्लाई चेन डाइवर्सिफिकेशन और उत्पादन स्वावलंबन** पर काम कर रहे हैं।

5. **साझा मजबूती:**

- **ऑस्ट्रेलिया** के पास लिथियम, कोबाल्ट, और रेयर अर्थ्स के विशाल भंडार हैं।
- **भारत** के पास कुशल श्रमबल और नवीकरणीय ऊर्जा निर्माण क्षमता है।
- दोनों देश मिलकर **ग्रीन हाइड्रोजन, सोलर टेक्नोलॉजी और ऊर्जा सुरक्षा** के लिए क्षेत्रीय आपूर्ति शृंखला स्थापित कर सकते हैं।

UPSC/BPSC/JPSC Relevance:

GS Paper II:

- India-Australia Bilateral Relations
- International Energy Cooperation
- Role of critical minerals in diplomacy

GS Paper III:

- Renewable Energy Technologies
- Climate Change Mitigation
- Sustainable Development Goals (SDGs 7, 13, 17)

Key Concepts for Exam:

- **India-Australia Renewable Energy Partnership (REP):** Framework for cooperation in clean

energy, hydrogen, and rare earth supply chain.

- **Critical Minerals:** Essential elements like lithium, cobalt, nickel, and rare earths required for batteries and clean tech.
- **Track 1.5 Dialogue:** Semi-official platform connecting government, academia, and private sector to strengthen collaboration.
- **Circular Economy:** Reuse and recycling of resources for sustainability.
- **Net Zero Emissions Goal:** Achieving balance between greenhouse gases emitted and removed.

Inflation lessons

The Reserve Bank of India will have to be more accurate in its predictions

The September 2025 retail inflation data, at a 99-month low of 1.54%, has important policy implications for the RBI in particular. Except for August, retail inflation has slowed in every month this financial year. The average rate of inflation for the first half of the fiscal is 2.2%, just within the RBI's comfort band of 2%-6%. When inflation was at the higher end of this band, the RBI had repeatedly said that its target was 4%, and that it would not rest until inflation was at that level. There is an argument to be made for the central bank to strive for that same target now that inflation is repeatedly coming in below that mark. Consistently low inflation means that supply is comfortably outstripping demand. Inflation in the clothing and footwear category, for example, was at 2.3% in September 2025, and has been falling pretty consistently for the last two years. This is not a good place to be in, especially now. Faced with the same oversupply problem, albeit at a much larger scale, China is increasingly depending on demand from abroad to absorb its supply. This has not exactly been India's forte historically, and the current tariff tensions affect exports. The government has tried to stimulate domestic demand through income-tax and GST rate reductions. Households have been using the direct tax rebate to bolster their savings and reduce debt rather than increase consumption. GST rate cuts also led to only a temporary spurt in purchases.

What is needed is a sustained increase in real wages, and for that the private sector needs to step up. It is good news that private sector investment announcements grew strongly in the first half of this year, but those need to translate into real projects on the ground soon. One way that the RBI can help is to cut interest rates significantly in the next Monetary Policy Committee meeting in December. With inflation so low and private investment needing a boost, it is better to err on the side of accommodation than conservatism. The other policy issue the RBI needs to deal with is the inaccuracy of its forecasts. In April, it had predicted that inflation for the year would be 4%. Later, it consistently revised this forecast, arriving at 2.6% at the latest meeting in end-September. While factors influencing inflation are dynamic, such a drastic revision of the forecast in just six months shows that something is wrong with the RBI's estimation process. Since a key aspect of its work is with inflation prediction, this is a deficiency that it should address quickly.

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GS Paper:

GS Paper III – Indian Economy

(Topics: Inflation and Monetary Policy, RBI's Role, Fiscal Measures, Economic Growth)

English Summary:

The article analyses the **September 2025 retail inflation** data, which fell to a **99-month low of 1.54%**, and discusses its implications for the **Reserve Bank of India (RBI)** and overall **macroeconomic management**.

Key Points:

1. Current Trend:

- Retail inflation has been **declining steadily** through the current financial year.
- The **average inflation rate** for the first half of FY 2025-26 is **2.2%**, within the **RBI's target band of 2-6%** but **below the 4% midpoint target**.

2. Implications of Low Inflation:

- Persistent low inflation indicates that **supply is outstripping demand**, leading to concerns about **weak domestic consumption**.
- Categories such as **clothing and footwear** have witnessed consistent price declines for over two years.
- The article compares India's scenario with **China's over-supply problem**, which forced it to depend on exports to sustain growth.

3. Government Measures:

- The government attempted to stimulate demand via **income-tax cuts** and **GST reductions**.
- However, these led only to **temporary spending spurts**, as households preferred **saving or debt reduction** over consumption.

4. Policy Suggestions:

- To spur demand, India needs a **sustained rise in real wages** and **private-sector investment**.
- The RBI should consider **lowering interest rates** at the next **Monetary Policy Committee (MPC)** meeting to encourage borrowing and investment.
- The article criticises the RBI for **inaccurate inflation forecasts** — it predicted 4% inflation in April but revised it down to 2.6% by September, exposing flaws in its estimation models.

