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Daily News Analysis

The Hindu Important News Articles & Editorial For UPSC CSE

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Edition : International Table of Contents

Page 06 : Prelims Exam

The Sahitya Akademi, India's National Academy of Letters, has officially announced its prestigious annual awards for 2025. Covering 24 languages, the awards recognize outstanding literary contributions across various genres including poetry, novels, and memoirs. This year's announcement is particularly noteworthy as it followed a brief hiatus due to administrative restructuring directives from the Union Ministry of Culture.

Sahitya Akademi announces awards for 2025 in 24 languages

Eight books of poetry, four novels, six books of short stories, two essays, one literary criticism work, an autobiography, and two memoirs win

The Hindu Bureau
NEW DELHI

The Sahitya Akademi on Monday announced its awards for 2025 in the 24 languages recognised by it, nearly three months after the process was abruptly put on hold following directives from the Union Culture Ministry.

Among the winners are former diplomat Navtej Sarna, awarded in the English language category for his novel *Crimson Spring*; Hindi writer Mamta Kalia for her memoir *Jeete Jee Allahabad*; and Tamil author Sa Tamilselvan for his work *Thamizh Sirukathaiyin Thadangal* in the literary criticism genre. "Eight books of poetry, four novels, six books of short stories, two essays, one literary criticism, one autobiography, and two memoirs have won the Sahitya Akademi Awards 2025," the Akademi said in a statement.

Others named in the 2025 awards are Prasun Bandyopadhyay for *Shrestha Kabita* in Bengali; Yogesh Vaidya for *Bhattkhadaki* in Gujarati; Amresh Nugadoni for *Dada Seerisu Tande* in Kannada; N. Prabhakaran for *Maayamanushyar* in Malayalam; Raju Baviskar for *Kalyanilya Resha* in Marathi; Nandini Sidha Reddy for *Animesha* in Telugu; Jinder for *Safety Kit* in Punjabi; and Jitender Kumar Soni for *Bharkhama* in Rajasthani. The awardees will receive a casket containing an engraved copper plaque, a shawl, and an amount of ₹1 lakh at a ceremony on March 31.

The Akademi had cancelled its press conference for the announcement on December 18 last, after a last minute directive from the Union Culture Ministry cited a need for the "restructuring" of the awards.

Former diplomat Navtej Sarna's *Crimson Spring* has won the award in the English language category. FILE PHOTO

Key Highlights of the 2025 Awards

The 2025 awards reflect the diversity of Indian literature, spanning traditional and contemporary styles.

Total Languages: 24 (22 Scheduled languages + English and Rajasthani).

Genre Breakdown: 8 Poetry books, 4 Novels, 6 Short Stories, 2 Essays, 1 Literary Criticism, 1 Autobiography, and 2 Memoirs.

Major Winners:

English: Navtej Sarna for his novel Crimson Spring.

Hindi: Mamta Kalia for her memoir Jeete Jee Allahabad.

Tamil: Sa Tamilselvan for Thamizh Sirukathaiyin Thadangal (Literary Criticism).

Bengali: Prasun Bandyopadhyay for Shrestha Kabita (Poetry).

Telugu: Nandini Sidha Reddy for Animesha (Poetry).

Award Prize: A casket containing an engraved copper plaque, a shawl, and a cash prize of ₹1 lakh.

Static Section: About Sahitya Akademi

For UPSC aspirants, understanding the institutional framework of the Akademi is essential.

1. Establishment and Nodal Ministry

Founded: March 12, 1954.

Status: An autonomous organization registered under the Societies Registration Act, 1860.

Nodal Ministry: Ministry of Culture, Government of India.

Headquarters: Rabindra Bhavan, New Delhi.

2. Recognized Languages

While the 8th Schedule of the Indian Constitution recognizes 22 languages, the Sahitya Akademi recognizes 24 languages:

22 Scheduled Languages

English

Rajasthani

3. Selection Criteria

The author must be an **Indian National**.

The book must be an "outstanding contribution" to the language/literature.

The award is the second-highest literary honor in India, following the Jnanpith Award.

4. Other Major Awards by the Akademi

Sahitya Akademi Prize for Translation: For best translations.

Bhasha Samman: For contribution to classical/medieval literature or unrecognized languages.

Yuva Puraskar: For writers aged 35 and below.

Bal Sahitya Puraskar: For excellence in children's literature.

Conclusion

The Sahitya Akademi Awards serve as a barometer for the evolving intellectual and cultural identity of India. By recognizing 24 different languages, the Akademi fulfills its mandate of "promoting Indian letters" and fostering national integration through literature. For the UPSC Prelims, candidates should specifically focus on the inclusion of English and Rajasthani (which are not in the 8th Schedule) and the institutional autonomy of the Akademi.

UPSC Prelims Exam Practice Question

Ques: Consider the following languages:

1. English

2. Rajasthani

3. Sindhi

4. Kashmiri

Which of the above are recognized by the Sahitya Akademi but are NOT included in the Eighth Schedule of the Constitution?

(a) 1 and 2 only

(b) 2 only

(c) 1 only

(d) 1, 2 and 3

Ans: a)

Page 06 : GS III : Science & Technology / Prelims Exam

The decision by the Government of India to install Quantum Teaching Laboratories in 23 academic institutions marks a pivotal step in the "lab-to-classroom" transition. Announced during a high-level review of the National Quantum Mission (NQM), this move aims to democratize access to quantum hardware and experimental setups, ensuring that India's ambitious targets for 2030–31 are backed by a "quantum-ready" workforce.

