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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

Recent statements by former U.S. President Donald Trump, accusing India of anti-American economic behaviour, come at a time when India is positioning itself as a global economic leader and strategic power. Trump's remarks targeted India's trade ties with Russia, high tariffs, BRICS membership, and energy imports from Iran and Russia. This has triggered diplomatic and economic responses from India.

India a 'bright spot', says govt. amid Trump tirade

U.S. President lashes out at India on ties with Russia, membership of 'anti-American' BRICS, high tariffs

He announces that the U.S. and Pakistan have concluded a deal to develop massive oil reserves

Commerce Minister defends India's trade record, cites deals with UAE, U.K., Australia, and EFTA

T.C.A. Sharad Raghavan
Suhasini Haidar
NEW DELHI

India and Russia could "take their dead economies down together", U.S. President Donald Trump said among a barrage of statements targeting India on Thursday, a day before the 25% tariffs announced on Indian imports by the U.S. are set to take effect.

However, countering Mr. Trump's statement, Commerce and Industries Minister Piyush Goyal said India is being seen as an economic "bright spot" in the world.

In statements on social media and then while speaking to presspersons at the White House, Mr. Trump lashed out at India for its ties with Russia, membership of the "anti-American" BRICS, high tariffs, "massive" trade deficit with the U.S., and for imposing the "most strenuous and obnoxious non-monetary trade barriers of any country".

Energy trade with Iran

The U.S. State Department also sanctioned six Indian companies and five Indian nationals for involvement in energy trade with Iran.

Mr. Trump also announced that the U.S. and Pakistan had concluded a deal whereby the two countries will work together on "developing their massive oil reserves", in continuation with the U.S.'s growing closeness with Pakistan over trade issues in the aftermath of the Pahalgam terror attack and Operation Sindoor.

The Ministry of External Affairs declined to comment on Mr. Trump's remarks, and directed attention to the Commerce Ministry statements.

The U.S. is expected to start levying duties as part of its 'Liberation Day' tariffs on imports from countries around the world from Friday.

The Centre said it was examining the impact of the 25% tariffs as well as undefined penalties for India's energy imports from Russia.

In a *suo motu* statement in Parliament on Thursday, Mr. Goyal said the government has been meeting domestic stakeholders, "including exporters and industry", to assess the impact of the new tariffs. He added that the government attaches "the utmost importance" to protecting and promoting the welfare of India's farmers, workers, entrepreneurs, exporters, micro, small and medium enterprises, and all sections of industry.

> I don't care what India does with Russia. They can take their dead economies down together, for all I care

> We are in the process of choosing the oil company that will lead this partnership [with Pakistan]. Who knows, maybe they'll be selling oil to India some day

DONALD TRUMP
U.S. President

"The government is confident that we will continue our fast-paced journey of inclusive growth and sustainable development towards the goal of Viksit Bharat 2047. India is moving confidently towards self-reliance," Mr. Goyal added, referring to India as one of the "top five economies of the world", which is poised to become the third-largest.

In his statement, Mr. Goyal defended India's record on trade agreements, highlighting that in an increasingly protectionist world, India had entered into a number of "mutually beneficial" trade agreements with the UAE, the U.K., Australia and European Free Trade Association (EFTA) countries.

"All things not good", Mr. Trump had said in a social media post on Wednesday, while saying that India would be paying a tariff of 25% plus a penalty from Friday for buying military hardware and energy from Russia. On Thursday morning, he posted the U.S. and India "don't do a lot of trade". In 2024, India and the U.S. conducted trade in goods and services worth $186 billion, with a surplus of $41 billion in India's favour.

While the government has thus far maintained that it is continuing talks with U.S. negotiators over a Free Trade Agreement (FTA), which was launched by Prime Minister Narendra Modi and Mr. Trump during a meeting in Washington in February, the strong words from Mr. Trump appear to indicate serious differences between the two sides.

In another jibe, Mr. Trump added that Pakistan may be "selling oil to India someday!"

Pakistan's Prime Minister Shehbaz Sharif on Thursday thanked Mr. Trump for the "historic" trade agreement reached between Islamabad and Washington, and expressed hope that it would expand cooperation between the two nations.

Pakistan currently imports oil from West Asia to meet its energy demands, but there are reports about vast offshore deposits that are largely unexplored due to a lack of technical expertise and funds.

(With PTI inputs)

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Key Issues Raised by the U.S.

1. **India-Russia Economic Ties**:
   - Trump criticized India's continued energy and defense engagement with Russia, especially amid the Ukraine war.
   - Threat of penalties/tariffs over these ties.
2. **BRICS Membership**:
   - Labelled as "anti-American," reflecting growing U.S. unease over multilateral groupings outside Western influence.
3. **Trade Deficit & Tariff Barriers**:
   - U.S. accuses India of imposing high tariffs and non-tariff barriers.
   - Claims India has one of the largest trade surpluses with the U.S. ($41 billion in India's favour in 2024).

4. **Sanctions on Indian Entities**:
    - U.S. sanctions 6 Indian companies and 5 nationals for energy trade with Iran.
5. **U.S.-Pakistan Oil Deal**:
    - Symbolic pivot toward Pakistan amid trade tensions with India.
    - Could be interpreted as a geopolitical counterbalance.

India's Response

1. **Commerce Minister's Statement**:
    - India is seen as a "bright spot" in the global economy.
    - Asserted India's record of responsible and mutually beneficial trade agreements (UAE, U.K., Australia, EFTA).
2. **Self-Reliance and Growth Focus**:
    - Emphasis on **Viksit Bharat 2047** and Atmanirbhar Bharat.
    - Ongoing consultations with stakeholders to assess tariff impacts.
3. **Ongoing FTA Talks**:
    - India maintains it is engaged in negotiations with the U.S., despite the rhetoric.

Strategic and Economic Implications for India

1. Strain in India-U.S. Ties

- **FTA in jeopardy**: Strong language from Trump may hinder progress.
- **Strategic trust deficit**: Allegations regarding Russia and BRICS could widen gaps.

2. Trade and Tariff Pressures

- **25% U.S. tariff**: May hurt Indian exports, especially in sectors like steel, textiles, pharmaceuticals.
- **Non-tariff penalties**: Energy, defense and technology sectors could see targeted actions.

3. Geopolitical Realignment

- The **U.S.-Pakistan oil collaboration** signals a recalibration of alliances.
- India may face increased pressure to choose sides between Western and BRICS-led blocs.

4. Diplomatic Balancing

- India continues strategic autonomy: Energy from Russia/Iran, ties with West and BRICS.
- Key test for **multi-alignment strategy**.

Opportunities for India

- **Global South leadership**: India can use BRICS/G20 platforms to push for reform in global governance.
- **Diversifying partnerships**: Strengthen trade ties with Europe, ASEAN, and Africa amid U.S. uncertainty.
- **Domestic reforms**: Improve ease of doing business, reduce trade barriers to attract investment.

Challenges Ahead

- **Navigating sanctions** without compromising energy security.
- Managing a possible **diplomatic fallout** with both the U.S. and BRICS states.
- **Internal industry impact** of new tariffs and supply chain shifts.