5. Conclusion:

- The RBI must refine its **forecasting methods** to avoid policy mismatches.
 - At a time of **low inflation and weak demand**, a more **accommodative monetary policy** is advisable to stimulate economic growth.
-

Hindi Summary (हिन्दी सारांश):

सितंबर 2025 में **खुदरा मुद्रास्फीति (Retail Inflation)** घटकर **1.54%** के **99 महीनों के न्यूनतम स्तर** पर पहुंच गई है, जिससे **भारतीय रिज़र्व बैंक (RBI)** के लिए नई नीति चुनौतियाँ सामने आई हैं।

मुख्य बिंदु:

1. वर्तमान स्थिति:

- चालू वित्त वर्ष में मुद्रास्फीति लगातार घट रही है।
- वित्त वर्ष 2025-26 की पहली छमाही में औसत मुद्रास्फीति **2.2%** रही, जो आरबीआई के **2-6% लक्ष्य दायरे** के भीतर है, किंतु **4% के आदर्श लक्ष्य से नीचे** है।

2. कम मुद्रास्फीति का प्रभाव:

- लगातार घटती कीमतें यह दर्शाती हैं कि **आपूर्ति माँग से अधिक** है, जिससे **घरेलू उपभोग** में कमजोरी आ रही है।
- कपड़ा और फुटवियर जैसी श्रेणियों में दो वर्षों से कीमतें लगातार गिर रही हैं।
- चीन की तरह भारत भी **अधिशेष उत्पादन (oversupply)** की समस्या का सामना कर सकता है।

3. सरकारी कदम:

- सरकार ने **आयकर में कटौती** और **जीएसटी दरों में कमी** से माँग को बढ़ाने का प्रयास किया, परन्तु इसका **अल्पकालिक प्रभाव** ही पड़ा।

- लोग ऋण चुकाने और बचत बढ़ाने पर अधिक ध्यान दे रहे हैं।
- 4. **नीतिगत सुझाव:**
 - **वास्तविक मजदूरी (real wages)** बढ़ाने और **निजी निवेश (private investment)** को प्रोत्साहित करने की आवश्यकता है।
 - आरबीआई को आगामी **मौद्रिक नीति समिति (MPC)** बैठक में **ब्याज दरों में कटौती** करनी चाहिए।
 - लेख ने आरबीआई की **पूर्वानुमान त्रुटियों (forecast errors)** की आलोचना की है — अप्रैल में 4% की भविष्यवाणी के बाद इसे सितंबर में 2.6% तक संशोधित किया गया।
- 5. **निष्कर्ष:**
 - आरबीआई को अपने **पूर्वानुमान मॉडल** को और सटीक बनाना चाहिए।
 - **कम मुद्रास्फीति और सुस्त माँग** के दौर में **उदार मौद्रिक नीति (accommodative monetary policy)** अपनाना आर्थिक विकास के लिए आवश्यक है।

UPSC/BPSC/JPSC Relevance:

GS Paper III – Indian Economy

- Inflation & its Measurement (CPI, WPI)
- Monetary Policy & RBI's Role
- Growth vs. Inflation Dilemma
- Fiscal Measures: Tax Cuts & GST
- Economic Cycles & Demand Management

Key Concepts for Exam:

- **Retail Inflation (CPI)** – Measures price rise affecting consumers.
- **RBI's Inflation Target:** $4\% \pm 2\%$ (i.e., 2–6%).
- **Accommodative Monetary Policy:** Lowering interest rates to stimulate growth.
- **Demand Deficiency:** When supply exceeds consumption capacity.
- **Forecasting Accuracy:** Crucial for effective macroeconomic policy decisions.

IMF forecasts India to grow 6.6% in 2025, cuts projection for next year

The Hindu Bureau
NEW DELHI

The International Monetary Fund (IMF), in its October outlook, increased India's growth projections by 20 basis points to 6.6%

for 2025 whilst projecting a decline of the same intensity to 6.2% in 2026.

The Washington-headquartered financial institution predicted that global growth would edge upwards by 20 basis points to

3.2% this year, with the outlook for 2026 unchanged at 3.1%.

Elaborating the rationale for the upward revision for India, IMF attributed it to a carry-over effect from a "strong" first quarter,

which helped New Delhi "more than offset" the impact of U.S. President Donald Trump-induced tariff regime since July.

India's GDP in June-end had peaked to a five-quarter high of 7.8%, driven pri-

marily by sectors such as manufacturing, services and construction.

The downward revision for 2026, thus, considers a fading of the momentum from the first quarter.

IMF attributed the slow-

down in global growth to headwinds from "uncertainty and protectionism".

The IMF, however, stated that the impact of the tariff was "smaller than originally announced [anticipated]".

GS Paper:

GS Paper III – Indian Economy

(Topics: Economic Growth, Global Economic Institutions, IMF Outlook, India's GDP Trends)

English Summary:

The **International Monetary Fund (IMF)**, in its **October 2025 World Economic Outlook**, has **raised India's GDP growth projection by 20 basis points to 6.6% for 2025**, while **lowering the projection for 2026 to 6.2%**.

The IMF attributed the upward revision to a **strong carry-over effect** from India's robust **first-quarter growth**, where **GDP grew 7.8%**, driven primarily by **manufacturing, services, and construction** sectors.

The global growth outlook was also revised **upward to 3.2% for 2025**, with 2026 projected to remain steady at **3.1%**. The IMF noted that India's economic resilience and **policy support** helped offset the adverse impacts of the **U.S. tariff regime** initiated earlier in the year.

However, for 2026, the IMF anticipates a **slowdown in growth momentum**, citing global challenges like **uncertainty, protectionism, and trade headwinds**. It also noted that while tariffs imposed by the U.S. did affect trade flows, the **actual impact was smaller than initially anticipated**.