News Analysis: Scaling India's Quantum Ecosystem

Quantum Labs: Building the Human Capital

- **Infrastructure Spread:** 23 institutions have been cleared for immediate installation, with another 100 proposals under evaluation. This suggests a tiered expansion strategy beyond just the IITs/IISc.
- **Purpose:** These labs are designed to move beyond theoretical physics. They provide hands-on training in quantum state manipulation, photonics, and cryogenic systems—skills essential for maintaining future quantum computers.

National Quantum Mission (NQM) Progress

- **Targets:** The mission is working toward building intermediate-scale quantum computers with **50–1,000 physical qubits** by 2031.
- **Thematic Hubs (T-Hubs):** NQM operates via four specialized hubs:
  - **Quantum Computing:** Focused on superconducting and photonic platforms.
  - **Quantum Communication:** Developing satellite-based secure links over 2,000 km.
  - **Quantum Sensing & Metrology:** Creating high-precision magnetometers and atomic clocks.
  - **Quantum Materials & Devices:** Investigating superconductors and topological materials.

India International Science Festival (IISF) 2026

- **Venue:** Proposed to be held in **Pune**, a major education and IT hub.
- **Strategic Intent:** IISF serves as a platform for public engagement and inter-ministerial coordination, aligning scientific output with industrial needs.

Core Quantum Concepts

Centre clears 'quantum lab' installation at 23 institutions

Jacob Koshy
NEW DELHI

Twenty-three academic institutions across India have been approved for setting up quantum teaching laboratories under the National Quantum Mission (NQM), with another 100 proposals currently being evaluated, according to details from the joint monthly meeting of Secretaries of the Science Ministries held in New Delhi on Monday.

The NQM, approved with a ₹6003.65 crore budget (2023-2031), aims to develop 50-1,000 qubit quantum computers, satellite-based secure communication, and high-precision quantum sensors/materials.

The meeting, chaired by the Minister of State (Independent Charge) for Science & Technology, Dr. Jitendra Singh, also reviewed preparations for the India International Science Festival 2026, with Pune identified as the proposed venue. The Department of Biotechnology said it had begun work on the event's framework, though a final programme and schedule are yet to be decided and will be discussed with stakeholder agencies in coming weeks.

Basic Principles of Quantum Technology

Superposition: The ability of a quantum system (qubit) to exist in multiple states simultaneously, unlike a classical bit.

Entanglement: A phenomenon where two particles become so linked that the state of one instantly influences the state of the other, regardless of distance.

Quantum Key Distribution (QKD): A secure communication method that uses quantum mechanics to encrypt data, making it theoretically unhackable as any attempt at eavesdropping alters the quantum state.

Significance for India

Cybersecurity: Transitioning to Post-Quantum Cryptography (PQC) to protect national data from "harvest now, decrypt later" threats.

Healthcare: Accelerating drug discovery through molecular simulation that classical supercomputers cannot handle.

Disaster Management: High-precision quantum sensors for predicting seismic activity and gravitational anomalies.

Conclusion

The installation of these labs signifies that India is no longer just a consumer of technology but an active architect of the "Second Quantum Revolution."

UPSC Prelims Exam Practice Question

Ques: With reference to the National Quantum Mission (NQM), consider the following statements:

1. It aims to develop quantum computers with 50–1,000 physical qubits by 2031.

2. The mission operates through four Thematic Hubs focusing on different aspects of quantum technology.

3. The mission is implemented by the Ministry of Electronics and Information Technology (MeitY).

Which of the statements given above are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 only

(d) 1, 2 and 3

Ans: (a)

UPSC Mains Exam Practice Question

Ques: Discuss the objectives and institutional framework of the National Quantum Mission (NQM). How can it strengthen India's technological sovereignty? **(150 Words)**

Page 07 : GS III : Environment / Prelims Exam

The ongoing conflict in West Asia highlights a grim reality of modern warfare: the environmental and climatic "collateral damage" that persists long after the guns fall silent. Beyond the immediate humanitarian crisis, military operations—ranging from high-frequency sorties to the destruction of energy infrastructure—are contributing to a massive spike in global greenhouse gas (GHG) emissions and localized ecological devastation.

News Analysis: The Environmental Cost of Conflict

1. Direct Carbon Footprint of Military Operations

Aviation and Naval Fuel: The deployment of stealth bombers, fighter jets, and "floating cities" (aircraft carriers) requires massive amounts of jet fuel and diesel. Continuous sorties over long distances (e.g., from the Gulf to Iran) result in concentrated atmospheric heating.

Quantifying the Damage: Gaza Conflict: Estimated 33 million tonnes of CO_2 equivalent (comparable to the annual emissions of Jordan).

Ukraine War: Estimated 300 million tonnes of additional emissions, equivalent to the entire annual output of France.

2. Destruction of Energy Infrastructure

Toxic Plumes: Strikes on oil refineries and storage facilities (like those in Fujairah, UAE) release acrid smoke and toxic chemicals.

Strategic Chokepoints: The Strait of Hormuz serves as a primary artery for global oil. Targeting tankers here not only disrupts the economy but causes catastrophic water pollution and long-term marine ecosystem damage.

3. The Economic-Climate Paradox

Negative Impact: Rising energy prices put pressure on policymakers to prioritize "affordability over climate action," often leading to a resurgence in coal or subsidized fossil fuels.

Positive Impact (The "Glass Half-Full"): High fossil fuel prices act as a catalyst for decarbonization. Similar to the surge in heat pump adoption after the Russia-Ukraine war, this conflict may accelerate the transition to electrification and renewables to ensure energy security.

Static Section:

Environmental Impact of War (Ecocide)

Plumes of smoke rise from an oil facility in Fujairah, the UAE, on Saturday. AP

Environment: yet another casualty of the West Asia war

Agence France-Presse

From the jet fuel used in bombing raids to acrid smoke from burning oil depots, the conflict in West Asia is inflicting a significant toll on nature and the climate.