Way Forward

- **Proactive Diplomacy**: Engage with U.S. counterparts to de-escalate rhetoric, revive FTA negotiations.
- **Strategic Communication**: Project India's balanced global role without being seen as anti-West.
- **Economic Resilience**: Fast-track domestic manufacturing, reduce dependency on a few markets.

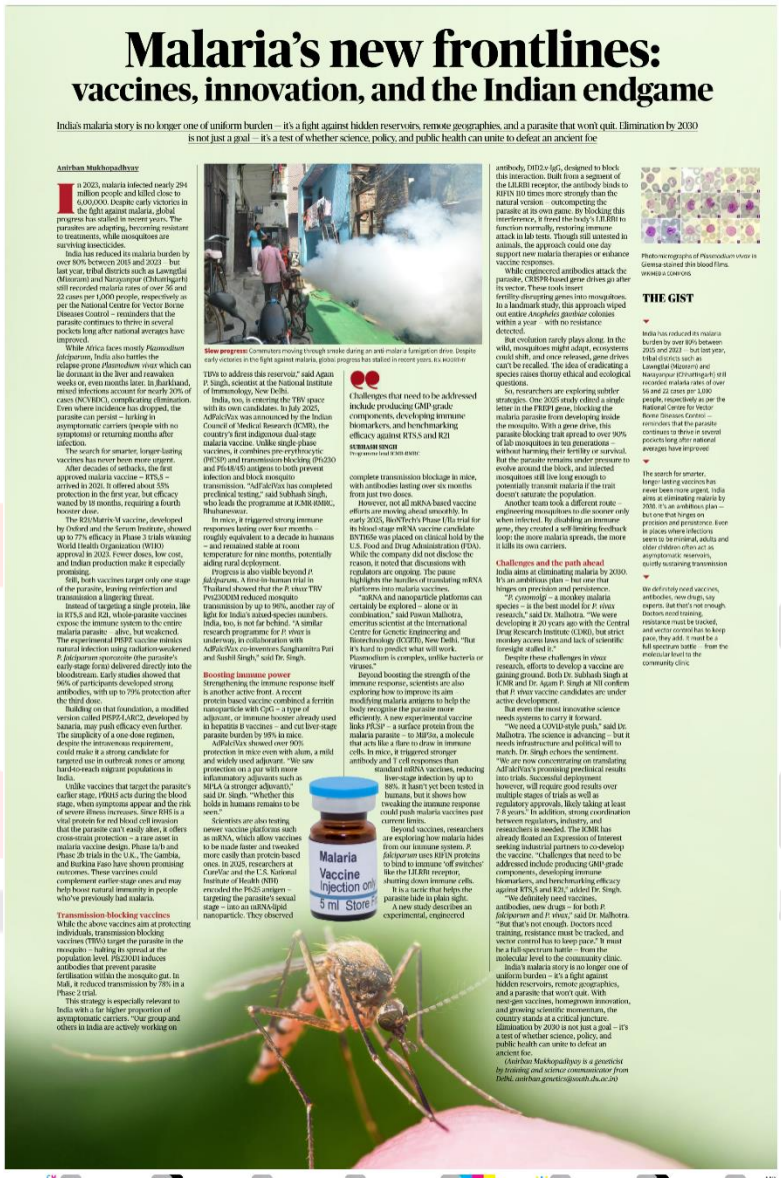
Conclusion

The Trump tirade reflects deeper fault lines in India-U.S. relations, though not irreversible. India must continue balancing its geopolitical interests while strengthening its economic fundamentals and maintaining its leadership ambitions on the global stage. In a multipolar world, India's "bright spot" status will depend not just on its growth numbers, but also on its ability to manage strategic contradictions.

UPSCMainsPractice Question

Ques: Examine the recent developments in India-U.S. trade relations in light of protectionist tendencies and geopolitical shifts. How can India balance its strategic autonomy with global economic integration? **(150 Words)**

India aims to eliminate malaria by 2030. While progress has been made — with over 80% reduction in malaria cases between 2015 and 2023 — challenges persist, particularly in tribal and hard-to-reach regions. The development of innovative vaccines, improved diagnostics, and novel vector control methods are critical to achieving this target.



Malaria's new frontlines:
vaccines, innovation, and the Indian endgame

India's malaria story is no longer one of uniform burden — it's a fight against hidden reservoirs, remote geographies, and a parasite that won't quit. Elimination by 2030 is not just a goal — it's a test of whether science, policy, and public health can unite to defeat an ancient foe

Anirban Mukhopadhyay

In 2023, malaria infected nearly 294 million people and killed close to 6,00,000. Despite early victories in the fight against malaria, global progress has stalled in recent years. The parasites are adapting, becoming resistant to treatments, while mosquitoes are surviving insecticides.

India has reduced its malaria burden by over 80% between 2015 and 2023 — but last year, tribal districts such as Lawngtlai (Mizoram) and Narayanpur (Chhattisgarh) still recorded malaria rates of over 56 and 22 cases per 1,000 people, respectively as per the National Centre for Vector Borne Diseases Control — reminders that the parasite continues to thrive in several pockets long after national averages have improved.

While Africa faces mostly *Plasmodium falciparum*, India also battles the relapse-prone *Plasmodium vivax* which can lie dormant in the liver and reawaken weeks or, even months later. In Jharkhand, mixed infections account for nearly 20% of cases (NCVBDC), complicating elimination. Even where incidence has dropped, the parasite can persist — lurking in asymptomatic carriers (people with no symptoms) or returning months after infection.

The search for smarter, longer-lasting vaccines has never been more urgent.

After decades of setbacks, the first approved malaria vaccine — RTS,S — arrived in 2021. It offered about 55% protection in the first year, but efficacy waned by 18 months, requiring a fourth booster dose.

The R21/Matrix-M vaccine, developed by Oxford and the Serum Institute, showed up to 77% efficacy in Phase 3 trials winning World Health Organization (WHO) approval in 2023. Fewer doses, low cost, and Indian production make it especially promising.

Still, both vaccines target only one stage of the parasite, leaving reinfection and transmission a lingering threat.

Instead of targeting a single protein, like in RTS,S and R21, whole-parasite vaccines expose the immune system to the entire malaria parasite — alive, but weakened. The experimental PfSPZ vaccine mimics natural infection using radiation-weakened *P. falciparum* sporozoite (the parasite's early-stage form) delivered directly into the bloodstream. Early studies showed that 96% of participants developed strong antibodies, with up to 75% protection after the third dose.

Building on that foundation, a modified version called PfSPZ-LARC2, developed by Sanaria, may push efficacy even further. The simplicity of a one-dose regimen, despite the intravenous requirement, could make it a strong candidate for targeted use in outbreak zones or among hard-to-reach migrant populations in India.