Overall, India continues to stand out as the **fastest-growing major economy**, sustaining strong domestic demand amid a weakening global environment.

Hindi Summary (हिन्दी सारांश):

अंतर्राष्ट्रीय मुद्रा कोष (IMF) ने अपनी अक्टूबर 2025 की विश्व आर्थिक आउटलुक रिपोर्ट में भारत की आर्थिक वृद्धि दर का अनुमान 6.6% कर दिया है, जो पिछले अनुमान से 0.2 प्रतिशत अंक (20 बेसिस पॉइंट) अधिक है। हालांकि, 2026 के लिए अनुमान घटाकर 6.2% कर दिया गया है।

IMF ने बताया कि यह वृद्धि मुख्यतः पहली तिमाही की मजबूत प्रदर्शन (7.8%) से उत्पन्न carry-over effect के कारण है। वृद्धि में निर्माण (manufacturing), सेवा (services) और निर्माण कार्य (construction) प्रमुख योगदान दे रहे हैं।

वैश्विक वृद्धि दर के अनुमान को भी 2025 के लिए 3.2% तक बढ़ाया गया है, जबकि 2026 के लिए 3.1% पर स्थिर रखा गया है। IMF ने कहा कि भारत ने अमेरिकी टैरिफ नीतियों के नकारात्मक प्रभावों को नीतिगत समर्थन और मजबूत घरेलू मांग के माध्यम से संतुलित किया।

हालांकि 2026 में वैश्विक अनिश्चितताओं, संरक्षणवाद और व्यापारिक तनाव के कारण वृद्धि दर में कुछ गिरावट की संभावना जताई गई है। IMF ने यह भी कहा कि अमेरिकी टैरिफ का प्रभाव “उम्मीद से कम” रहा। कुल मिलाकर, भारत अभी भी विश्व की सबसे तेजी से बढ़ती प्रमुख अर्थव्यवस्था बना हुआ है।

UPSC/BPSC/JPSC Relevance:

GS Paper III – Indian Economy

- Economic Growth Trends and Forecasts
- IMF and World Economic Outlook Reports
- Global Trade Tensions and Their Impact
- India's Role in the Global Economy
- Sectoral Contributions to GDP

Menacing to 'cool': how views on China shifted in Vietnam

NEWS ANALYSIS

Reuters
HANOI

Dozens of young Vietnamese women lined up for hours last month to catch a glimpse of “cool” troops marching through Hanoi in a huge military parade. But it was not their own soldiers they were looking out for. It was the Chinese contingent.

The scene reflects a shift in attitudes towards China amid trade tensions with the United States - which has allowed Vietnamese leaders to push forward with sensitive projects, such as high-speed rail links and special economic zones close to China, that may significantly boost bi-

lateral ties. Only a few years ago, with many Vietnamese wary of a powerful neighbour with which they have fought multiple wars, such projects were seen as too controversial and caused violent protests.

Softening views
But views are softening, posts on social media, on-line searches and language learning data show.

Nearly 75% of Vietnamese respondents prefer the United States to China as a partner, but the share favouring China is rising faster than anywhere else in Southeast Asia, bucking the regional trend, according to a poll conducted by the Singapore-based ISEAS-Yusof Ishak Institute.

Social media appear to



Two to tango: Vietnam's Communist Party General Secretary Lam and China's Xi Jinping, via REUTERS

be playing a crucial role in the changing mood in Vietnam - and in particular TikTok, which is popular among the young and last year had 67 million users in Vietnam.

When users of the platform owned by Chinese tech giant ByteDance search for the Vietnamese word for China, they get overwhelmingly positive results, some of them dat-

ing back to 2023.

Among popular videos suggested by TikTok are clips of Chinese soldiers performing synchronised dances and video showcasing Chinese cities, with ma-

ny viewers expressing admiration for China's rapid development.

TikTok users searching for the Vietnamese name of the South China Sea, a frequent flashpoint between the two Communist countries that have competing claims over the waters, often get clips on tropical storms or tensions between China and the Philippines, which also has claims on parts of the sea, according to tests conducted without user profiles to avoid algorithmic bias.

TikTok's algorithm is confidential. China has orchestrated online campaigns using fake accounts on platforms including TikTok and Facebook to promote its geopolitical interests in the Philippines. China's foreign ministry

did not respond to a question about possible online campaigns but said bilateral relations have deepened. Vietnam's Foreign Ministry did not reply to a request for comment.

Flawless soldiers

In September, crowds gathered in Hanoi to celebrate the 80th anniversary of Vietnam's declaration of independence from colonial rule.

Tens of thousands lined the streets, many of them to watch Chinese troops march alongside Vietnamese soldiers - an unprecedented sight in the capital of a country that was last invaded by China in the late 1970s and where major streets carry names of anti-Chinese heroes. One video about the pa-

rade reached 3.3 million views on TikTok and drew around 1,400 comments, many praising the Chinese soldiers' "flawless" marching. Similar videos on other platforms also drew positive reactions, although Facebook users were more sceptical of both China and the U.S.

“Young Vietnamese online sound less strident about China than before, but that owes more to the state's increasingly tightening control of nationalism than to fading resentment,” said Nguyen Khac Giang from ISEAS. Online campaigns against China are still frequent in Vietnam and usually target companies for using Beijing-aligned maps of the South China Sea, but they tend to be short-lived.

