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India's trade deficit contracted by 9.4% to \$20.3 billion in Q1 of the financial year 2025, largely due to a nearly 11% increase in services exports, as per data released by the Ministry of Commerce and Industry.

Services exports cut India's trade deficit by 9.4% in Q1

Around 11% growth in services exports helps overall trade deficit contract to \$20.3 billion; current export growth on track to beat last year's record figures of \$825 billion, says Commerce Secretary

The Hindu Bureau
NEW DELHI

India's overall trade deficit contracted 9.4% to \$20.3 billion in the first quarter (Q1) of the current financial year, driven by a nearly 11% growth in services exports during this period, according to official data.

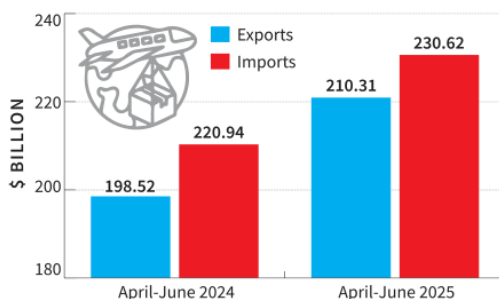
Data released by the Ministry of Commerce and Industry on Tuesday showed that India's overall exports grew to \$210.3 billion in the April-June quarter, up from \$198.5 billion in the corresponding period of the previous financial year, rising about 6%.

Positive territory

"If exports grow the way they have grown in Quarter One of this financial year, then we are going to beat last year's record exports," Commerce Secretary

Decline in deficit

The chart shows India's imports and exports in the April-June quarter in the manufacturing and service sectors



SOURCE: DIRECTORATE GENERAL OF FOREIGN TRADE

tary Sunil Barthwal said at a press briefing.

"In fact, if you look at this quarter, both merchandise as well as services are in the positive territory and better than what was expected by WTO [World Trade Organisation] in terms of world trade," he added.

India's total exports stood at an all-time high of \$825 billion in the financial year 2024-25.

Within India's total exports, it was services that drove the growth. Services exports rose to \$98.1 billion this Q1, up nearly 11% from the \$88.5 billion seen in the corresponding quarter

ter of last year.

Merchandise exports in Q1 of this financial year grew just 2% to \$112.2 billion. However, Mr. Barthwal emphasised that a large part of this slowdown was due to falling petroleum prices, since India's non-petroleum exports grew 6% during this period.

India's total imports grew 4.4% in Q1 of this financial year to \$230.6 billion, with merchandise imports growing 4.2% and services imports growing 4.9% during this period.

The United States remained the top export destination for India, with exports to that country growing 22.1% to \$25.5 billion in Q1 of this financial year. The others are the United Arab Emirates (\$9.04 billion), the Netherlands (\$5.65 billion), China (\$4.4 billion).

Key Highlights:

- **Total Exports:** India's overall exports (merchandise + services) rose by 6% to \$210.3 billion in Q1 (April-June), compared to \$198.5 billion in the same quarter last year.
- **Services Exports:** Rose to \$98.1 billion, up 10.8% from the previous year. This sector was the key driver of export growth.
- **Merchandise Exports:** Increased marginally by 2% to \$112.2 billion. Non-petroleum exports saw a healthier 6% growth, while falling petroleum prices contributed to the overall slowdown.

- **Imports:**Total imports increased by 4.4% to \$230.6 billion, with merchandise imports up 4.2% and services imports up 4.9%.
- **Major Destinations:**The United States remained India's largest export market, with a 22.1% growth in exports. Other major destinations included UAE, Netherlands, and China.

Analysis and Implications:

1. Services Sector as a Growth Engine:

- The robust growth in services exports reflects India's rising competitiveness in IT, financial, and professional services.
- This is crucial as the services sector contributes significantly to both GDP and foreign exchange earnings.

2. Structural Shift in Trade Composition:

- With merchandise exports slowing, especially due to volatile petroleum markets, India's resilience lies in the services sector.
- A shift towards non-petroleum and value-added exports indicates diversification in export strategy.

3. Trade Deficit Management:

- A reduced trade deficit improves macroeconomic stability, supports the rupee, and reduces the current account deficit (CAD).
- Services exports help offset high merchandise import bills, especially for oil and electronics.

4. Global Trade Dynamics:

- The growth outpaces WTO's projections for global trade, highlighting India's relative resilience in a subdued global trade environment.

5. Strategic Policy Directions:

- To sustain this momentum, India must continue investing in digital infrastructure, skill development, and market diversification.
- Trade agreements and facilitation measures can further boost services exports.

Way Forward:

- **Strengthen Services Ecosystem:** Continued policy support for IT, fintech, and consulting exports.
- **Boost Manufacturing:** Focus on schemes like PLI to enhance competitiveness in merchandise exports.