Unlike vaccines that target the parasite's earlier stage, PfRH5 acts during the blood stage, when symptoms appear and the risk of severe illness increases. Since RH5 is a vital protein for red blood cell invasion that the parasite can't easily alter, it offers cross-strain protection — a rare asset in malaria vaccine design. Phase 1a/b and Phase 2b trials in the U.K., The Gambia, and Burkina Faso have shown promising outcomes. These vaccines could complement earlier-stage ones and may help boost natural immunity in people who've previously had malaria.

Transmission-blocking vaccines

While the above vaccines aim at protecting individuals, transmission blocking vaccines (TBVs) target the parasite in the mosquito — halting its spread at the population level. Pfs230D1 induces antibodies that prevent parasite fertilisation within the mosquito gut. In Mali, it reduced transmission by 78% in a Phase 2 trial.

This strategy is especially relevant to India with a far higher proportion of asymptomatic carriers. "Our group and others in India are actively working on TBVs to address this reserviod," said Agam P. Singh, scientist at the National Institute of Immunology, New Delhi.

India, too, is entering the TBV space with its own candidates. In July 2025, AdFalciVax was announced by the Indian Council of Medical Research (ICMR), the country's first indigenous dual-stage malaria vaccine. Unlike single-phase vaccines, it combines pre-erythrocytic (PfCSP) and transmission-blocking (Pfs230 and Pfs48/45) antigens to both prevent infection and block mosquito transmission. "AdFalciVax has completed preclinical testing," said Subhash Singh, who leads the programme at ICMR-RMRC, Bhubaneswar.

In mice, it triggered strong immune responses lasting over four months — roughly equivalent to a decade in humans — and remained stable at room temperature for nine months, potentially aiding rural deployment.

Progress is also visible beyond *P. falciparum*. A first-in-human trial in Thailand showed that the *P. vivax* TBV Pvs230D0M8 reduced mosquito transmission by up to 96%, another ray of light for India's mixed-species murders. India, too, is not far behind. "A similar research programme for *P. vivax* is underway, in collaboration with AdFalciVax co-inventors Sanghamitra Pati and Sushil Singh," said Dr. Singh.

Boosting immune power

Strengthening the immune response itself is another active front. A recent protein based vaccine combined a ferritin nanoparticle with CpG — a type of adjuvant, or immune booster already used in hepatitis B vaccines — and cut liver-stage parasite burden by 98% in mice.

AdFalciVax showed over 90% protection in mice even with alum, a mild and widely used adjuvant. "We saw protection on a par with more inflammatory adjuvants such as MPLA (a stronger adjuvant)," said Dr. Singh. "Whether this holds in human remains to be seen."

Scientists are also testing newer vaccine platforms such as mRNA, which allow vaccines to be made faster and tweaked more easily than protein-based ones. In 2025, researchers at CureVac and the U.S. National Institute of Health (NIH) encoded the Pfs25 antigen — targeting the parasite's sexual stage — into an mRNA-lipid nanoparticle. They observed complete transmission blockage in mice, with antibodies lasting over six months from just two doses.

> Challenges that need to be addressed include producing GMP-grade components, developing immune biomarkers, and benchmarking efficacy against RTS,S and R21
>
> SUBHASH SINGH
> Programme lead ICMR-RMRC

However, not all mRNA-based vaccine efforts are moving ahead smoothly. In early 2025, BioNTech's Phase 1/IIa trial for its blood-stage mRNA vaccine candidate BNT165b was placed on clinical hold by the U.S. Food and Drug Administration (FDA). While the company did not disclose the reason, it noted that discussions with regulators are ongoing. The pause highlights the hurdles of translating mRNA platforms into malaria vaccines.

"mRNA and nanoparticle platforms can certainly be explored — alone or in combination," said Pawan Malhotra, emeritus scientist at the International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi. "But it's hard to predict what will work. Plasmodium is complex, unlike bacteria or viruses."

Beyond boosting the strength of the immune response, scientists are also exploring how to improve its aim — modifying malaria antigens to help the body recognise the parasite more efficiently. A new experimental vaccine links PfS28 — a surface protein from the malaria parasite — to MiPsa, a molecule that acts like a flare to draw in immune cells. In mice, it triggered stronger antibody and T cell responses than standard mRNA vaccines, reducing liver-stage infection by up to 88%. It hasn't yet been tested in humans, but it shows how tweaking the immune response could push malaria vaccines past current limits.

Beyond vaccines, researchers are exploring how malaria hides from our immune system. *P. falciparum* uses RIFIN proteins to bind to immune 'off switches' like the LILRB1 receptor, shutting down immune cells.

It is a tactic that helps the parasite hide in plain sight.

A new study describes an experimental, engineered antibody, D1D2.v-IgG, designed to block this interaction. Built from a segment of the LILRB1 receptor, the antibody binds to RIFIN 110 times more strongly than the natural version — outcompeting the parasite at its own game. By blocking this interference, it freed the body's LILRB1 to function normally, restoring immune attack in lab tests. Though still untested in animals, the approach could one day support new malaria therapies or enhance vaccine responses.

While engineered antibodies attack the parasite, CRISPR-based gene drives go after its vector. These tools insert fertility-disrupting genes into mosquitoes. In a landmark study, this approach wiped out entire *Anopheles gambiae* colonies within a year — with no resistance detected.

But evolution rarely plays along. In the wild, mosquitoes might adapt, ecosystems could shift, and once released, gene drives can't be recalled. The idea of eradicating a species raises thorny ethical and ecological questions.

So, researchers are exploring subtler strategies. One 2025 study edited a single letter in the FREP1 gene, blocking the malaria parasite from developing inside the mosquito. With a gene drive, this parasite-blocking trait spread to over 90% of lab-mosquitoes in ten generations — without harming their fertility or survival. But the parasite remains under pressure to evolve around the block, and infected mosquitoes still live long enough to potentially transmit malaria if the trait doesn't saturate the population.

Another team took a different route — engineering mosquitoes to die sooner only when infected. By disabling an immune gene, they created a self-limiting feedback loop: the more malaria spreads, the more it kills its own carriers.

Challenges and the path ahead

India aims at eliminating malaria by 2030. It's an ambitious plan — but one that hinges on precision and persistence.

"*P. cynomolgi* — a monkey malaria species — is the best model for *P. vivax* research," said Dr. Malhotra. "We were developing it 20 years ago with the Central Drug Research Institute (CDRI), but strict monkey access laws and lack of scientific foresight stalled it."

Despite these challenges in vivax research, efforts to develop a vaccine are gaining ground. Both Dr. Subhash Singh at ICMR and Dr. Agam P. Singh at NII confirm that *P. vivax* vaccine candidates are under active development.

But even the most innovative science needs systems to carry it forward.

"We need a COVID-style push," said Dr. Malhotra. The science is advancing — but it needs infrastructure and political will to match. Dr. Singh echoes the sentiment. "We are now concentrating on translating AdFalciVax's promising preclinical results into trials. Successful deployment however, will require good results over multiple stages of trials as well as regulatory approvals, likely taking at least 7-8 years." In addition, strong coordination between regulators, industry, and researchers is needed. The ICMR has already floated an Expression of Interest seeking industrial partners to co-develop the vaccine. "Challenges that need to be addressed include producing GMP-grade components, developing immune biomarkers, and benchmarking efficacy against RTS,S and R21," added Dr. Singh.