GS Paper:

GS Paper II – International Relations

(Topics: India's Neighborhood & Regional Relations, China's Influence in Southeast Asia, Soft Power Diplomacy, ASEAN Geopolitics)

English Summary:

The article highlights a **notable shift in Vietnamese public perception toward China**, moving from **hostility and suspicion** to a more **neutral or even favorable** outlook, particularly among the youth.

Key Insights:

1. Changing Perceptions:

- During a **military parade in Hanoi**, crowds—especially young Vietnamese—were drawn not to their own soldiers but to the **Chinese contingent**, reflecting curiosity and admiration rather than resentment.
- This is a marked change considering the historical animosity between the two nations, stemming from multiple wars and ongoing **South China Sea disputes**.

2. Role of Media and Technology:

- **TikTok**, owned by China's **ByteDance**, has played a significant role in shaping opinions.
 - The platform has **67 million users in Vietnam**, and videos showcasing **Chinese soldiers' synchronized drills and discipline** have gone viral, attracting millions of views and positive comments.
 - Analysts note that this softening is partly due to **algorithmic suggestions** that highlight China's modernity, development, and discipline, while toning down contentious topics like border clashes.
3. **Social Sentiment & Soft Power:**
- Surveys by the **ISEAS-Yusof Ishak Institute** show that while **75% of Vietnamese still prefer the U.S.** as a strategic partner, **China's favorability is rising faster in Vietnam than anywhere else in Southeast Asia.**
 - China is leveraging **soft power** through **social media influence, cultural outreach**, and **economic engagement** projects like high-speed rail and special economic zones.
4. **Geopolitical Angle:**
- This shift may ease tensions between **Hanoi and Beijing**, both Communist regimes with overlapping strategic interests.
 - However, it also raises concerns for regional powers (including **India, the U.S., and ASEAN**) about **China's growing influence through digital propaganda and economic dependency.**
5. **Cautionary Note:**
- Despite these trends, anti-China sentiments remain strong among older generations and nationalist circles.
 - Vietnamese authorities remain wary of China's online influence and **frequently remove pro-China content** or restrict mapping platforms showing **Beijing's territorial claims in the South China Sea.**

Hindi Summary (हिन्दी सारांश):

लेख में वियतनाम में चीन के प्रति दृष्टिकोण में बदलाव को दर्शाया गया है — जहां पहले चीन को **खतरनाक (menacing)** माना जाता था, वहीं अब युवाओं में उसे “cool” और अनुशासित राष्ट्र के रूप में देखा जा रहा है।

मुख्य बिंदु:

1. **दृष्टिकोण में परिवर्तन:**
 - हाल ही में **हनोई में आयोजित सैन्य परेड** में युवा वियतनामी नागरिक अपने सैनिकों की बजाय **चीनी सैनिकों** को देखने के लिए अधिक उत्साहित थे।
 - यह परिवर्तन दोनों देशों के बीच ऐतिहासिक **युद्धों और दक्षिण चीन सागर विवादों** के बावजूद हुआ है।
2. **मीडिया और सोशल प्लेटफॉर्म का प्रभाव:**
 - **टिकटॉक (TikTok)** जैसे प्लेटफॉर्म, जो **चीन की कंपनी ByteDance** के स्वामित्व में हैं, ने युवाओं की सोच को प्रभावित किया है।
 - चीनी सैनिकों के **अनुशासित परेड वीडियो** को लाखों बार देखा गया है और सकारात्मक प्रतिक्रियाएँ मिली हैं।
 - टिकटॉक का एल्गोरिदम चीन की प्रगति और अनुशासन को उजागर करता है, जबकि विवादास्पद विषयों को कम दिखाता है।
3. **सामाजिक और सांस्कृतिक प्रभाव:**
 - **ISEAS-Yusof Ishak Institute** के सर्वेक्षण के अनुसार, **75% वियतनामी अभी भी अमेरिका को प्राथमिक साझेदार मानते हैं**, परंतु चीन की लोकप्रियता वियतनाम में **तेजी से बढ़ रही है**।
 - चीन अपने **सॉफ्ट पावर (Soft Power)** — जैसे संस्कृति, सोशल मीडिया, और आर्थिक निवेश — के माध्यम से प्रभाव बढ़ा रहा है।
4. **रणनीतिक प्रभाव:**
 - यह बदलाव **हनोई और बीजिंग** के बीच संबंधों को और सहज बना सकता है, परन्तु यह **भारत, अमेरिका और आसियान देशों** के लिए **चिंता का विषय** भी है क्योंकि चीन डिजिटल प्रचार और आर्थिक सहयोग के माध्यम से क्षेत्रीय प्रभाव बढ़ा रहा है।
5. **सावधानी:**

- वियतनाम में अब भी राष्ट्रवादी समूहों में चीन विरोधी भावना प्रबल है।
- सरकार समय-समय पर प्रो-चाइना सामग्री या चीन के दावों वाले नक्शे वाले ऑनलाइन प्लेटफॉर्म पर नियंत्रण रखती है।

UPSC/BPSC/JPSC Relevance:**GS Paper II – International Relations**

- Regional geopolitics: China's influence in ASEAN and Indo-Pacific.
- Soft Power and Information Warfare.
- Role of technology and social media in diplomacy.
- Vietnam's foreign policy balancing between U.S. and China.