U.S. and Israeli aircraft use a considerable amount of fuel reaching the Gulf and flying sorties over Iran, said Benjamin Neimark at Queen Mary University of London.

Deploying stealth bombers and fighter jets around the clock adds a significant amount of planet-warming greenhouse gas emissions into the atmosphere.

"The U.S. Navy also has a significant fleet which will be operating remotely for some time," Neimark said. "That is a significant number of U.S. troops that need to be fed, housed, and working around the clock. These floating cities all need energy."

This is provided in part by diesel generators, even if most larger aircraft carriers are nuclear powered, an energy source that produces far less emissions than fossil fuels. But many experts take into account everything from the manufacture of weapons and explosives to post-war reconstruction efforts when

The Gaza conflict generated some 33 million tonnes of carbon dioxide equivalent, an amount comparable to 7.6 million petrol-powered cars

estimating the total environmental impact of conflict.

According to one study published in the peer-reviewed journal *One Earth*, the Gaza conflict generated some 33 million tonnes of carbon dioxide equivalent, an amount comparable to 7.6 million petrol-powered cars or the annual emissions of a small country like Jordan.

By one estimate, the war in Ukraine has caused more than 300 million tonnes of additional emissions, equivalent to France's annual output.

This estimate, by the Initiative on GHG Accounting of War, takes into account military operations and reconstruction efforts, forest fires, and longer flight routes.

This conflict is playing out on the Strait of Hormuz, a crucial artery for the passage of oil and gas supplies to global markets that depend on energy from the Gulf.

Ships transporting these highly flammable fuels through the narrow waterway, along with the region's oil and gas refineries and storage facilities, were "all a target" in this war, said Neimark.

"We have already seen a significant amount of refineries targeted. These toxic flames are deadly and have a severe climate cost."

Since erupting on February 28, the conflict has sent oil prices soaring and focused fresh attention on the global transition to cleaner, more climate-friendly forms of energy.

Andreas Rudinger, from the Institute for Sustainable Development and International Relations, said the economic knock-on effects of the war had put policy makers "under pressure to reduce the burden on prices over climate action".

But there's also a "glass half-full perspective", Rudinger said: "From a purely economic standpoint... rising fossil fuel prices make decarbonisation and electrification solutions more attractive," he said.

He pointed to the rise in popularity of heat pumps in the aftermath of Russia's invasion of Ukraine, which caused energy prices in Europe to rise sharply.

Apart from climate concerns, strikes on energy infrastructure, oil tankers and military targets pollute the surrounding air and water and spread highly toxic chemicals far and wide, experts say.

Definition: Though not yet a formally recognized international crime, Ecocide refers to the widespread, long-term, and severe damage to the environment caused during war.

Atmospheric Impact: The release of Particulate Matter (PM2.5 and PM10), Nitrogen Oxides (NOx), and Sulfur Dioxide (SO2) from explosives and burning oil.

Carbon Accounting of War

Most international climate agreements (like the Paris Agreement) do not strictly mandate the reporting of military emissions. This "military loophole" often hides the true scale of a nation's carbon footprint.

Strategic Geography: Strait of Hormuz

Location: Between the Persian Gulf and the Gulf of Oman.

Significance: It is the world's most important oil chokepoint. About one-fifth of the world's total oil consumption passes through it daily.

International Frameworks

ENMOD Convention (1977): The "Environmental Modification Convention" prohibits the military use of environmental modification techniques having widespread, long-lasting, or severe effects.

Geneva Conventions: Protocol I (1977) includes articles protecting the natural environment against "widespread, long-term and severe damage."

Conclusion

The West Asia conflict serves as a reminder that climate security and regional security are inseparable. While the immediate focus remains on geopolitics and oil prices, the "carbon debt" created by these wars will hinder global efforts to meet the 1.5°C pathway. For India, which relies heavily on the West Asian energy corridor, this underscores the urgency of diversifying toward a Green Hydrogen and Renewable Energy-led economy to mitigate both economic and environmental volatility.

UPSC Prelims Exam Practice Question

Ques: The term "Ecocide" refers to:

(a) The extinction of species due to natural causes

(b) The intentional destruction of ecosystems during armed conflict

(c) Pollution caused by industrial development

(d) Climate change due to greenhouse gases

Ans: B)

UPSC Mains Exam Practice Question

Ques: "Modern warfare has significant environmental consequences that extend beyond immediate destruction." Discuss with examples. **(150 Words)**

Page 10 : GS III : Indian Economy and Environment / Prelims Exam

The transition from Liquefied Petroleum Gas (LPG) to electric cooking (e-cooking) is emerging as a strategic necessity for India. With an annual import bill of $26.4 billion for cooking gas and significant geopolitical risks associated with the Strait of Hormuz, electrifying the Indian kitchen is no longer just an environmental goal but a matter of energy sovereignty and economic stability.

Why India must electrify its kitchens

Is electric cooking cheaper and more efficient than LPG for Indian households? Can induction cooktops handle the realities of everyday Indian cooking? Can smart technologies help flatten electricity peaks? What policy changes are needed for India to shift from LPG to electric kitchens?

EXPLAINER

Kalyan Mangalapalli

The story so far:

India spends $26.4 billion a year importing cooking gas, most of it shipped through the Strait of Hormuz. It has 332 million LPG connections, yet 37% of households still burn firewood and dung. The arithmetic has shifted: cooking with electricity is now cheaper than cooking with unsubsidised LPG. But moving hundreds of millions of kitchens from flame to wire raises a chain of questions about cost, grid stress, and who pays when demand spikes.