"We definitely need vaccines, antibodies, new drugs — for both *P. falciparum* and *P. vivax*," said Dr. Malhotra. "But that's not enough. Doctors need training, resistance must be tracked, and vector control has to keep pace." It must be a full-spectrum battle — from the molecular level to the community clinic.

India's malaria story is no longer one of uniform burden — it's a fight against hidden reservoirs, remote geographies, and a parasite that won't quit. With next-gen vaccines, homegrown innovation, and growing scientific momentum, the country stands at a critical juncture. Elimination by 2030 is not just a goal — it's a test of whether science, policy, and public health can unite to defeat an ancient foe.

(Anirban Mukhopadhyay is a geneticist by training and science communicator from Delhi. anirban.genetics@south.du.ac.in)

Slow progress: Commuters moving through smoke during an anti-malaria fumigation drive. Despite early victories in the fight against malaria, global progress has stalled in recent years. RITU RAJ KONWAR

Photomicrographs of *Plasmodium vivax* in Giemsa-stained thin blood films. WIKIMEDIA COMMONS

THE GIST

- India has reduced its malaria burden by over 80% between 2015 and 2023 — but last year, tribal districts such as Lawngtlai (Mizoram) and Narayanpur (Chhattisgarh) still recorded malaria rates of over 56 and 22 cases per 1,000 people, respectively as per the National Centre for Vector Borne Diseases Control — reminders that the parasite continues to thrive in several pockets long after national averages have improved
- The search for smarter, longer-lasting vaccines has never been more urgent. India aims at eliminating malaria by 2030. It's an ambitious plan — but one that hinges on precision and persistence. Even in places where infections seem to be minimal, adults and older children often act as asymptomatic reservoirs, quietly sustaining transmission
- We definitely need vaccines, antibodies, new drugs, say experts. But that's not enough. Doctors need training, resistance must be tracked, and vector control has to keep pace, they add. It must be a full spectrum battle — from the molecular level to the community clinic

Key Issues in India's Malaria Landscape

1. Persistent Hotspots

- While national figures have improved, tribal districts like Lawngtlai (Mizoram) and Narayanpur (Chhattisgarh) still report high incidence rates (56 and 22 per 1000 people).
- Hidden reservoirs in asymptomatic carriers make elimination difficult.

2. Species Complexity

- Plasmodium vivax, common in India, can lie dormant in the liver and cause relapses — unlike P. falciparum dominant in Africa.
- Mixed infections (e.g., in Jharkhand) complicate diagnosis and treatment.

3. Drug and Insecticide Resistance

- Mosquitoes are evolving resistance to insecticides.
- Parasites are becoming resistant to current treatment regimens.

Vaccine Landscape: Innovation and Indian Contributions

A. First-Generation Vaccines

- RTS,S (Mosquirix) – WHO-approved in 2021; ~55% efficacy for 1 year, needs booster doses.
- R21/Matrix-M – Developed with Serum Institute of India, WHO-approved (2023), 77% efficacy, low-cost, scalable.

B. Next-Gen Vaccines

1. **Whole-Parasite Vaccines**
   - PfSPZ& PfSPZ-LARC2 (Sanaria) – Use weakened sporozoites; high efficacy but require IV administration.
2. **Blood-Stage Vaccine**
   - PfRH5 – Targets parasite's red cell invasion stage; cross-strain protection.
3. **Transmission-Blocking Vaccines (TBVs)**
   - Aim to stop parasite life cycle in mosquitoes.
   - Pfs230D1: Reduced transmission by 78% (Mali trials).
   - Pvs230D1M: Effective for P. vivax — crucial for India.

C. India's Indigenous Vaccine Efforts

- AdFalciVax (ICMR): First Indian dual-stage vaccine (pre-erythrocytic + TBV).
  - Stable at room temp for 9 months.
  - Completed preclinical trials in 2025.

- Trials and partnerships underway.

Emerging Technologies in the Pipeline

1. mRNA Platforms

- NIH &CureVac: mRNA-Pfs25 vaccine — complete transmission block in mice.
- BioNTech's BNT165e: On clinical hold due to FDA concerns.

2. Immune Response Engineering

- CpG adjuvants, ferritin nanoparticles, and MIP3-linked antigens boost vaccine strength and specificity.

3. Antibody Innovation

- D1D2.v-IgG: Engineered to block parasite's immune-suppressing RIFIN proteins — restoring natural immune response.

Vector Control: Genetic and Ethical Frontiers

A. Gene Drives

- CRISPR-based gene edits inserted into mosquitoes to disrupt reproduction.
- Successfully wiped out Anopheles gambiae in lab settings.
- Risks: Ecological imbalance, irreversibility, bioethical concerns.

B. Alternative Genetic Methods

- FREP1 edit: Prevents parasite development in mosquitoes.
- Conditional mosquito suicide: Infected mosquitoes self-limit their lifespan.

Challenges on the Road to 2030

Area	Challenges
Research	Lack of models for P. vivax; regulatory hurdles; need for GMP-grade vaccine components
Translation	Long trial timelines (7–8 years); efficacy benchmarking; weak R&D-industry linkages

Area	Challenges
Logistics	Deployment in tribal/rural areas; temperature stability; trained personnel
Governance	Need for coordinated multi-level action (regulators, industry, public health)
Surveillance	Tracking resistance, mixed infections, asymptomatic cases

Way Forward

1. Adopt a COVID-style R&D Push

- Fast-track clinical trials, approvals, and infrastructure funding.

2. Focus on P. vivax Research

- Support indigenous models like P. cynomolgi.
- Build domestic vaccine candidates and diagnostics for vivax.

3. Strengthen Health Systems

- Enhance training, diagnostic accuracy, and community awareness in tribal areas.

4. Integrated Approach

- Combine vaccines, antibodies, vector control, and surveillance under one national strategy.

5. Ethical & Ecological Oversight

- Balance innovation (e.g., gene drives) with ecological risk assessments and public consent.

Conclusion

India stands at a pivotal moment in the fight against malaria. Scientific breakthroughs like AdFalciVax, mRNA platforms, and gene-based vector control give new hope. But the 2030 elimination target will not be met by science alone — it demands political will, health system strengthening, and community engagement. Malaria elimination will be the true test of India's commitment to equity, innovation, and public health delivery.

UPSC Mains Practice Question

Ques: Despite significant progress, India continues to struggle with malaria in certain regions. Evaluate the emerging vaccine technologies and vector control strategies that could support India's goal of malaria elimination by 2030. Also, discuss the challenges in their implementation.**(250 Words)**

On July 30, the GSLV-F16 successfully launched the NISAR satellite — a landmark Indo-US collaboration in Earth observation. NISAR is the world's first dual-frequency synthetic aperture radar satellite that combines NASA's L-band radar and ISRO's S-band radar. This milestone concludes a decade-long bilateral effort and marks the beginning of a transformative phase in global geospatial monitoring.