- Trade Diplomacy: Leverage FTAs and diplomatic relations to diversify export markets.
- Import Rationalization: Encourage domestic production of electronics, defence, and energy to reduce import dependency.

Conclusion:

India's improving trade performance, driven by strong services exports, is a positive sign for external sector health. With global headwinds continuing, the strategic shift toward a service-led export model can be a sustainable pillar for India's long-term economic growth.

UPSC Prelims Practice Question

Ques: With reference to India's trade data in Q1 of FY 2025, consider the following statements:

1. India's overall exports grew by more than 10% in Q1 compared to the same period last year.
2. Services exports grew faster than merchandise exports in Q1.
3. The United States was India's top export destination during this period.

Which of the statements given above is/are correct?

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

Ans: B)

Page 04: GS 2 : International Relations

At the Shanghai Cooperation Organisation (SCO) Council of Foreign Ministers (CFM) meeting in China, External Affairs Minister S. Jaishankar asserted a strong position against terrorism, particularly in the wake of the Pahalgam terror attack (April 22, 2025). His remarks come amid geopolitical frictions, especially with Pakistan and China, within the SCO framework.

SCO shouldn't compromise on terrorism: Jaishankar

External Affairs Minister says Pahalgam attack was carried out to 'sow religious divide'; SCO was founded to combat terrorism, separatism and extremism, he tells counterparts at meet in China

Suhasini Haidar
NEW DELHI

The Pahalgam terrorist attack of April 22 was carried out to hurt the Jammu and Kashmir economy and to "sow a religious divide", External Affairs Minister S. Jaishankar told the Shanghai Cooperation Organisation's (SCO) Council of Foreign Ministers (SCO-CFM) meeting in China, where other SCO Ministers – including Pakistan's Deputy Prime Minister and Foreign Minister Ishaq Dar – were present, and called for support to bring the perpetrators to justice.

On Tuesday, Mr. Jaishankar and the other SCO Ministers from Russia, Iran, Belarus and Central Asian states called on Chinese President Xi Jinping in Beijing before proceeding to the SCO meeting in Tianjin by train. The External Affairs Minister also held bilateral talks with Russian Foreign Minister Sergey Lavrov and Iranian Foreign Minister Abbas Araghchi, both of whom he met earlier this month at the BRICS summit in Brazil.

Mr. Jaishankar's comments came a month after the SCO Defence Ministers' meeting failed to issue a joint statement following differences over the references to terrorism. While no statement was issued af-



Friendly ties: External Affairs Minister S. Jaishankar during a meeting with Chinese President Xi Jinping in Beijing. PTI

ter the SCO Foreign Ministers' meeting as well, officials said it was not the practice to do so, as the Foreign Ministers were normally tasked with finalising the agenda for the Summit of leaders on August 31-September 1. PM Narendra Modi is expected to travel to Tianjin for the summit, which would be his first such visit since the Galwan clashes in 2020.

"The three evils that SCO was founded to combat were terrorism, separatism and extremism," Mr. Jaishankar said during his speech at the meeting, where he referred to the Pahalgam terror attack in which 26 men, mostly tourists, were religiously identified and killed. "It was deliberately conducted to undermine the tourism economy of Jammu and Kashmir, while sowing a religious divide," he added,

calling for the SCO to take an "uncompromising position" on the challenge of terrorism, and referring to the UN Security Council resolution issued in April about the attack.

A press statement issued by the SCO secretariat said that the members exchanged views on key areas of SCO cooperation including "political, economic, trade, cultural" issues and key international and regional issues, but did not specifically mention terrorism.

Mr. Jaishankar's meeting with Mr. Xi came a day after he held bilateral talks in Beijing with Chinese Foreign Minister Wang Yi and called on Chinese Vice President Han Zheng, where he hailed the "continued normalisation" of India-China relations. The Minister said that he had apprised President Xi of re-

cent developments in bilateral relations.

Chinese state media reported that Mr. Xi had told SCO Ministers that the organisation must play a "more proactive role" to ensure stability in a "turbulent and changing international landscape".

In his comments during the SCO-CFM, Pakistan Foreign Minister Mr. Dar did not refer to the issue of terrorism. In a post on social media, Mr. Dar said that he "underscored the importance of upholding international law and implementing relevant UNSC resolutions to resolve long-standing disputes", at the meeting and that Pakistan sought peace with "all its neighbours".

Referring to Afghanistan, Mr. Jaishankar said that the "compulsions of regional stability are buttressed by [India's] long-standing concern for the well-being of the Afghan people" and called for SCO members to increase development assistance.

Taking a swipe at Pakistan for closing transit for India-Afghanistan trade, Mr. Jaishankar said that the "lack of assured transit within the SCO space...undermines the seriousness of advocating cooperation in economic areas", and advocated for the International North South Transport Corridor (INSTC) that runs through Iran.