Why is gas-based clean cooking hitting a wall?

Domestic LPG connections grew from 150 million in 2015 to 332 million by 2025, but India imports 60% of its LPG and 50% of its natural gas. The Institute for Energy Economics and Financial Analysis (IEEFA) estimates that the combined import bill reached $26.4 billion in FY24-25 – a 50% jump in six years.

Every West Asian escalation sends a price shock straight into Indian kitchens. Gas-based clean cooking has hit an affordability ceiling.

Can electricity beat gas on cost, efficiency, and everyday cooking?

An IEEFA study from October 2025 found that electric cooking is 37% cheaper than non-subsidised LPG and 14% cheaper than piped natural gas for a family of four in Delhi – even without any electricity subsidy. Only the heavily subsidised Prime Minister Ujjwala Yojana (PMUY) pricing undercuts e-cooking, and that subsidy costs the exchequer thousands of crores each year.

The efficiency gap is equally stark. Induction cooktops transfer about 85% of their energy to the vessel, while an LPG burner manages roughly 40%. Electric pressure cookers, tested across the MECS programme's multi-country cooking diaries, use less energy than any other device assessed.

Indian cooking is not a single-pot affair. Anyone who makes chapatis, does a *tadka*, and stirs a *dal* simultaneously knows that a standard single-plate induction unit will not suffice.

The Energy and Resources Institute (TERI) argues that research and development on multi-pot and flame-replicating induction models is essential before mass adoption can take off, not as an afterthought, possibly explaining the 5% electric cooking share in 2021.

Both the International Institute for Sustainable Development and IEEFA recommend starting with urban kitchens, thereby freeing imported LPG for rural areas that still lack reliable electricity.

The logic is sound – but it leads to a harder question: if a hundred million urban kitchens switch on induction cooktops in the evening, what happens to the power grid?

What is a 'peak'?

Electricity demand shifts throughout the day. It ramps up around 3 p.m. and again from 9-11 p.m., mostly because households all flip on lights, fans, TVs, and ACs at the same time. This surge is called the 'peak.'

India's peak demand rose from 148 GW in 2014 to a record 242.5 GW in December 2025. According to the International Energy Agency (IEA), for every degree rise in average daily temperature, peak demand now increases by more than 7 GW.

GETTY IMAGES

When demand spikes beyond a distribution company's (discom's) contracted supply, it has a few options – none of them cheap.

It can buy power on the spot market, typically through the Indian Energy Exchange, where prices can swing from ₹3.50 per unit in normal hours to ₹9-10 during peak slots. It can fire up expensive gas-based peaking plants or release stored hydropower. It can dispatch grid-scale batteries – BSES Rajdhani in Delhi has commissioned India's first commercial battery storage system for precisely this kind of energy arbitrage.

Or, as a last resort, it can impose planned power cuts, rotating blackouts across zones – what is known as load shedding – which disrupts livelihoods, damages industrial output, and is increasingly penalised by regulators.

Now imagine adding millions of induction cooktops to that evening peak window. Without intelligent management, mass electric cooking would steepen the evening peak, raise spot-market costs, and increase the risk of outages.

The question is not whether to electrify cooking, but how to do so without overwhelming the grid. That is where automated demand response enters the picture.

Can smart technology flatten the peak automatically?

OpenADR – Open Automated Demand Response – is a two-way communication standard that enables automated participation of smart thermostats, EV chargers, water heaters, and cooktops in demand response, ancillary services (frequency/voltage), and DER coordination. These devices can adjust their consumption automatically, without anyone having to lift a finger.

Born after California's 2002 energy crisis, its latest version plugs into modern energy systems using standard web protocols.

India has begun deploying it. Tata Power Delhi Distribution ran the country's first OpenADR pilot across 167 commercial and industrial consumers, achieving an average peak reduction of 14%. A study done of the pilot stated that peak shaving ability of close to 7% could be achieved if the technology were deployed across buildings in India.

Internationally, South Korea's AutoDR pilot reduced electricity use by 24%; such programmes typically pay for themselves within four years by deferring the cost of new grid infrastructure.

What discoms still lack is the full stack: OpenADR-compliant servers, smart-meter-embedded receivers, and aggregator platforms that can orchestrate distributed loads into virtual power plants.

Building this stack is essential – but it is only half the solution. The other half lies in turning households from passive consumers into active grid participants, while also upgrading household load capacity from 3 kW to 5 kW through investment in transformers and feeder infrastructure.

Can rooftop solar and neighbourhood trading take the pressure off the grid?

A rooftop solar panel paired with a battery can turn a household into a 'prosumer' – both a producer and a consumer. The solar panel generates power by day; the battery stores surplus energy; and that stored energy can be used in the evening to run the induction cooktop. This offsets precisely the peak that mass e-cooking would otherwise create.

A 2025 Australian national-grid study referred to a halving of peak load and reduction of grid reinforcement costs by 75% when residential electrification was combined with rooftop solar, batteries, and off-peak scheduling.

India's rooftop solar capacity is projected to more than double from 24 GW in 2026 to over 41 GW by 2030, boosted by the PM-Surya Ghar Yojana, which aims to provide 300 units of free electricity to 10 million households.

The real impact comes when surplus solar is not just stored but traded.

Peer-to-peer (P2P) energy trading allows households to sell excess electricity directly to neighbours through digital platforms, bypassing the traditional discom route.

India ran South Asia's first blockchain-based P2P solar trading pilot in Lucknow, led by the India Smart Grid Forum and Australia's Powerledger, under a regulatory sandbox approved by the Uttar Pradesh Electricity Regulatory Commission. Prosumers set prices, tracked trades in real time, and settled transactions through smart contracts. The result was a 43% reduction in the energy buy price compared with the retail tariff.