Key Features of NISAR

Feature	Detail
Weight	2.8 tonnes
Orbit	Sun-synchronous (dawn-dusk), repeats every 12 days
Radar Bands	L-band (NASA), S-band (ISRO)
Revisit Capability	High-frequency monitoring under similar lighting conditions
Spatial Resolution	Detects changes of a few centimetres, even through clouds and vegetation
Data Access	Freely accessible; will enable global use
Launch Vehicle	GSLV Mk II (GSLV-F16) from Sriharikota

Scientific and Strategic Importance

➢ **Multidisciplinary Data Applications**

NISAR's broad science agenda includes:

- Monitoring ground deformation, glacier flow, biomass.
- Mapping urban subsidence, mangrove extent, crop-soil interaction, and sea ice dynamics.
- Studying tectonic activity and calving of polar ice shelves.
- Supporting Sendai Framework for Disaster Risk Reduction.
- Providing critical inputs for climate models (IPCC) and sustainable land use planning.

➢ **Disaster Management**

- Helps in early detection of earthquakes, landslides, and flood-prone subsidence zones.
- Near real-time data release could guide evacuation and resource allocation.

➢ **Boost to Indigenous Capacity**

- Development of S-band radar required:
  - High precision RF electronics
  - Thermal stability systems
  - High data throughput

This enhances India's indigenous capability in radar payloads and Earth observation.

Diplomatic and Technological Significance

Space Diplomacy

- Symbolises trust-based collaboration between India and the U.S.
- Positions India as a credible partner for high-value, joint international missions.
- Boosts soft power and enhances India's global space image.

Technology Transfer and Challenges

- NASA led several key design reviews.
- Some critical elements (e.g., Ka-band downlink, flight software, 12m reflector) were imported.
- Indicates India's need to:
  - Deepen expertise in advanced materials, deep-space communication, and systems engineering.
  - Engage earlier in scientific agenda-setting of global missions.

Way Forward

1. **Invest in Indigenous Capability**
   - Develop local alternatives for imported components.
   - Strengthen public-private collaboration in radar and satellite engineering.
2. **Foster Equal Partnerships**
   - Increase Indian leadership in design, review, and scientific framing of joint missions.
   - Build institutions capable of managing systems integration at NASA/ESA scale.
3. **Data Democratization**
   - Make analysis-ready products easily accessible to researchers, state agencies, and private sector.
   - Promote open-data ecosystems for climate-tech innovation.

New phase

NISAR has capped a decade-long bilateral effort of NASA and ISRO

The GSLV-F16 mission lifted off from Sriharikota on July 30, placing the NASA ISRO Synthetic Aperture Radar (NISAR) satellite into a sun synchronous orbit. The ascent capped a decade-long bilateral effort and opened a new phase in global earth observation cooperation. NISAR is a 2.8-tonne observatory that combines a NASA-built L-band radar with an ISRO-made S-band radar – also a first. They allow NISAR to detect surface changes measuring only a few centimetres, even through clouds and vegetation. NISAR will supply freely accessible data on ground deformation, glacier flow, biomass, land use changes, and sea ice dynamics. As its dawn-dusk orbit repeats every 12 days, its radars will be able to revisit the same point under nearly identical lighting conditions. This geometry, coupled with a duty cycle exceeding 50% in the L-band, has been designed to yield closely spaced time series observations that can quantify geological processes. Indeed, its various engineering firsts lead up to NISAR's unusually broad science agenda: map mangrove extent, urban subsidence, crop-soil interactions, and calving rates in polar ice shelves in a single orbital cycle. Its data could help support the Sendai Framework on reducing disaster risk and refine IPCC models.

For ISRO, flying a flagship payload on the GSLV Mk II rocket is notable for a vehicle once dubbed "naughty boy" for its early-career setbacks. The ISRO-NASA partnership would also have eased technology transfer between the two countries. Developing the S-band radar would have demanded tighter tolerances in radiofrequency electronics, thermal stability, and data throughput than previous Indian satellites. From a diplomatic standpoint, the launch confirms that India can be trusted with high-value hardware and demanding integration schedules, although it is still learning to shape joint missions on equal terms. The 12-metre reflector, the Ka band downlink, and much of the flight software stack were imported, and the key design reviews were led by NASA. Achieving parity will require larger domestic investments in advanced materials, deep-space communications, and systems engineering plus earlier Indian involvement in framing the scientific agenda of future multilateral missions. NISAR's data downlink rate also presents a challenge. ISRO must expand its Ka-band ground network, automate cloud-based processing, and release analysis-ready products within hours if state agencies are to make timely use of the data. Sustaining the time-wise data will also depend on authorising follow-on SAR spacecraft before 2030 and finalising data-sharing rules that encourage private analytics while protecting sensitive scenes. Addressing these gaps will determine how fully NISAR's potential is realised in India.

4. **Strengthen Disaster Resilience**
    - Integrate NISAR data into disaster early warning systems.
    - Train local administrations and disaster management teams to leverage satellite analytics.
5. **Operational and Infrastructure Challenges**

Challenge	Required Action
Data Downlink & Processing	Expand Ka-band ground network, automate cloud-based processing, provide analysis-ready data within hours.
Data Sensitivity & Sharing	Finalise policies that enable private sector analytics while safeguarding sensitive areas.
Sustainability	Approve follow-on SAR satellites before 2030 to ensure temporal continuity.

Conclusion

NISAR is not merely a technological achievement — it is a symbol of strategic trust, scientific progress, and a testbed for future multilateral missions. While India has made key contributions, full parity will require long-term investments in indigenous R&D, systems engineering, and policy reforms. Realising NISAR's full potential depends on how India translates global cooperation into national capability and public benefit.

UPSCPrelimsPractice Question

Ques:With reference to the NISAR satellite, consider the following statements:

1. NISAR uses both L-band and S-band radar systems.

2. It is designed to monitor changes in Earth's surface with centimeter-level accuracy.

3. The satellite has been developed solely by ISRO.

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: A

The NEP 2020 marks a structural transformation in India's educational system, especially in Early Childhood Care and Education (ECCE). It aims to bridge the inequity caused by the earlier lack of preschool education in government schools.

Transforming early childhood care and education

The National Education Policy 2020 (NEP) has ushered in transformative changes in the educational landscape of India, particularly in the field of Early Childhood Care and Education (ECCE). While private schools have had nursery classes for long, government schools have historically admitted children only from Class one, thus sowing the seeds of inequity even before the start of schooling. By paving the way for the opening of preschool classes for 3-6 year olds in government schools – previously catered to only by Anganwadis in the public sector – the NEP has initiated a long-overdue structural transformation towards equity.

There are three key structural shifts in the ECCE sector, driven by the NEP, with each one unfolding at a different pace. Understanding these shifts and preparing for them is crucial in ensuring quality early childhood care and education for the nation's children.