Key Highlights:

- **Pahalgam Attack Mentioned:** Jaishankar described the attack as an attempt to undermine J&K's tourism economy and sow religious divide, emphasizing the need for justice.
- **Call for Uncompromising Stand on Terrorism:** He reminded members that SCO was founded to combat the "three evils" — terrorism, separatism, extremism, and urged collective resolve.
- **No Joint Statement Issued:** Reflecting internal divisions, including over references to terrorism, no joint communiqué was released—similar to the earlier SCO Defence Ministers' meeting.
- **Bilateral Engagements:** Jaishankar met with Russian, Iranian, and Chinese counterparts, including Chinese President Xi Jinping, signaling cautious diplomatic outreach amid border tensions.
- **India-China Dynamics:** Talks referenced the "continued normalisation" of ties post-Galwan, though core boundary issues remain unresolved.
- **Pakistan's Position:** Pakistani FM Ishaq Dar avoided direct reference to terrorism, instead reiterating demands for the implementation of UNSC resolutions, indirectly invoking the Kashmir issue.
- **Trade and Connectivity Issues:** Jaishankar criticized Pakistan's blocking of India-Afghanistan transit trade, calling it a contradiction to SCO's economic cooperation goals, and promoted the INSTC as an alternative.

Analysis and Implications:

1. India's Counter-Terrorism Diplomacy:

- Jaishankar's remarks reaffirm India's zero-tolerance policy on terrorism, and its expectation for SCO's collective accountability.
- It also underscores India's frustration with SCO's ambiguity, especially due to China-Pakistan alignment on key security issues.

2. Geopolitical Tensions Within SCO:

- The absence of a joint statement and diverging narratives reveal intra-SCO fault lines, especially over counter-terrorism definitions.
- China and Pakistan's positions often undermine consensus, limiting SCO's operational effectiveness.

3. India-China Engagement:

- Bilateral talks signal a pragmatic approach amid tensions, though deep strategic distrust remains post-2020 Galwan clashes.
- China's call for stability shows its concern about SCO credibility, but India remains cautious.

4. Connectivity and Strategic Autonomy:

- India's push for INSTC and criticism of Pakistan's transit denial reflects India's broader push for regional connectivity on its own terms.
- This is aligned with India's Eurasian outreach strategy, bypassing traditional chokepoints.

Way Forward:

- **Strengthen Strategic Alliances:** Deepen ties with like-minded SCO members (e.g., Russia, Iran, Central Asia) to build a counterweight to China-Pak axis.
- **Institutional Push for Counter-Terrorism:** Advocate for a more formal SCO anti-terrorism framework with real-time cooperation and transparency.
- **Focus on Alternative Corridors:** Expedite development of INSTC, Chabahar Port, and engagement in Eurasian Economic Union for trade diversification.
- **Sustain Multilateral Engagement:** Despite hurdles, India must remain active in SCO to shape regional discourse, ensure presence in Central Asia, and counter cross-border narratives.

Conclusion:

India's assertive stance at the SCO signals a clear foreign policy doctrine—terrorism cannot be relativized or politicized, even in multilateral settings. While intra-SCO frictions persist, India seeks to balance diplomatic engagement with strategic clarity, projecting itself as a responsible and resilient regional power.

UPSC Mains Practice Question

Ques: India's uncompromising stance on terrorism within multilateral groupings like the SCO reflects its evolving foreign policy priorities." In this context, critically analyze India's approach to counter-terrorism diplomacy and its challenges within the SCO framework. **(250 words)**

The Genetic Engineering Appraisal Committee (GEAC) has approved confined field trials for two genetically modified (GM) maize hybrids at Punjab Agricultural University during the Kharif 2025 season. The trials are focused on herbicide tolerance and insect resistance traits developed by Bayer Crop Science.

Confined field trials of GM maize to begin at Punjab university this kharif season

Vikas Vasudeva
CHANDIGARH

Field trials of two kinds of genetically modified (GM) maize are expected to begin this kharif (summer) season at the Punjab Agricultural University, weeks after the Genetic Engineering Appraisal Committee, the country's top regulator, gave the nod for the trials after receiving consent from the Punjab government.

In its meeting in June, the committee recommended a proposal by Bayer Crop Science Ltd. for the conduct of confined field trials of herbicide-tolerant transgenic maize and insect-resistant transgenic maize at the Ludhiana-based university. The trials will study weed-control efficacy in herbicide-tolerant maize hybrids with the application of glyphosate-K salt, and the efficacy of in-



Trials will study weed-control efficacy in herbicide-tolerant maize hybrids.

sect-protected maize hybrids against targeted lepidopteran pests.

"The trials are for research purposes only, and we are not going to recommend that it (GM maize) should be grown commercially or not. It's for the Central government to take a call," Punjab Agricultural University Vice-Chancellor Satbir Singh Gosal told *The Hindu*.