Following the pilot's success, Uttar Pradesh directed all its utilities to make provisions for P2P trading – a first for any State. In February 2026, the Centre announced a P2P facility under the India Energy Stack for Delhi and western Uttar Pradesh. If a cluster of homes on a single feeder can trade solar surpluses during the evening cooking hours, the local peak flattens, the discom avoids buying expensive exchange power, and the neighbourhood effectively becomes a micro virtual power plant.

What needs to happen, and how soon?

New York's All-Electric Buildings Act mandates that most new buildings under seven storeys be all-electric from January 2026, and taller buildings from 2029.

India has begun laying the groundwork. The Go Electric campaign and the National Efficient Cooking Programme target two million induction stoves. The Bureau of Energy Efficiency has launched star labelling for induction hobs; the PM-Surya Ghar scheme links rooftop solar adoption to household savings.

But a wider architecture is needed: redirect part of the estimated ₹40,000 crore annual LPG subsidy towards one-time capital support for induction cooktops. Expand Energy Efficiency Services Limited's (EESL) bulk-procurement model to e-cooking appliances. Mandate time-of-use tariffs for e-cooking and require OpenADR compatibility in new appliances and smart meters. Fund R&D on multi-pot induction technology designed for Indian cooking. And mandate all-electric construction for new residential buildings in Tier-1 cities.

The urgency is as much geopolitical as it is economic. Every dollar India spends on LPG imports goes through supply chains exposed to the Strait of Hormuz and the decisions of oil producers.

Electricity is different – you can generate it from solar panels on rooftops and store it in batteries we assemble here. We are talking about moving from imported fuel to power we generate ourselves. That is not just energy policy, that is sovereignty.

Urban India is the obvious place to start this shift. The grid works, smart meters are already rolling out, and rooftop solar pays for itself in cities. The technology is there. The numbers add up. We know how to manage the grid. The question is whether the policy framework will catch up before the next oil shock forces the issue.

(The author is an Energy and Emerging Technologies expert)

THE GIST

- Electric cooking is now cheaper than unsubsidised LPG, but shifting hundreds of millions of kitchens from flame to wire raises questions about grid stress and peak demand.
- Induction cooktops are far more efficient than LPG burners, yet mass adoption will require multi-pot appliances, smart demand response, and upgrades to distribution infrastructure.
- Rooftop solar, batteries, and peer-to-peer energy trading could help flatten evening peaks and reduce India's dependence on imported LPG.

News Analysis: The Shift from Flame to Wire

1. The Economic & Efficiency Argument

Cost Advantage: As of late 2025, e-cooking is 37% cheaper than unsubsidized LPG and 14% cheaper than Piped Natural Gas (PNG).

Energy Efficiency: Induction cooktops are far superior in energy transfer.

Induction: ~85% efficiency.

LPG Burner: ~40% efficiency.

The "Ujjwala" Factor: Only the heavily subsidized PMUY (Pradhan Mantri Ujjwala Yojana) remains cheaper than electricity, but this places a massive recurring fiscal burden on the exchequer.

2. Addressing the "Peak Demand" Challenge

The Peak Problem: India's peak demand reached 242.5 GW in December 2025. Mass adoption of e-cooking during evening hours (9-11 PM) could overwhelm the grid.

Smart Solutions (OpenADR): Using Open Automated Demand Response allows smart appliances to talk to the grid. They can automatically reduce consumption during peaks without manual intervention.

Pilot Success: A Tata Power pilot in Delhi showed a 14% reduction in peak load using these technologies.

3. The Prosumer Revolution

PM-Surya Ghar Yojana: Aims to provide 300 units of free electricity via rooftop solar to 10 million households.

Peer-to-Peer (P2P) Trading: Using blockchain technology (as trialled in Lucknow), households can sell surplus solar power to neighbors. This creates a "Virtual Power Plant" that flattens local grid peaks during cooking hours.

Static Section: UPSC Relevant Context

Comparison: LPG vs. Electric Cooking

Feature	LPG / PNG	Electric (Induction)
Primary Source	Fossil Fuel (60% Imported)	Electricity (Increasingly Renewable)
Efficiency	Low (40%)	High (85%)
Safety	Risk of gas leaks/explosions	High (No open flame, auto-cutoff)
Grid Impact	None	High (Requires "Smart Grid" management)

Key Government Schemes & Initiatives

National Efficient Cooking Programme (NECP): Launched by EESL to promote affordable induction-based cookstoves.

Go Electric Campaign: A multi-ministerial initiative to spread awareness about the benefits of electric vehicle charging and e-cooking.

Energy Conservation Building Code (ECBC): Setting standards for energy-efficient construction, which may soon include "all-electric" mandates for Tier-1 cities.

Energy Security & The Strait of Hormuz: The Strait of Hormuz is a **maritime chokepoint** between the Persian Gulf and the Gulf of Oman. Since India imports a vast majority of its LPG through this route, any regional conflict (as seen in recent West Asia escalations) directly threatens India's food security by inflating cooking costs.

Conclusion

India's journey toward "Atmanirbhar" (Self-reliant) energy requires moving the kitchen away from imported fossil fuels. While the technical hurdles—such as designing induction stoves for chapatis and tadkas—are being solved by R&D, the real challenge lies in grid modernization. By integrating rooftop solar, battery storage, and smart trading platforms, India can transform its power sector from a passive utility into an interactive, decentralized network.