Key Concepts for Examination:

- **Soft Power Diplomacy:** Use of culture, technology, and media to shape global perception.
- **Information Warfare:** Strategic manipulation of information to influence foreign public opinion.
- **South China Sea Dispute:** Key geopolitical flashpoint involving China, Vietnam, and the Philippines.
- **ASEAN-China Relations:** Balancing economic engagement with sovereignty concerns.

A green advantage in tractor exports

The government's recent decision to cut the Goods and Services Tax (GST) rate on tractors to 5% is a timely boost for farmers and manufacturers alike. Lower costs are expected to accelerate mechanisation at home, contributing to a stronger domestic manufacturing base to support exports abroad. Yet the global regulatory landscape for such exports is shifting fast, as increasingly stringent emissions standards come into effect in the world's leading markets. India faces a defining choice: cling to low-cost competitiveness or pivot boldly towards cleaner, higher-value machines that can command global markets.

Regulatory limits for emissions

Tractors are the backbone of Indian agriculture. They are used to plough, sow, harvest, irrigate, transport produce, and manage crop residue. Their versatility across crops and terrains has made them indispensable, reducing drudgery and ensuring timely operations. This robust domestic base has propelled India to become a leading global supplier, with tractor exports totaling \$1.15 billion and reaching 162 countries in 2024-25. But with growing volumes come growing externalities: an analysis by the International Council on Clean Transportation (ICCT) found that emissions from tractors and other non-road equipment in India are projected to surpass those from road vehicles by 2030. Policy has already begun to shift this trajectory. As discussed in a previous ICCT analysis, India's leap to Bharat Stage (TREM) IV standards for agricultural tractors in 2023 slashed the regulatory limit for particulate emissions by up to 94%, nearly closing the gap with the norms of the United States and European Union. By April 2026, Bharat Stage (TREM) V standards will bring most Indian tractors in line with U.S. Tier 4f and EU Stage V requirements.

• These reforms aren't just



Aravind Harikumar

Researcher, ICCT



Amit Bhatt,

India Managing Director, ICCT

Emission standards are not a burden but a passport to stronger trade

environmental milestones; they are trade strategies. Regulatory alignment means Indian manufacturers can sell the same tractors in domestic and foreign markets, avoiding compliance costs and supporting economies of scale in production. A recent ICCT working paper on India's tractor exports found that such alignment may already be paying dividends. While overall tractor exports to the U.S. fell by 40% in 2023-24 and 10% in 2024-25, exports in the large segment (75-130 kW), where Indian and U.S. norms align, surged. Meanwhile, in Europe, exports to Belgium surged after the rollout of TREM IV led to a closer alignment of regulatory frameworks: medium-range tractors (37-75 kW) exported in 2023-24 were nearly 200 times the 2022-23 levels, while large tractor exports jumped from virtually zero to \$28 million in 2024-25.

When Brazil introduced emission standards for tractors in 2017, the models that Indian manufacturers were selling domestically were already compliant, thanks to standards in effect in India since 2010. That head start gave Indian manufacturers an advantage. After Brazil's MAR-I standards came into effect (in 2017 and 2019), Indian tractor exports to Brazil climbed from \$4.5 million in 2017-18 to \$88 million in 2024-25 – a staggering CAGR of 65% – further highlighting how regulatory

alignment can help enable demand for agricultural machinery.

An opportunity

To be clear, many factors influence global trade, and no causal link has been established between emission standards and tractor exports. Indeed, Indian tractor exports have also grown in markets without emission norms, such as Bangladesh, South Africa, and Thailand, where they are valued for reliability and affordability. Still, data from India's top seven tractor export destinations indicate that such exports increased with greater alignment of emission standards, either by enforcement of more stringent norms in India or by the importing country. Faced with rising tariffs in the U.S., Indian manufacturers have an opportunity to reposition themselves not merely as cost-competitive producers, but as higher-value, cleaner-technology suppliers. Cleaner machines often deliver lower lifetime costs, better efficiency, and resilience against future regulatory changes. TREM V's implementation will only strengthen India's standing, enabling smoother entry into Europe and the U.S. while extending leadership in emerging markets.

The lesson is clear: emission standards are not a burden but a passport to stronger trade. As tariffs rise and protectionism spreads, India must reposition itself not just as a low-cost producer but as a leader in clean agricultural machinery. Policy enablers, such as the GST cut and targeted incentives for electric tractors, can reinforce this shift. If India plays its cards right, tractors can do more than transform our farms; they can power our exports. Low-emission, high performance machines will not just meet global demand but set new benchmarks, turning India's tractor industry into a force that drives both rural growth and global trade.



NAGARA GOPAL

GS Paper:

GS Paper III – Indian Economy & Environment

(Topics: Agriculture and Allied Sectors, Industrial Growth, Environmental Standards, Sustainable

English Summary:

The article analyses how **India's reduction of GST on tractors from 12% to 5%**, along with **tightened emission standards**, is transforming the country into a **global leader in sustainable agricultural machinery exports**.

Key Highlights:

1. Policy Boost for Mechanisation:

- The **GST cut** has lowered costs, encouraging **mechanisation in agriculture** and strengthening India's manufacturing base.
- With a strong domestic market, India's **tractor exports** have reached **\$1.15 billion**, covering **162 countries by 2024-25**.

2. Shift in Global Standards:

- The **International Council on Clean Transportation (ICCT)** reports that **emission norms for tractors and farm machinery** are rapidly tightening worldwide.
- India's transition to **Bharat Stage (TREM) IV and V emission norms** brings it nearly in line with **U.S. and EU standards**, allowing Indian manufacturers to compete globally.