An expansion

First, the expansion of the ECCE sector. A significant but often underappreciated shift is the anticipated growth of the ECCE sector by 2030, the target year for its universalisation. For decades, the public sector's ECCE infrastructure had stagnated at approximately 14 lakh Anganwadi centres. This is now set to expand significantly. With the NEP paving the way for three preschool classes (Balvatika-1,2,3) in government schools, the number of public ECCE classes will increase significantly. This will have substantial implications for personnel management, including the financing, recruitment, training and deployment of skilled ECCE providers.

The Ministry of Education has already begun allocating budgets under the Samagra Shiksha scheme for the ECCE. Many States and Union Territories (UTs) have begun utilising this provision to introduce preschool classes in government schools. But, some have not begun to use this provision, while others have under-utilised it with some training or material being added, without starting additional classes. The extent and manner of this utilisation needs to be tracked.

Jatin Goyal

is Director (Education), Union Territory of Dadra Nagar Haveli and Daman and Diu, and Joint Secretary (Finance). He was Director (Women and Child Development) earlier

Understanding the key structural shifts driven by National Education Policy 2020 and preparing for them are essential

Migration from anganwadis

The second shift is the growing emphasis on education when compared to other ECCE services such as health and nutrition. This trend is already visible in the Union Territory of Dadra and Nagar Haveli and Daman and Diu, where the Union Territory has introduced a preschool class in all its primary schools, prioritising the admission of 4-6 year olds. This has resulted in a substantial migration of this age group from Anganwadis to schools.

Data shows that parents have overwhelmingly preferred preschool classes in schools over Anganwadis, when given both options. This migration is largely driven by the perception that schools offer better educational opportunities. As a result, the traditional image of Anganwadis as vibrant centres filled with toddlers is now at risk as more government schools open preschool classes, and children in the 3-6 year age group move out of Anganwadis to schools.

The Anganwadi system must adapt by emphasising education as a part of its ECCE services. The Ministry of Women and Child Development's 'Poshan bhi Padhai bhi' initiative is a timely step. However, its success depends on tangible implementation at the ground level, targeting an increase in measurable indicators such as the time spent by an Anganwadi worker on educational activities.

While schools cater to this demand, they need to be aware of the risks of excessive 'schoolification' of pre-schooling. They need to retain play at the centre of this education, in order to focus on the breadth of skills, instead of focusing on the narrower skills of reading and writing in the pre-school classes.

The critical role of home visits

Third, the potentially most transformative shift is the possible reorientation of the Anganwadi system to focus on children aged 0-3 years through home visits, rather than focusing on 3-6 year olds attending the centres. Research, such as the 'Perry Preschool at 50' study in the United States and the Yale university study in Odisha done in collaboration with Pratham, highlights the critical role of home visits in early childhood development programmes.

In India, policymakers such as V. K. Paul (Member, NITI Aayog) and N.C. Saxena (IAS, retired) have long advocated focusing on 0-3-year olds within the Integrated Child Development Services (ICDS) framework, given the disproportionate developmental benefits during this stage. While the Prime Minister's Overarching Scheme For Holistic Nourishment (POSHAN) Abhiyan has emphasised the importance of the first 1,000 days of life, implementation challenges persist. Overburdened Anganwadi workers naturally focus on 3-6 year olds who are physically present at the centres, leaving limited scope for individualised services to 0-3 year olds through home visits.

If government schools assume responsibility over 3-6 year-olds, we have a unique opportunity where the Anganwadi system could redirect its focus towards 0-3 year olds, along with the care of pregnant and lactating mothers, through more intensive home visits.

This shift, if realised, would mark a truly transformative change in India's ECCE framework. The seeds for this transition have already been sown in the NEP 2020.

The views expressed are personal

Three Key Structural Shifts in ECCE under NEP 2020

1. Expansion of Public ECCE Infrastructure

- Earlier, ECCE in public sector was limited to ~14 lakh Anganwadi Centres.
- NEP enables the introduction of **Balvatika-1, 2, 3 (ages 3–6)** in government schools.
- **Implications**:

- Large-scale recruitment, training, and funding under schemes like *SamagraShiksha*.
- Many States/UTs have started implementation; others lag behind.

2. Migration from Anganwadis to Schools

- ECCE is shifting focus from **nutrition and care** to **education**.
- Parents prefer schools for preschool due to perceived better educational outcomes.
- **Risks**:
  - Decline in the role of Anganwadis.
  - Rising "schoolification" — early push towards rote learning.
- **Suggested balance**: Education through **play-based, holistic** methods.

3. Reorientation of Anganwadis toward 0–3 Years

- Reimagining Anganwadis as providers of home-based care for **0–3 year-olds**.
- Supported by global and Indian research (e.g., Yale-Pratham study).
- **Benefits**:
  - Leverages the critical window of early brain development.
  - Enables targeted care for pregnant/lactating mothers.
- **Challenges**:
  - Current workload limits the capacity for effective home visits.
  - Requires administrative and structural support.

Policy Initiatives

- *"PoshanbhiPadhaibhi"* by MWCD integrates nutrition with foundational learning.
- *POSHAN Abhiyan* and NEP emphasize the first 1,000 days of life.

Conclusion

NEP 2020 lays the groundwork for **a three-tier ECCE system**:

- **Schools** to handle 3–6 year-olds with education focus.
- **Anganwadis** to shift towards 0–3 year-olds with home-based care.
- **Integrated training, funding, and monitoring** systems to support both.

The challenge lies in effective implementation, balancing education with care, and ensuring equity in access and quality across all socio-economic strata.

UPSC Mains Practice Question

Ques: Discuss the implications of introducing Balvatika (preschool classes) in government schools for the existing Anganwadi ecosystem. Suggest measures to ensure complementary functioning of both systems.

Page 10:GS 3 : Environment

As the global community intensifies its efforts to transition towards clean energy, the limitations of existing green technologies are coming into sharper focus. While silicon photovoltaics and green hydrogen have laid the foundation for decarbonisation, rising CO_2 levels, land constraints, and growing energy demand highlight the pressing need for more **efficient, scalable, and innovative technologies** to achieve climate goals and energy self-sufficiency. The world can no longer rely solely on legacy solutions but must diversify and deepen its clean energy toolbox.

Why the world needs better green technologies

As nations grapple with land constraints, geopolitical conflicts, rising carbon dioxide levels, and the urgency of energy self-sufficiency, the imperative grows not just to deploy more renewable fuels but to invest in smarter, more efficient, and more diverse energy innovation

FULL CONTEXT

Chinnakonda S. Gopinath

As the global demand for sustainable energy soars and countries strive to meet climate commitments, silicon photovoltaics have emerged as the most widely adopted solution, transforming landscapes from urban rooftops to sprawling rural installations. Yet as the energy transition accelerates, a critical question surfaces: are conventional silicon panels, despite their proven track record, truly the most effective path forward, or is it time to embrace next-generation technologies promising higher efficiencies and lower environmental footprints?