UPSC Prelims Exam Practice Question

Ques: The term "Prosumer" in the energy sector refers to:

(a) A consumer who only consumes electricity

(b) A producer who only generates electricity

(c) A consumer who also produces electricity (e.g., rooftop solar users)

(d) A government-owned electricity distributor

Ans: c)

UPSC Mains Exam Practice Question

Ques: "Electrification of cooking is central to India's energy security and climate goals."Examine. **(250 Words)**

Page : 12 : GS III : Indian Economy / Prelims Exam

India's trade dynamics faced a sharp shift in February 2026, as a surge in imports flipped the total trade balance from a surplus to a $4 billion deficit. Despite resilience in the services sector, merchandise exports remained stagnant, and the Ministry of Commerce has issued a cautionary outlook for March due to escalating logistical bottlenecks stemming from the ongoing West Asia crisis.

Goods export flat in Feb.; official sees dip in March on conflict

Commerce Secretary Agrawal noted March may be challenging on account of logistical issues on West Asia crisis, while releasing Feb. data

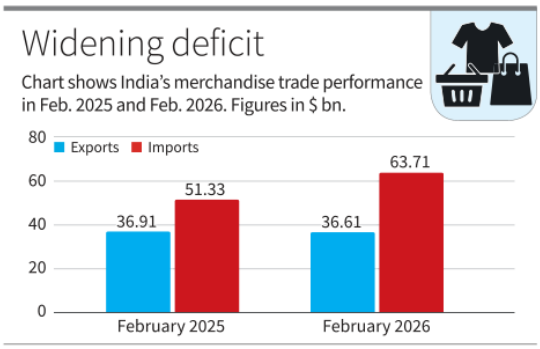
T.C.A. Sharad Raghavan
NEW DELHI

India's trade balance stood at a deficit of about $4 billion in February compared with a surplus of $2.7 billion a year earlier due in large part to merchandise exports staying flat while imports of both merchandise and services grew significantly during the month.

Releasing the data, Commerce Secretary Rajesh Agrawal said exports in March are likely to be impacted by the ongoing conflict in West Asia.

As per the Ministry of Commerce and Industry data, total exports, including merchandise and services, grew 11% to $76.1 billion, while total imports rose 21.7% to $80.1 billion.

Within this, merchandise imports widened gap over exports. Merchandise exports were largely flat at $36.6 billion in February compared with $36.9 billion a year earlier. Merchandise imports, however, climbed 24.2% to $63.7 billion over this period.



'Likely to worsen'

Mr. Agrawal said the situation may worsen in March on West Asia crisis.

"Despite all of the challenges, our merchandise exports have been doing well," Mr. Agrawal told the press. "The month of March will be a challenging one as well, because of too many logistics challenges, and when one part of the geography gets constrained, then too much of exports will not happen. Exports will likely see a downward trend this month because of the logistical challenges."

In February, services exports climbed almost 25% to $39.5 billion while imports grew almost 13% to $16.4 billion.

News Analysis: Trade Volatility and Geopolitical Headwinds

The Widening Trade Deficit

The Shift: February saw a total trade deficit of $4 billion, a stark contrast to the $2.7 billion surplus recorded in the same month last year.

Merchandise Stagnation: Merchandise exports were flat at $36.6 billion, failing to grow despite global demand, while merchandise imports shot up by 24.2% to $63.7 billion.

Services as a Cushion: Services remained the "silver lining," with exports growing 25% to $39.5 billion, providing a significant buffer against the merchandise gap.

The "March Challenge": Logistics & Geopolitics

West Asia Crisis: The conflict has constrained key geographic trade routes. Commerce Secretary Rajesh Agrawal noted that when one part of the geography is blocked, it creates a "domino effect" on global shipping schedules.

Logistical Constraints: Container shortages, increased freight insurance premiums, and diverted shipping routes (avoiding the Red Sea/Strait of Hormuz) are expected to cause a downward trend in export volumes for March.

Static Section

Components of Trade Balance

The Trade Balance is a key component of the Current Account Balance. It is divided into two parts:

Trade in Goods (Merchandise): Usually in deficit for India due to high imports of crude oil, gold, and electronics.

Trade in Services (Invisibles): Usually in surplus for India, driven by IT, software, and business consultancy services.

Key Trade Terms for CSE

Trade Deficit: When the value of a country's imports exceeds its exports ($Imports > Exports$).

Trade Surplus: When exports exceed imports ($Exports > Imports$).

Current Account Deficit (CAD): A broader measurement that includes the trade balance plus net income (interest, dividends) and direct transfers (remittances).

Logistical Costs: In India, logistics costs are approximately 13–14% of GDP, significantly higher than the global average of 8%. Geopolitical conflicts exacerbate this by forcing longer travel routes (e.g., around the Cape of Good Hope).

Strategic Impact of West Asia on Indian Trade

West Asia is not just an energy provider; it is a vital transit hub.

The Red Sea Route: Connects India to European and North American markets.

The International North-South Transport Corridor (INSTC): An alternative route being developed to bypass traditional chokepoints.

Conclusion

The flat growth in merchandise exports combined with rising import bills underscores India's vulnerability to external geopolitical shocks. While the services sector continues to perform strongly, the "logistics challenge" highlighted by the

Commerce Ministry suggests that structural reforms in domestic logistics (like the National Logistics Policy) and trade route diversification are essential to maintain export momentum during global instability.

UPSC Mains Exam Practice Question

Ques: "India's services sector acts as a stabilizing force in its external sector." Examine in the context of recent trade trends. **(150 Words)**

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Belém as a test of a new model of forest finance

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The climate summit that was held in Belém, Brazil in November 2025, refocused renewed global attention to a difficult but unavoidable truth: protecting tropical forests requires more than ambitious pledges – it requires a fundamental shift in who holds power over those forests. As world leaders gathered in the Amazon city, the signature initiative was Brazil's Tropical Forest Forever Facility (TFFF), or a finance mechanism presented as a paradigm shift in global conservation. Yet, amid the flurry of announcements and diplomacy, persistent tensions revealed that major challenges remain around participation, equity and accountability.