3. Emission Standards as a Competitive Edge:

- Contrary to belief, strict **emission standards are not a burden**; they help Indian manufacturers access more markets.
- Compliance gives India a **first-mover advantage** in countries adopting emission rules later (e.g., **Brazil, South Africa, Thailand, Bangladesh**).

4. Case Study – Brazil:

- When Brazil introduced emission standards in 2017, Indian tractors were already compliant.
- As a result, India's tractor exports to Brazil skyrocketed from **\$4.5 million (2017-18)** to **\$88 million (2024-25)** — a **65% compound annual growth rate (CAGR)**.

5. Regulatory Alignment with Global Markets:

- India's **TREM V standards (effective 2026)** align with EU and U.S. norms, facilitating exports to advanced economies.
- In Europe, exports of **medium-range tractors (37-75 kW)** have doubled since FY 2023, showing the payoff from regulatory consistency.

6. Opportunity for Sustainable Leadership:

- India's competitive advantage now lies in **cleaner, efficient, and durable technology**, not just in low-cost production.
- Emission-aligned tractors offer **better lifetime costs, fuel efficiency, and resilience to global trade barriers**.
- The focus on green technology will also support India's entry into **electric tractor manufacturing**.

7. Strategic Message:

- Regulatory reforms like TREM V show that **environmental responsibility can coexist with export competitiveness**.
 - India must position itself as a **"clean technology hub"** rather than a low-cost supplier.
 - The reforms reflect India's **climate leadership** and potential to power **global sustainable agriculture**.
-

Hindi Summary (हिन्दी सारांश):

लेख में बताया गया है कि **भारत में ट्रैक्टरों पर जीएसटी को 12% से घटाकर 5% करने और उत्सर्जन मानकों (Emission Standards) को सख्त करने** से देश **सतत कृषि मशीनरी निर्यात में वैश्विक नेता बन रहा है**।

मुख्य बिंदु:

1. नीतिगत प्रोत्साहन:

- जीएसटी में कटौती से कृषि यंत्रीकरण को बढ़ावा मिला है।
- भारत अब 162 देशों को ट्रैक्टर निर्यात कर रहा है और निर्यात मूल्य **\$1.15 बिलियन (2024-25)** तक

- पहुंच गया है।
2. **वैश्विक मानकों के अनुरूपता:**
 - अंतर्राष्ट्रीय स्वच्छ परिवहन परिषद (ICCT) के अनुसार, कृषि उपकरणों के लिए **वैश्विक उत्सर्जन मानक** कड़े हो रहे हैं।
 - भारत के **भारत स्टेज (TREM) IV और V मानक** अब **अमेरिका और यूरोप** के बराबर हैं, जिससे भारत की प्रतिस्पर्धात्मक स्थिति मजबूत हुई है।
 3. **उत्सर्जन मानक = प्रतिस्पर्धात्मक लाभ:**
 - सख्त मानक भारत के लिए बोझ नहीं बल्कि अवसर साबित हो रहे हैं।
 - जो भारतीय कंपनियाँ घरेलू स्तर पर पहले से ही अनुपालन कर रही थीं, उन्हें **नए बाजारों (ब्राज़ील, दक्षिण अफ्रीका, थाईलैंड, बांग्लादेश)** में बढ़त मिली है।
 4. **ब्राज़ील उदाहरण:**
 - **2017 में ब्राज़ील** में उत्सर्जन मानक लागू हुए, तब भारत के ट्रैक्टर पहले से अनुपालक थे।
 - नतीजतन, भारत का ब्राज़ील को ट्रैक्टर निर्यात **\$4.5 मिलियन (2017-18)** से बढ़कर **\$88 मिलियन (2024-25)** हो गया — यानी **65% वार्षिक वृद्धि दर**।
 5. **पर्यावरणीय और आर्थिक समन्वय:**
 - भारत के **TREM V मानक (2026)** अब **ईयू और यूएस** के अनुरूप हैं, जिससे विकसित देशों में निर्यात बढ़ेगा।
 - यूरोप में **मध्यम श्रेणी के ट्रैक्टरों (37-75 kW)** का निर्यात पिछले वर्ष की तुलना में लगभग **दो गुना** हुआ।
 6. **हरित प्रौद्योगिकी का अवसर:**
 - भारत अब सिर्फ “सस्ते उत्पादक” के रूप में नहीं, बल्कि **स्वच्छ तकनीकी (clean-tech)** नेतृत्वकर्ता के रूप में उभर सकता है।
 - उत्सर्जन-अनुरूप ट्रैक्टर **ऊर्जा कुशल, लंबी आयु वाले और भविष्य के मानकों के अनुरूप** हैं।
 - यह भारत के लिए **विद्युत ट्रैक्टर (electric tractors)** के क्षेत्र में भी अवसर खोलता है।
 7. **रणनीतिक संदेश:**
 - **TREM V जैसे सुधार** दिखाते हैं कि **पर्यावरण संरक्षण और निर्यात वृद्धि** साथ-साथ चल सकते हैं।
 - भारत को अब **“स्वच्छ प्रौद्योगिकी में वैश्विक नेता”** बनने की दिशा में कदम बढ़ाने चाहिए।

UPSC/BPSC/JPSC Relevance:

GS Paper III – Economy & Environment

- Sustainable Industrial Development
- Green Technology and Exports
- Environmental Regulations and Trade Competitiveness
- Make in India & Export Diversification
- Climate Change and Agriculture

How innovation drives economic growth

Who won the Nobel prize for Economic Sciences this year? What is the difference between propositional knowledge and prescriptive knowledge? What is the theory of creative destruction? How much should a country invest in research and development?