The Coalition for a GM-Free India, a platform advocating safe and sustaina-

ble agriculture, has urged the Punjab government to withdraw its no-objection certificate for the trials.

In a letter to the Punjab Agriculture Minister, Kavitha Kuruganti, co-convenor of the coalition, said that the State had issued an order prohibiting the use of glyphosate, a deadly herbicide, with a large body of scientific literature pointing to its negative impacts on human health and the environment.

"How can the university experiment with herbicide-tolerant maize that has been modified to withstand the application of glyphosate, which is in itself against the legally-approved label claim for glyphosate in India's pesticides regulatory regime?" she said. She also urged the State to prioritise an inquiry into the scientific basis for such NOCs were being issued.

Key Highlights:

- **Nature of Trials:**
 - Conducted for research purposes only, not for commercial cultivation.
 - Aim: To test glyphosate-tolerant maize and insect-resistant maize (against lepidopteran pests).
- **Location & Stakeholders:**
 - Trials to take place in Ludhiana under the supervision of Punjab Agricultural University.
 - Approved by GEAC with Punjab government's consent.

- **Opposition Raised:**

- Coalition for a GM-Free India opposed the move, citing:
 - Glyphosate ban in Punjab due to health/environment concerns.
 - Lack of public consultation or scientific transparency in granting No Objection Certificates (NOCs).

- **Government's Clarification:**

- University asserts the trials are strictly experimental; no endorsement for commercial release has been made.

Analysis and Implications:

1. Biotechnology and Food Security:

- GM crops offer potential for higher yields, pest resistance, and input efficiency.
- Insect-resistant and herbicide-tolerant crops can reduce agrochemical use, but ecological impacts remain debated.

2. Regulatory Oversight and Legal Ambiguity:

- India lacks a comprehensive biosafety law; approvals rely on the GEAC, under the Ministry of Environment, Forest and Climate Change.
- Glyphosate use is restricted or banned in several states, yet its use is being tested in field trials.

3. State vs Centre:

- Agriculture is a State subject, yet biotechnology approvals rest with the Centre.
- This creates friction—e.g., states may oppose GM crop trials that the Centre permits, raising questions of federal coordination.

4. Public Trust and Scientific Transparency:

- Civil society groups demand greater accountability, especially concerning health risks, ecotoxicology, and seed sovereignty.
- GM trials without informed public debate can erode trust in scientific institutions and regulators.

5. Precedents and Policy Stand:

- Bt cotton remains India's only commercialised GM crop.
- Attempts to commercialise Bt brinjal and GM mustard have been stalled due to protests and legal cases.

Way Forward:

- **Strengthen Regulatory Framework:** Develop a biosafety law to ensure transparency, accountability, and participatory decision-making.
- **Ensure Informed Consent:** Field trials must be preceded by community consultations, especially when local bans (like on glyphosate) exist.
- **Promote Alternatives:** Parallel investment in agroecology and non-GM innovations must continue to avoid over-reliance on proprietary GM technologies.
- **Balance Innovation with Precaution:** Scientific research is essential, but so is the precautionary principle in public health and biodiversity concerns.

Conclusion:

The GM maize field trials in Punjab reflect the ongoing tension between technological innovation and public accountability in Indian agriculture. While GM crops may promise efficiency and yield benefits, ethical, ecological, and regulatory considerations must be harmonized through transparent and inclusive policymaking.

UPSC Prelims Practice Question

Ques: Which of the following is the apex regulatory body for approving field trials of genetically modified (GM) crops in India?

- A. Indian Council of Agricultural Research (ICAR)
- B. Ministry of Agriculture and Farmers' Welfare
- C. Genetic Engineering Appraisal Committee (GEAC)
- D. National Biodiversity Authority (NBA)

Ans: C)

Page 06 : GS 1: Indian Society

The latest Periodic Labour Force Survey (PLFS) data (June 2025) reveals a decline in female labour force participation (LFPR) in both rural and urban areas, accompanied by stagnant unemployment at 5.6% for people aged 15 and above. The data reflects seasonal and structural factors influencing India's labour market, especially for women.

Govt. data show fall in women at work in rural, urban areas

Govt. says this could be due to seasonal agricultural patterns and intense summer heat limiting outdoor work; unemployment rate stagnant at 5.6%

The Hindu Bureau
NEW DELHI

The unemployment rate among people aged 15 and above has remained the same at 5.6% in June and May, according to the Periodic Labour Force Survey released by the Statistics and Programme Implementation Ministry here on Tuesday.

Women's participation in labour force, both in urban and rural areas, decreased by one percentage point in June compared with May. The government said there is a "marginal decline" in the labour force participation rate (LFPR) among men too.