The landscape is further complicated by new demands such as the widespread production of green hydrogen, touted as a key enabler of deep decarbonisation. Today's solar panel technologies not only affect the quantity of clean electricity generated but directly shape the potential and credibility of downstream solutions like green hydrogen, green ammonia, and green methanol. As nations grapple with land constraints, rising carbon dioxide levels, and the urgency of energy self-sufficiency, the imperative grows not just to deploy more renewables but to invest in smarter, more efficient, and more diverse energy innovation.

Silicon photovoltaics

The widely used solar panels, or silicon photovoltaics, were originally invented by researchers at Bell Laboratories in the U.S. in 1954 and first deployed on satellites so they could generate power in space. From there, they slowly entered other industries over time until, in the last few decades, their adoption exploded worldwide.

Current solar panels generally have a reported efficiency of around 18-21% and an in-field efficiency of 15-18%. In the last 15 years or so, around 80% of the supply of solar panels has been from China. In India, the production of silicon solar cells has reached around 6 GW and is expected to increase further in the coming years.

At this juncture, as the world prepares to invest more in solar power even as the ability to harness it has become a strategic ability, an important question has arisen: should we continue to adopt silicon solar panels even though superior, more efficient technologies have become available?

The best research-based solar cell efficiency chart has been regularly updated from 1976 for a broad range of photovoltaic technologies. There are many, with the maximum efficiency of around 47% being achieved by single junction gallium arsenide thin-film technology. Many of these photovoltaic setups have already been demonstrated at a high level and are ready to be commercialised.

Because silicon solar panels' efficiency is below 18%, they need to have greater area exposed to the sun than panels of higher efficiency. When the efficiency doubles, the required collection area halves.

Land area is becoming a rarer commodity: countries are urbanising rapidly even as increasing environmental consciousness, driven by the pressures of climate mitigation, render green spaces too valuable to be diverted for solar power plants.

Silicon photovoltaics are also slow runners in the world's race to catch up with its own growing energy demand.

Need for speed: A drone view of solar panels and the National Thermal Power Corporation power plant in Solapur, Maharashtra on March 2. REUTERS

While 4.45 TWh of renewable energy generation capacity had been installed until the end of 2024, the CO2 concentration in the atmosphere has continued to increase – from 350 ppm in 1990 to around 425 ppm in 2025 – implying energy demand is only increasing faster.

Costs of green hydrogen

The widespread adoption of silicon photovoltaics also has implications for the 'greenness' of green hydrogen, among other fuels. Hydrogen as a fuel can be produced by using a large electric current to break apart water molecules (H_2O). If this current comes from a renewable energy source, the resulting hydrogen is called green hydrogen.

Green hydrogen is environment friendly and doesn't emit any greenhouse gases when it is combusted. However, the current electrolysis technologies available consume more energy to produce green hydrogen than its energy value in use. The yet other costs hydrogen imposes include that of its storage and transportation, which are very difficult because of the element's extremely low density, which causes it to leak easily.

As alternatives, experts have proposed infusing the green hydrogen into molecules like green ammonia (NH_3) and green methanol (CH_3OH), which are easier to transport, before extracting the green hydrogen at the destination.

However, using green hydrogen to produce green ammonia or methanol by conventional catalysis methods, followed by stripping hydrogen out of those molecules, also requires a significant amount of energy.

Thus, at the first step itself – the act of generating renewable energy from silicon photovoltaics – there is a compromise on efficiency (that is, by not adopting more efficient solar power technologies). And in the subsequent steps, energy is consumed for electrolysis, storage or conversation, transport, and finally utilisation. As a result, the greenness of green hydrogen should not be taken at face value.

CO2 recycling

One alternative is to produce green methanol or ammonia directly from water, sunlight, and carbon dioxide or nitrogen, respectively. The plants in our gardens are already doing this everyday in a process called photosynthesis. Similarly, some scientists are working on a process called artificial photosynthesis, or APS. Currently, while APS technologies are restricted to the lab bench, some bright spots indicate they have a promising future.

As the world's various net-zero targets come into view, it's important to develop and perfect diverse technologies, rather than just a few, so that it has the best shot of achieving carbon-neutral economies.

Europe is already working on 'Renewable Fuels of Non-Biological Origin', or RFNBO, which is the production of fuels with renewable energy and resources and without biomass. India should also work on such futuristic solutions to become energy independent, from its current position of importing nearly 85% of different forms of energy resources (including oil, coal, and natural gas) from other countries.

As geopolitical conflicts proliferate and the supply of energy is increasingly disrupted, achieving energy self-sufficiency is paramount. As such the Government of India should consider spending more on research, innovation, and technology development with help from the private sector.

Prevention is better than cure. Spending ₹1 crore on preventing pollution today will save us from having to spend several crore in the future on damage control. While green hydrogen and silicon photovoltaics are good technologies, the world already needs better, that is, more efficient, more practicable, more economic, and more diverse solutions.

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THE GIST

- The widely used solar panels, or silicon photovoltaics, were originally invented by researchers at Bell Laboratories in the U.S. in 1954.
- The widespread adoption of silicon photovoltaics also has implications for the 'greenness' of green hydrogen, among other fuels.
- Europe is already working on 'Renewable Fuels of Non-Biological Origin', or RFNBO, which is the production of fuels with renewable energy and resources and without biomass.

The Case for Next-Generation Green Technologies:

1. Silicon Photovoltaics – Progress with Limitations:

- **Dominant but Inefficient:** Silicon solar panels, though widely adopted since their invention in 1954, have plateaued at around **15–21% efficiency**, requiring **larger land areas** for energy generation.
- **Land Constraints:** As **urbanisation and ecological conservation** rise, using vast tracts for low-efficiency solar farms becomes unsustainable.
- **Supply Dependence:** Over **80% of global solar panels come from China**, raising questions of **energy security and strategic autonomy** for countries like India.

2. Green Hydrogen – Not Yet Truly Green:

- **Energy Intensive:** Electrolysis consumes more energy than the hydrogen it produces, especially when powered by inefficient solar panels.
- **Logistical Challenges:** Hydrogen's **low density and high diffusivity** make **storage and transport difficult and costly**, reducing its real-world viability.
- **Indirect Conversion Issues:** Producing and transporting green hydrogen via **green ammonia or methanol** adds further energy losses, weakening its 'green' credentials.

3. Technological Innovations Needed:

- **Higher Efficiency Cells:** Alternatives like **gallium arsenide thin-film solar cells** have demonstrated up to **47% efficiency**, offering a clear path forward if commercialised at scale.
- **Artificial Photosynthesis:** Mimicking natural processes to generate fuels directly from **CO_2, H_2O, and sunlight** shows promise, though still largely at the lab stage.
- **RFNBO (Renewable Fuels of Non-Biological Origin):** Europe's work on this front shows a global shift toward cleaner, **non-biomass-based fuels** — a direction India must actively explore.

Implications for India:

- **Energy Security:** With **~85% of energy resources imported**, India's energy transition must prioritise **self-sufficiency** through **domestic innovation and manufacturing**.
- **Climate Goals:** To meet its net-zero commitments, India must avoid technological lock-ins and invest in **flexible, high-impact clean technologies**.
- **Policy Support & R&D:** Greater public investment in **research, industry partnerships, and pilot projects** is essential. Policies should also support rapid **scaling and adoption** of advanced technologies.