EXPLAINER

T.C.A. Sharad Raghavan

The story so far:

In October 13, the Royal Swedish Academy of Sciences announced that it had decided to award the 2025 Sveriges Riksbank Prize in Economic Sciences to Joel Mokyr, Philippe Aghion and Peter Howitt “for having explained innovation-driven economic growth”. One half of the prize goes to Mr. Mokyr, while the other half will be divided between Mr. Aghion and Mr. Howitt.

Who are the winners?

Joel Mokyr was born in 1946 in Leiden, the Netherlands. He is currently a professor at Northwestern University. According to the award citation, he won the prize “for having identified the prerequisites for sustained growth through technological progress”. Philippe Aghion was born in 1956 in Paris, France. He is currently a professor at Collège de France and INSEAD, Paris, and The London School of Economics and Political Science, U.K. Peter Howitt was born in 1946 in Canada and is a professor at Brown University in the U.S. Mr. Aghion and Mr. Howitt jointly won the other half of the award “for the theory of sustained growth through creative destruction”.

What was Joel Mokyr's work?

To understand the work of all three economists, one must first understand the fact that global growth has been unusually sustained over the last 200 years, following centuries of stagnation. The work of all three economists, in different ways, tries to answer what happened in the last two centuries that set them apart. This will also help create a model of sorts for sustained growth into the future as well.

Through his research in economic history, Mr. Mokyr showed that a continual flow of “useful knowledge” is



Huge honour: Recipients of the Nobel Prize in Economics announced in Stockholm, on October 13. AP

necessary for sustained growth. This useful knowledge, he theorised, has two parts: propositional knowledge and prescriptive knowledge. Propositional knowledge basically has to do with looking at the natural world and figuring out why something works. Prescriptive knowledge refers to actual practical instructions, drawings or recipes that describe what is necessary for something to work – like an instruction manual.

He argued that, prior to the Industrial Revolution, the world's leading innovators had a good command of propositional knowledge. That is, they had strong theories, after observing the world, of why things worked. This propositional knowledge, however, did not rest on a bedrock of prescriptive knowledge. Without the latter, it became next to impossible to build upon existing knowledge. This changed in the 16th and 17th centuries, Mr. Mokyr argued.

Scientists started including precise measurement methods and controlled experiments in their work, and began to insist that results be reproducible.

What were implications on policy?

The policy prescription of Mr. Mokyr's research was twofold. The first was that new ideas would become a reality only if practical, technical and commercial knowledge was abundantly available. Without these, he argued that even brilliant ideas such as Leonardo da Vinci's helicopter designs would remain on the drawing board, as they indeed did. He argued that sustained growth first took place in Britain because it was home to many skilled artisans and engineers who were able to transform ideas into practical and commercial products, which was vital in achieving sustained growth. The policy implication from this is that governments must invest heavily in

skilling if they want sustained growth. The other factor – and policy prescription – for sustained growth was that society should be open to change. Innovation invariably creates winners, but it also creates losers as new technologies replace existing ones. This can often lead to resistance to change from established interest groups.

What about Aghion and Howitt?

These two economists took the idea of “creative destruction” – where innovation leads to gains, but also the destruction of the incumbents – and created a mathematical model to capture it. They showed, through maths, how technological advancement leads to sustained growth.

The model developed by both of them can be used to analyse whether there is an optimal volume of R&D in society. There are two opposing trends here, as per the developed model. The first trend is that, when a new innovation comes in and replaces another, the benefits from the replaced technology still continue to flow to society, even if the company that developed it is no longer making profits from it. In other words, technology that has been outcompeted has more value for society than for the company that developed it. This makes it imperative that R&D be subsidised. However, the other competing trend is that when a company comes up with an innovation that rises to the top of the chain, it starts receiving bulk of the profits even though the actual improvement might have been only incremental. For society, the gain from this new technology is limited because it is only a relatively small improvement over the older technology. In such a scenario, investments into R&D might be too high. Therefore, under this trend, R&D should not be subsidised.

The answer to the question of how much R&D needs to happen will thus vary depending on the society and economy in question, but the model developed by the two economists lends a lot of insight into how to arrive at this optimal level.

THE GIST

Joel Mokyr won the prize “for having identified the prerequisites for sustained growth through technological progress”.

Mr. Aghion and Mr. Howitt jointly won the other half of the award “for the theory of sustained growth through creative destruction”.

Through his research in economic history, Mr. Mokyr showed that a continual flow of “useful knowledge” is necessary for sustained growth. Mr. Aghion and Mr. Howitt took the idea of “creative destruction” – where innovation leads to gains, but also the destruction of the incumbents – and created a mathematical model to capture it.

GS Paper:

GS Paper III – Indian Economy

(Topics: Growth and Development, Innovation, Research & Development, Nobel Prize Economics 2025)

English Summary:

The article explains the **2025 Nobel Prize in Economic Sciences**, awarded to **Joel Mokyr**, **Philippe Aghion**, and **Peter Howitt** for their pathbreaking contributions to understanding **innovation-driven economic growth**.

Key Highlights:

1. Winners and Contributions:

- Joel Mokyr (Northwestern University) was awarded for identifying the **prerequisites for sustained growth through technological progress**.
- Philippe Aghion (College de France) and Peter Howitt (Brown University) shared the other half for their “**theory of sustained growth through creative destruction**.”