The Centre said the marginal decline in LFPR and worker population ratio (WPR) in June was largely influenced by seasonal agricultural patterns, intense summer heat limiting outdoor physical work, and a shift of some unpaid helpers, particularly from higher-income rural households, towards domestic chores. It said the share of rural women workers in agriculture dropped to



For females of all age groups in both rural and urban areas, the LFPR was 24.5% in June and it was 25.5% in May. AP

69.8% in June from 70.2% in May, indicating the reduced need for agricultural engagement among women, "perhaps due to a decline in rural inflation".

The Ministry said the LFPR in current weekly status among all persons aged 15 and above was 54.2% during June compared with 54.8% during May. "The LFPR in rural areas was 56.1% and LFPR in urban areas was 50.4% during June for persons of the same age group," the Ministry said.

The LFPR for males aged 15 and above in rural and urban areas were 78.1% and 75%, respectively in June, and it marked a marginal decline from the

corresponding LFPR estimates of 78.3% and 75.1% for rural and urban areas, respectively in May.

For females, the LFPR for those aged 15 and above in rural areas was 35.2% in June. This was 36.9% in May and 38.2% in April. In urban areas, the LFPR was 25% in June. It was 25.3% in May. For all age groups in both rural and urban areas, the LFPR was 24.5% in June compared with 25.5% in May.

The unemployment rate for female and male of all ages above 15 was 5.6%. While for males, the rate remained same as of May, for females there was a decrease by 0.1 percentage point.

Key Highlights:

- Overall LFPR (15+ years):

- June 2025: 54.2%
- May 2025: 54.8%
- **Female LFPR (15+ years):**
 - Rural: Dropped from 36.9% (May)→35.2% (June)
 - Urban: Dropped from 25.3% (May)→25% (June)
 - All age groups (rural + urban): Dropped from 25.5% (May)→24.5% (June)
- **Male LFPR (15+ years):**
 - Rural: 78.1% (down from 78.3%)
 - Urban: 75% (down from 75.1%)
- **Unemployment Rate:**
 - Overall: 5.6% (unchanged)
 - For females: Decreased marginally by 0.1 percentage point

Analysis and Implications:

1. Seasonal and Climatic Factors:

- The government attributed the drop to:
 - Seasonal fluctuations in agriculture
 - Extreme summer heat, restricting women from outdoor work
 - Reduced inflation pressure, leading some rural women to return to domestic responsibilities

2. Structural Gender Gap in Workforce:

- India's female LFPR remains significantly lower than global averages (which are typically 45–50%+).
- The rural female workforce is still heavily agriculture-dependent (69.8%), indicating limited diversification.

3. Unpaid Work and Informal Sector Blind Spot:

- Many women shift between unpaid household roles and informal labour, which is often underreported.
- This masks true female economic contribution, especially in family-based or seasonal enterprises.

4. Implications for Demographic Dividend:

- With women comprising nearly half of India's population, such low LFPR limits the potential of inclusive growth.
- Female participation is critical for achieving goals under SDG-5 (Gender Equality) and SDG-8 (Decent Work & Economic Growth).

5. Urban Female Participation:

- Despite urbanisation, urban female LFPR remains stagnant, indicating barriers like:
 - Lack of safe public transport
 - Rigid working hours
 - Limited childcare facilities
 - Gendered social norms

Way Forward:

- **Gender-sensitive Employment Programs:**
 - Expand MGNREGA-like schemes with women-specific quotas during lean agricultural periods.
- **Skill Development & Digital Literacy:**
 - Promote flexible, home-based work via skilling in digital and service sectors.
- **Policy Interventions:**
 - Enforce gender audits in employment data and promote incentives for women's hiring across sectors.
- **Social Infrastructure Investment:**
 - Improve childcare, sanitation, safety, and transport in both rural and urban areas.
- **Inclusive Labour Reforms:**
 - Tailor labour codes and ESIC schemes to better accommodate female informal workers.

Conclusion:

The continued decline in female labour participation is both a socio-economic and policy concern. Beyond seasonal or climatic explanations, the issue reflects deep-rooted gendered constraints in India's labour market. Ensuring women's equal participation in economic activities is vital not only for social justice but also for India's long-term growth trajectory.

UPSC Mains Practice Question

Ques: The declining labour force participation rate among women reflects deep-rooted structural inequalities in Indian society. Discuss with reference to recent data from the Periodic Labour Force Survey.

Page 10:GS 3 : Indian Economy&Environment

Global shipping, a major contributor to greenhouse gas (GHG) emissions, is aiming for net-zero emissions by 2040–2050. This decarbonisation transition opens up economic and strategic opportunities for India in green fuel production, shipping, and shipbuilding.

How is global shipping trying to decarbonise?

What is the goal? What are the green fuels that may be used? Why is it difficult to implement changes in shipping? What does India need to do? Why is the government encouraging green ammonia production in India? What are the challenges?