The difference

The TFFF proposes to compensate countries for maintaining standing forests, not just for avoiding deforestation. As reported, the Fund has already secured more than $5.5 billion in initial commitments, including a $3 billion pledge from Norway. Unlike many past funds, it is not structured purely as a donation vehicle. Rather, it is set up to generate returns and reward long-term forest conservation. Critically, at least 20% of its performance-based payments are reserved for indigenous peoples and local communities, whose daily stewardship plays an outsize role in keeping forests intact.

This allocation is not symbolic. According to the Rainforest Foundation US, indigenous and local communities were deeply involved in co-designing the facility. Across months of global consultations, more than 400 community leaders shared their perspectives. The model offers something new: not only financial support but also formal decision-making power. Yet, important gaps remain. For instance, indigenous representatives do not have voting rights on the main governing bodies of the Fund, raising questions about how genuinely inclusive decision-making will be.

Even as the TFFF proposes this inclusive architecture, many civil society groups have voiced their strong criticism. The Global Forest Coalition (GFC) described the fund as "colonialistic", arguing that it benefits intermediaries rather than forest peoples. Its worry was about a mechanism built around market logic and financial returns that may not address the root structural causes of deforestation, such as agribusiness expansion, oil and mining projects, and large infrastructure, all of which continue to drive forest loss. According to the GFC, rewarding standing forests without curbing exploitative activities risks creating a superficial conservation narrative.

Compounding this, some critics argue that the payment rate, around $4 a hectare in earlier proposals, is inadequate given the manifold ecosystem services that forests provide. There is a risk that national governments could absorb most of the funds, while communities on the ground may see little benefit. The success of the TFFF, therefore, depends not just on its size but on strong delivery mechanisms and rigorous, locally accountable institutions.

> The real test is whether it will protect the communities protecting the forest

Conservation overlooks power imbalances

Amid these debates, Brazil has taken steps to buttress access. On the sidelines of COP30, it announced a dedicated digital platform to help forest countries navigate TFFF eligibility. The platform, developed with partners such as the UNDP, FAO, WWF and the Global Alliance of Territorial Communities (GATC), promises technical assistance, capacity building and peer collaboration. It is stated that independence from the TFFF's governing structures is meant to prevent conflict of interest while focusing on inclusion and knowledge sharing.

This structure matters because forest conservation has long overlooked deep power imbalances. For many indigenous groups, protecting the Amazon is not just an environmental fight but also a struggle for survival. This was clear at COP30, where indigenous protesters entered the venue demanding territorial rights, insisting that their land cannot be treated as a commodity. Many felt excluded from decisions that directly affect their homes.

Land rights remain central to this debate. Ahead of COP30, the Forest and Climate Leaders' Partnership (FCLP) renewed its Forest and Land Tenure Pledge, committing $1.8 billion from 2026 to 2030 to support indigenous, local and Afro-descendant communities. The pledge was a key part of the Belém agenda, reflecting scientific warnings that the Amazon's future remains at risk without secure land rights.

Civil society groups also stressed that climate justice and nature protection cannot be separated. Conservation International called COP30 a chance to secure long-term funding for the Amazon, supporting forest protection, community governance and sustainable livelihoods. They warned that sidelining indigenous leadership weakens both climate action and human rights.

Yet, financing alone cannot counter pressures from infrastructure, agribusiness and extractive industries. The protests in Belém showed that money means little without real shifts in power. Without strong accountability, funds risk flowing to intermediaries while local communities continue to face land loss and displacement.

Beyond the money

The TFFF's launch in Belém is a major step, but its credibility depends on whether it actually transfers power to forest communities rather than reinforcing old hierarchies. For indigenous peoples, forests are home and survival. The real challenge is in ensuring that finance reaches them in forms they control, turning promises into lasting protection. A future of genuine conservation will depend on whether global finance strengthens community rights instead of replicating old patterns of exclusion.

The views expressed are personal

GS Paper III : Environment

UPSC Mains Exam Practice Question: Discuss the role of indigenous communities in forest conservation. Why is land tenure security crucial for climate justice? **(250 Words)**

Context :

The 2025 Climate Summit in Belém, Brazil, introduced a transformative approach to environmental economics through the Tropical Forest Forever Facility (TFFF). Moving away from traditional "donation-based" models, this facility treats standing forests as global assets that provide essential ecosystem services. However, the summit also highlighted a critical tension: the struggle to balance market-driven finance with the sovereignty and land rights of indigenous communities.

News Analysis: A New Paradigm for Forest Finance

1. The Tropical Forest Forever Facility (TFFF)

The Mechanism: Unlike previous models that paid only for "avoided deforestation," the TFFF compensates nations for maintaining **standing forests**.

Financial Structure: It is designed to generate returns and reward long-term conservation. It has already secured **$5.5 billion**, including a significant $3 billion commitment from Norway.

Equity Feature: A mandated 20% of payments are reserved for indigenous peoples and local communities (IPLCs).

2. The "Participation Gap"

Inclusion vs. Power: While over 400 community leaders were consulted, critics point out that indigenous representatives still lack voting rights on the Fund's main governing bodies.

The "Colonial" Critique: The Global Forest Coalition (GFC) argues that market-logic mechanisms often benefit financial intermediaries rather than addressing the structural drivers of deforestation like agribusiness, mining, and oil projects.