2. Joel Mokyr's Idea – Knowledge and Growth:

- Mokyr emphasized that global prosperity over the past two centuries stemmed from a **steady flow of useful knowledge**, not mere capital accumulation.
- He differentiated between:
 - Propositional Knowledge:** Understanding how nature works.
 - Prescriptive Knowledge:** Practical know-how—how to build, design, or implement things.
- The industrial and technological revolutions were built on the combination of both these forms of knowledge.

3. Aghion & Howitt's Theory – Creative Destruction:

- They expanded on **Schumpeter's theory of creative destruction**, which explains how

- **innovation destroys old industries while creating new ones.**
- Through mathematical modeling, they demonstrated that **technological advancement leads to sustained growth**, even though it may displace existing systems or firms.
- 4. **Innovation and Policy Implications:**
 - Innovation is both **disruptive and productive**—it creates winners (innovators) and losers (incumbents).
 - For innovation-led growth, nations must **continuously invest in research and development (R&D)** and **reskill their workforce**.
 - The model by Aghion–Howitt helps determine **optimal R&D investment levels** for balanced, sustainable growth.
- 5. **Role of Policy and Society:**
 - Mokyr argued that sustained innovation occurs when **societies remain open to change**, and governments facilitate **scientific freedom** and **intellectual exchange**.
 - Over-regulation and resistance from incumbent interest groups can suppress innovation.
 - Innovation should not just serve profit motives but **enhance societal well-being**.
- 6. **Takeaway Message:**
 - **Innovation is the engine of long-term economic growth.**
 - Governments must ensure consistent R&D investment, skill development, and openness to creative destruction.
 - Countries that align **education, policy, and technological advancement** reap the highest benefits of growth.

Hindi Summary (हिन्दी सारांश):

2025 के अर्थशास्त्र के नोबेल पुरस्कार को जोएल मोक्यर, फिलिप एघिओन, और पीटर होविट को नवाचार (Innovation)-आधारित आर्थिक विकास पर उनके सिद्धांतों के लिए दिया गया।

मुख्य बिंदु:

1. **विजेताओं का योगदान:**
 - जोएल मोक्यर को “प्रौद्योगिकीय प्रगति के माध्यम से निरंतर विकास की पूर्व-शर्तों की पहचान” के लिए सम्मानित किया गया।
 - फिलिप एघिओन और पीटर होविट को “रचनात्मक विनाश (Creative Destruction) के माध्यम से सतत विकास के सिद्धांत” के लिए संयुक्त रूप से सम्मानित किया गया।
2. **मोक्यर का सिद्धांत – ज्ञान और विकास:**
 - उन्होंने बताया कि पिछले दो शताब्दियों में आर्थिक समृद्धि का स्रोत केवल पूंजी नहीं बल्कि “उपयोगी ज्ञान का निरंतर प्रवाह (useful knowledge)” था।
 - उन्होंने दो प्रकार के ज्ञान बताए:
 - **Propositional Knowledge (सैद्धांतिक ज्ञान):** प्रकृति के नियमों को समझना।
 - **Prescriptive Knowledge (व्यावहारिक ज्ञान):** किसी तकनीक या प्रणाली को लागू करना।
 - औद्योगिक क्रांति दोनों प्रकार के ज्ञान के संयोजन से संभव हुई।
3. **एघिओन और होविट का सिद्धांत – रचनात्मक विनाश:**
 - इस सिद्धांत के अनुसार, नवाचार पुरानी तकनीकों और उद्योगों को नष्ट करता है, लेकिन साथ ही नए अवसरों का सृजन करता है।
 - गणितीय मॉडलिंग के माध्यम से उन्होंने दिखाया कि प्रौद्योगिकी उन्नति सतत विकास को प्रेरित करती है।
4. **नीतिगत निहितार्थ:**
 - नवाचार से जीतने वाले और हारने वाले दोनों उत्पन्न होते हैं।
 - सतत आर्थिक विकास के लिए R&D में निवेश और कौशल विकास (reskilling) आवश्यक है।
 - सरकारों को वैज्ञानिक स्वतंत्रता और नवाचार के लिए अनुकूल वातावरण प्रदान करना चाहिए।
5. **मुख्य निष्कर्ष:**
 - नवाचार ही दीर्घकालिक आर्थिक विकास का इंजन है।
 - देशों को शिक्षा, शोध, और नीति में तालमेल बनाकर रचनात्मक विनाश को अपनाना चाहिए।
 - जो राष्ट्र R&D में निवेश करते हैं और नए विचारों के लिए खुले रहते हैं, वही भविष्य की आर्थिक वृद्धि के

नेतृत्वकर्ता बनते हैं।

UPSC/BPSC/JPSC Relevance:

GS Paper III – Indian Economy

- Inclusive Growth and Innovation
- R&D, Science and Technology in Economic Development
- Nobel Prize 2025 (Economic Sciences)
- Creative Destruction and its Policy Implications
- Knowledge Economy & Human Capital Development

Key Concepts for Exam:

- **Creative Destruction:** Term by Joseph Schumpeter – innovation replaces old industries with new ones.
- **Useful Knowledge:** Continuous accumulation of scientific and technical understanding drives growth.
- **R&D Investment:** Determines rate of innovation and long-term competitiveness.
- **Propositional vs Prescriptive Knowledge:** Theoretical vs applied aspects of technological progress.