EXPLAINER

M. Kalyanaraman
Kalyan Mangalapalli

The story so far:

Global shipping is on course towards decarbonisation by 2040-50. This represents a huge opportunity for India. Merchant ships largely use Very Low Sulphur Fuel Oil (VLSFO), diesel, and methane gas stored in liquid form as fuel. LNG-powered engines with their higher efficiency of some five percentage points are likely to be a transition fuel before shipping moves to green fuels such as green ammonia, green or e-methanol and biofuels by 2040 and net zero thereon.

How are green fuels produced?

Green hydrogen is made from the electrolysis of water using renewable power. Shipping will not use hydrogen directly because of issues with storage and transportation of hydrogen, a highly volatile fuel. Green ammonia, made from green hydrogen and nitrogen, is more stable. The government is also encouraging green ammonia production in India since it can substitute LNG imports in making fertilizers. Green methanol is made from green hydrogen and carbon dioxide obtained from industrial sources.

What are the preferred fuels?

Shipping, however, is generally a conservative industry. New technology adoption is relatively slow. Ammonia engines are a novelty, so shipping is going first for green methanol, which emits some 10% of carbon dioxide, and later green ammonia, which emits no greenhouse gas. However, ammonia use requires extensive processes onboard. Besides a storage tank and tweaks to the engine and fuel handling system, green methanol is almost a drop-in replacement for VLSFO and is stored as liquid in ambient temperature unlike green



For cleaner seas: Cargo shipping containers in Chennai on June 30. JOTHI RAMALINGAM, B

ammonia or even LNG.

Already, more than 360 ships capable of operating on methanol are either in service or in order. Major container shipping companies such as Maersk, CMA, CGM and Evergreen are backing methanol. A 100% sustainable e-methanol as bunker fuel costs \$1,950 per tonne (of VLSFO equivalent) in February in Singapore, while VLSFO averaged at \$560 per tonne. This pricing discrepancy is primarily caused by the present price of renewable electricity, with every tonne of green e-methanol using 10-11 MWh of power, and the heavy upfront capital cost for electrolyser facilities. Estimates suggest that demand for green methanol would surpass 14 million tonnes by 2028, whereas the projected supply is merely in the order of 11 million tonnes, creating additional price pressures.

What is Indian shipping's decarbonisation plans?

India has committed to decarbonising its domestic shipping. Plans have been made

for supporting domestic container ships using green fuels as well as creating green fuel bunkering points such as at the Tuticorin V.O. Chidambaranar port and Kandla. The government is looking at producing and supplying green fuels to Singapore, which is a fuelling station accounting for nearly one-fourth of all global ship fuelling. Singapore has committed to being a green fuels supplier and would require therefore tens of millions of tonnes of green fuels. Given that India has the land and expertise for solar power, it can aspire to be a major supplier of green fuels to global shipping.

How can India do it?

Making a marine green fuels production hub has some challenges. Solar panels and electrolysers to make green hydrogen need to be imported. India's solar energy revolution, however, is a model of how sovereign guarantees and policy strategic frameworks can drive the adoption of green fuels. From 2014 to 2025, India's solar capacity grew from 2.82 GW to 105

GW. This achievement was made through the convergence of sovereign guarantees, off-take assurance, and strengthened supply chain support. Sovereign guarantees have emerged as a powerful de-risking mechanism for green methanol investments that can considerably reduce prices. These government-backed assurances can fundamentally transform project economics by enabling access to international capital markets at significantly lower interest rates.

Innovative financial instruments are needed for an at to scale green methanol rollout. Production-linked incentive (PLI) schemes for electrolysers can relieve supply chain bottlenecks by territorialising value chains and lessening transportation costs of raw materials. Carbon capture, utilisation, and storage (CCUS) incentives are also essential, as they increase the feasibility of the production of green methanol from sequestered CO₂. Further, the government's aggressive push in creating 1.5 GW of local electrolyser manufacturing capacity and growing industrial CO₂ sources positions India strategically to develop integrated green fuel hubs. Multilateral development banks offer financing at rates as low as 4%, as opposed to 11-12% by domestic lenders, and they can be leveraged.

How can green fuels help restart Indian shipowning and shipbuilding?

The government's move to inject demand-side support for shipbuilders, along with incentives for foreign cooperation, should spur economies of scale and attract global shipbuilders to the country. Partnerships with overseas shipbuilders from South Korea and Japan are being pursued to support India's shipbuilding strength. The strategy is to support new builds and retrofit current ships for green fuel compatibility. India has pledged \$10 billion to support the purchase of over 110 ships. Government can provide incentives so 10-20% of these are green fuel-capable, built in Indian shipyards, and are Indian-flagged.

THE GIST

Shipping, however, is generally a conservative industry. New technology adoption is relatively slow.

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Why Decarbonisation of Shipping Matters:

- Shipping contributes nearly 3% of global carbon emissions.
- As per the IMO (International Maritime Organization), global shipping must transition away from fossil fuels to achieve climate goals under the Paris Agreement.