3. The Digital Platform for Inclusion

To bridge the technical gap, Brazil and partners (UNDP, FAO, WWF) launched a digital platform to provide technical assistance and capacity building, helping forest-rich nations navigate TFFF eligibility without conflicts of interest.

Static Section:

Ecosystem Services and Conservation Finance

Ecosystem Services: These are the benefits humans freely gain from the natural environment, categorized into:

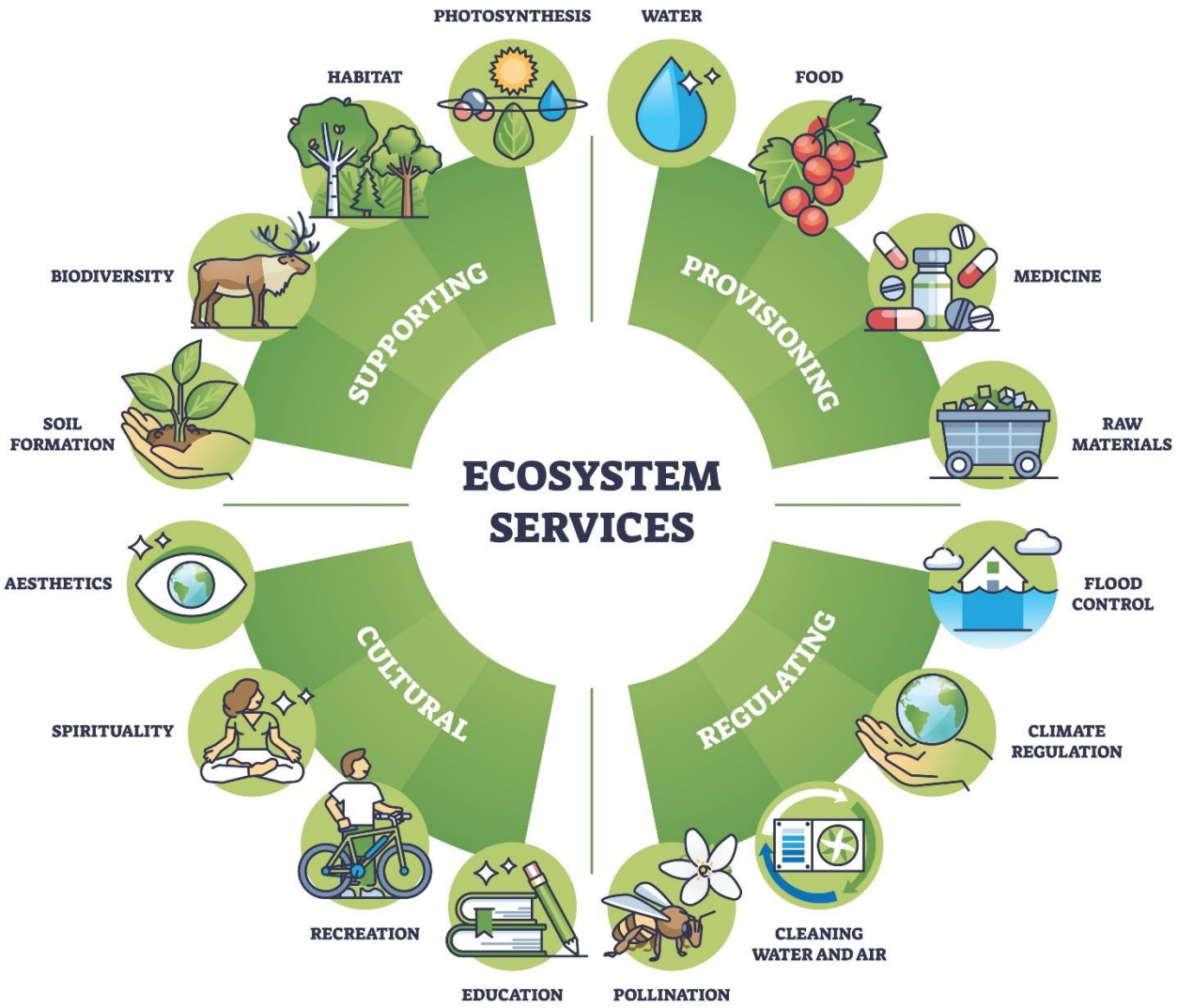
Provisioning: Food, water, timber.

Regulating: Carbon sequestration, climate regulation.

Supporting: Nutrient cycling, soil formation.

Cultural: Spiritual and recreational benefits.

Payment for Ecosystem Services (PES): A transparent system where the beneficiaries of environmental services pay the providers (like forest dwellers) for maintaining them. The TFFF is a global-scale application of this concept.



International Forest Frameworks

REDD+ (Reducing Emissions from Deforestation and Forest Degradation): A UN-backed framework that created a financial value for the carbon stored in forests. The TFFF seeks to evolve beyond REDD+ by rewarding preservation rather than just reduction in loss.

Kunming-Montreal Global Biodiversity Framework (GBF): Aims to protect 30% of the planet's land and oceans by 2030 (the "30x30" goal), emphasizing the role of indigenous territories.

The Importance of Land Tenure

Scientific data consistently shows that **forests managed by indigenous peoples** have lower deforestation rates than protected areas managed by the state. This is why the **Forest and Land Tenure Pledge** ($1.8 billion) is central to climate justice—without legal title to their land, communities cannot claim the financial rewards of conservation.

Conclusion

The Belém Summit has shifted the conversation from "how much money is needed" to "who controls the money." For India, which has its own significant forest-dwelling populations and complex land rights issues (under the Forest Rights Act, 2006), the TFFF model provides a crucial case study. The success of such global facilities will ultimately depend on whether they treat forests as mere "carbon sinks" or as living landscapes inseparable from the rights of the people who inhabit them.