Green Fuels for Shipping:

Fuel Type	Source/Process	Pros	Challenges
Green Hydrogen	Electrolysis using renewable energy	Clean, zero emissions	Difficult to store/transport
Green Ammonia	Green H ₂ + Nitrogen	Stable, zero GHG emissions	Toxic, requires new engine systems
Green Methanol	Green H ₂ + captured CO ₂	Drop-in fuel, easier storage	Costly, partial CO ₂ emissions
Biofuels	Biomass sources	Renewable	Limited supply, sustainability concerns

Why Methanol is the Current Front-Runner:

- More than 360 methanol-capable ships already in operation or on order.
- Easier storage and engine compatibility compared to ammonia or hydrogen.
- Maersk, CMA CGM, and other major players are investing in green methanol.

Challenges in Global Adoption:

- 1. High Costs:**
 - Green methanol cost: ~\$1950/tonne (vs. \$560 for VLSFO).
 - Due to high renewable electricity and electrolyser costs.
- 2. Supply Gap:**
 - Projected demand by 2028: 14 million tonnes.
 - Estimated supply: Only 11 million tonnes.
- 3. Infrastructure Overhaul:**
 - Need for new bunkering infrastructure, retrofitting ships, and safety protocols.
- 4. Slow Industry Transition:**
 - Shipping is a conservative industry; adoption of new technology is gradual.

India's Decarbonisation Plans for Shipping:

- **Domestic Strategy:**
 - Green fuel-enabled ships planned.
 - Green bunkering hubs at Tuticorin (VOC Port) and Kandla.
- **Global Export Strategy:**
 - India aims to export green ammonia and methanol to global hubs like Singapore, which fuels 25% of world shipping.
- **Government Investment:**

- \$10 billion pledged for over 110 Indian ships.
- Incentives for green fuel-capable and Indian-flagged vessels.

Why Green Ammonia Production is Promoted in India:

- Substitute for LNG imports in fertilizer production.
- Supports energy security and trade diversification.
- Uses India's solar potential and land availability.

Strategic Enablers for India's Green Fuel Push:

1. Solar Power Revolution:

- Capacity rose from 2.82 GW (2014) to 105 GW (2025).
- Proves feasibility of large-scale renewable projects.

2. Financial Support:

- Sovereign guarantees, production-linked incentives (PLI), and multilateral funding (4% vs. 11–12% domestic rates).

3. Electrolyser Manufacturing Push:

- Targeting 1.5 GW local capacity to reduce import dependency.

4. Carbon Capture Infrastructure:

- Industrial CO₂ can be reused for methanol, reducing emissions.

Opportunities for India:

- **Green Fuel Hub:** Export to Singapore, East Asia, EU.
- **Shipbuilding Growth:** Retrofit and new-build green ships.
- **Foreign Collaboration:** Tie-ups with Japan and South Korea for technical support.
- **Job Creation:** Skilled employment in clean energy and maritime sectors.

Conclusion:

Decarbonising global shipping is not just an environmental imperative—it is a strategic economic opportunity. For India, with its renewable energy potential, manufacturing base, and maritime ambitions, becoming a hub for green fuels and green shipping could significantly boost its energy transition, export capabilities, and climate diplomacy.

UPSC Mains Practice Question

Ques: discuss the challenges and opportunities associated with the decarbonisation of global shipping. How can India leverage its renewable energy potential to become a global hub for green marine fuels? (250 words)

Page : 10 Editorial Analysis

The need to protect India's linguistic secularism

According to the 2011 Census, India has 121 languages and 270 mother tongues

LETTER & SPIRIT

C.B.P. Srivastava

India's diversity in religion and language is one of the primary factors which protects the secular character of the nation, ensuring its unity and integrity. But while religion and language are the two most crucial aspects of any culture, these are also the predominant cross-cultural barriers. This is clearly visible in recent communal tensions and the violence in Maharashtra.

Secularism in India is different from what the West practises. When the concept originated in England in the mid-19th century, it was explained that there should be complete separation between the state and religion without criticising any of the prevalent religious beliefs. India too accepted this notion and incorporated the concept in the

Constitution in the form of rights to religious freedom. These rights are based on the principles of religious tolerance and equality. Every person has the equal right to freedom of conscience and to profess, practise and propagate his religion. This makes India truly secular as the state does not have its own religion. However, the unique aspect of Indian secularism is not only related to religion but it is also concerned with language. Indian secularism is neither pro-religion or language, nor against. Yet it is not neutral either. It is incorporated in the Constitution as a state policy and it empowers the state to take steps against communalism, be it religious or linguistic.

Official vs national language

This is the reason why we do not and cannot have a national language. In order to protect linguistic diversity, the Eighth Schedule of the Constitution includes 22 languages. As India is a unitary

federation, that is, a Union of States, Article 343 enshrines that the official language of the Union shall be Hindi in Devanagari script. The States are free to choose their own official language. This arrangement is due to the fact that in India, States are culturally integrated and no State is permitted to go out of it in the name of distinct language or culture.

Article 29 incorporates that any section of citizens of India including minority groups shall have the right to protect their language, script or culture, and that language cannot be the ground for discrimination. According to the 2011 Census, India has 121 languages and 270 mother tongues. About 96.71% population of the country have one of the 22 scheduled languages as their mother tongue. Finally, the Census says that the 121 languages are presented in two parts, languages included in the Eighth Schedule, and languages not included (99) in the Eighth Schedule.

Respecting diversity

Such diversity needs to be protected; each and every language irrespective of region or State must be shown respect. This is the only way to protect India's linguistic secularism. Many southern and northeastern States have resisted the imposition of Hindi, citing fears of cultural domination. Dravidian movements in Tamil Nadu historically opposed Hindi imposition, favouring Tamil and English. Maharashtra, however, has emerged as the most sensitive State so far as the language debate is concerned. The recent violence against the non-Marathi population is the manifestation of identity politics. Definitely, it is not to protect its cultural identity. Had it been related to the protection of culture, the "protectors" of Marathi language would have considered that 'tolerance' and 'liberality' are the two pillars of India's unity in diversity.

India has always accepted different religions, ideas, lifestyles, food habits etc., mainly because of its liberal and tolerant attitude. In a globalising world, a conservative leaning towards religion or language will lead to a fragmentation of society and tear apart the secular fabric.

Political parties have the onus to ensure the protection of India's diversity which has been well shielded by the Constitution.

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THE GIST

While religion and language are the two most crucial aspects of any culture, these are also the predominant cross-cultural barriers.

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Paper 02 Polity and Governance

UPSC Mains Practice Question: India's linguistic diversity is both a pillar of its secularism and a challenge to national integration." Discuss in the context of constitutional provisions and recent developments.(250 words)

Context :

India's rich linguistic and religious diversity forms the bedrock of its secular fabric. While secularism is often associated only with religion, this article highlights the need to also uphold linguistic secularism — i.e., the constitutional respect for linguistic plurality as a safeguard of national unity.

Key Constitutional Provisions on Linguistic Diversity:

- Article 343** – Declares Hindi in Devanagari script as the official language of the Union; however, it allows continued use of English and freedom for states to choose their own official languages.
- Eighth Schedule** – Recognizes 22 scheduled languages. These languages are protected and promoted by the state.

3. **Article 29** – Grants every section of citizens the right to conserve their distinct language, script or culture, irrespective of minority or majority status.

Current Linguistic Landscape (2011 Census):

- 121 languages and 270 mother tongues recorded.
- 96.71% of the population speaks one of the 22 scheduled languages.
- Language groups outside the Eighth Schedule still constitute a significant part of the cultural mosaic.

Core Argument: Linguistic Secularism as Constitutional Value

- Indian secularism differs from Western secularism — it is not only religiously neutral, but also linguistically inclusive.
- The Constitution does not mandate any national language to avoid cultural majoritarianism.
- States' freedom to choose their official languages is crucial to preserving federal diversity.

Challenges and Concerns:

1. Imposition of Hindi:

- Resistance from Southern and Northeastern States (e.g., Tamil Nadu's anti-Hindi agitation).
- Fear of cultural homogenisation and marginalisation of regional identities.

2. Language-based Violence:

- Maharashtra has seen tensions and attacks over non-Marathi speakers, reflecting linguistic chauvinism.
- Such identity politics contradict the tolerant ethos of the Constitution.

3. Lack of Promotion for Non-Scheduled Languages:

- The 99 non-scheduled languages receive less policy support and visibility, risking linguistic extinction.

Significance of Linguistic Secularism:

- Protects cultural pluralism and inter-state harmony.
- Reinforces India's "unity in diversity" — a key constitutional and societal principle.
- Prevents fragmentation and majoritarian dominance in a multilingual society.

Way Forward:**1. Respect Regional Languages:**

- Promote all Indian languages equally, not just those in the Eighth Schedule.

2. Avoid Linguistic Majoritarianism:

- Stop viewing Hindi or any other language as a cultural standard for national integration.

3. Encourage Multilingual Education:

- National Education Policy should promote mother tongue-based learning and linguistic coexistence.

4. Political Maturity:

- Parties must eschew language-based identity politics and work to uphold constitutional values.

5. Cultural Dialogue and Awareness:

- Foster linguistic empathy and exchange among regions to reduce biases and prejudices.

Conclusion:

India's linguistic pluralism is not a weakness but a constitutional strength. Protecting linguistic secularism is essential to preserve national unity, social harmony, and democratic inclusivity. In a rapidly globalising and digitising world, respect for all languages and cultural identities is the only way forward for a truly secular and diverse India.