- **Private Sector Involvement:** The clean tech transition cannot be state-driven alone. **Startup ecosystems, academic institutions, and industries** must collaborate to close the innovation gap.

Conclusion:

While silicon photovoltaics and green hydrogen have contributed significantly to the renewable energy revolution, they are **not sufficient to meet future energy and climate demands**. The road to sustainable development requires **diverse, high-efficiency, and economically viable green technologies**. India, with its vast energy needs and technological capacity, stands at a pivotal moment. A proactive focus on **research, innovation, and strategic investments** will not only help achieve climate targets but also ensure energy sovereignty in an increasingly uncertain global landscape.

UPSC MainsPractice Question

Ques: "The greenness of green fuels should not be taken at face value."Explain the statement in light of the full life cycle of green hydrogen and its derivatives. What policy measures can ensure truly sustainable fuel production?**(250 words)**

Page : 08 Editorial Analysis

Nudges from the Court, silence from the commission

Sanjay Hegde

is a Senior Advocate designated by the Supreme Court of India

The Special Intensive Revision of Bihar's electoral rolls is a turning point for citizens, civil society and Parliament — universal franchise must not be undone in the name of 'vigilance'

The Supreme Court of India speaks in questions. Sometimes softly, sometimes sharply. In its hearings on the Special Intensive Revision (SIR) conducted by the Election Commission of India (ECI) in Bihar, the Court has asked what many in the country were thinking: Why was there a sudden need for fresh documentation? Why now? And what happens to the millions who cannot comply? Yet, the Court got a response from the ECI that did not address the underlying concern. The ECI insists that this is a technical revision. But the reality on the ground, and the implications of its policy, tell a very different story.

The SIR in Bihar requires every voter to submit new proof of citizenship – within one month – or face removal from the voter list. The stated intent is accuracy. But the effect is exclusion. This is not administrative housekeeping. It is an ideological shift in the treatment of citizens: from presumed inclusion to presumptive exclusion. This shift marks a deep departure from the constitutional vision of universal adult franchise.

Turning away from constitutional promises

When India became a republic, it did something radical: it gave the vote to all adults, regardless of literacy, income, caste or gender. The Constituent Assembly debated this extensively. Many Members doubted whether the country was ready. But Dr. B.R. Ambedkar, among others, insisted that political equality must come first as a prelude to achieving social and economic equality.

That principle was translated into practice by the first Chief Election Commissioner (CEC), Sukumar Sen (March 21, 1950-December 18, 1958). Faced with 173 million potential voters, most of them illiterate, he innovated. He introduced voting symbols and designed processes that made participation easy, not difficult. India's first elections were not perfect, but they were inclusive. In contrast, the revision in Bihar by India's 26th CEC, Gyanesh Kumar, is the opposite. By demanding rare documents such as birth certificates and passports – held by only a small fraction of the population, the ECI is setting a bar that millions cannot meet. Aadhaar cards and ration cards, widely held by the poor, are not accepted. In Bihar, over 65 lakh people may now be at risk of disenfranchisement.

This is not an isolated event. We saw a similar exercise in Assam. The classification of lungi-wearing, Bengali-speaking Muslim inhabitants as "D-voters" (doubtful voters) by the officers of the Election Commission, turned thousands into stateless persons. Many found themselves pleading before foreigners' tribunals, facing hostile bureaucracies and with no real opportunity to prove citizenship. With tribunals declaring them as foreigners and with no country ready to accept them, many have been just forcibly thrown away across India's borders, as unwanted human detritus.

Bihar is at risk of repeating that mistake. The State is poor, flood-prone, and infrastructurally weak. A rigid document deadline during the monsoon season is not just poor planning. It is a barrier, intentionally or otherwise, for the poor and the marginalised to access the ballot box. The burden of proof has now shifted. Citizens must prove that they belong, rather than the state proving they do not. This reversal may seem technical, but its moral and democratic cost is immense.

Historical lessons and warnings

There are disturbing echoes here of the Jim Crow era in the United States (late 19th century to the mid-20th century), where African-American voters were disenfranchised through literacy tests, poll taxes and administrative obstructions. The veneer was legal; the purpose was political. It took federal intervention and landmark rulings such as *Reynolds vs Sims* (1964) and the Voting Rights Act 1965 to restore the right to vote as a true universal right.

India has similar legal protections. Supreme Court rulings such as *Md. Rahim Ali vs State of Assam* (2024) and *Lal Babu Hussein vs Electoral Registration Officer* (1995) have made it clear: disenfranchisement without due process is unconstitutional. Citizenship cannot be revoked or denied arbitrarily. Yet, here we are again – requiring the most vulnerable to navigate a process stacked against them.

The Court, during its hearing, asked pointed questions about the humanitarian consequences of the ECI's actions. But the ECI's response has been administrative, not empathetic. It continues to insist on timelines and technicalities, without addressing the social reality.

The ECI's constitutional mandate is not merely to maintain clean lists. It is to ensure free and fair elections. This means enabling the right to vote – not erecting barriers to it. In this, the ECI is failing. And the Court, while alert, must decide whether it will continue nudging it or start directing it. A soft caution is not enough when millions face disenfranchisement.

If this continues unchecked, we are entering dangerous territory. Voting could become a privilege of the documented middle class – urban, salaried, tech-savvy –while the poor, the displaced, and the undocumented are left behind. We risk creating two Indias: one with voting rights and one without. Political parties will then cater only to those who count – literally. Those without votes will be ignored in policymaking, welfare and justice. We are not just talking about voter lists here. We are talking about power – Who gets it. Who keeps it. And who is kept out of it.

A quiet Emergency

There is no need for tanks on the street to declare an emergency. A quiet one is already here. It arrives through missing names, unmet deadlines and unanswered questions. It arrives when state machinery treats citizenship as a favour, not a right. This moment calls for resistance – not just from the Court, but from citizens, civil society and Parliament. We must reclaim the principle that the right to vote belongs to the people, not the paperwork. *Sadak*, *samaj* and Supreme Court must loudly proclaim that Mother India belongs to all her children and that she does not discriminate on a religious or economic basis when her protection is sought.

As historian Ornit Shani reminds us in the book, *How India Became Democratic*, universal franchise was not an administrative accident, it was an imaginative leap. Bureaucrats and citizens together transformed a colonial mindset into a democratic one. That achievement must not be undone in the name of vigilance.

The ECI must remember that elections are not entrance examinations. They are acts of belonging. And in a democracy, you do not have to prove you belong. You vote because you are a citizen. And you are a citizen because the Constitution says so, not because you can find your birth certificate.

The vote is not a mere document. It is a declaration: that we are all equal. That one man has one vote and one vote has one value. That even if I have one vote out of 1.4 billion votes, it is an equal share in the republic, in which I and every Indian are equal participants. That right of ownership and participation is what is now at stake.

GS. Paper 02 Indian Polity

UPSC Mains Practice Question: Discuss the role of the Election Commission of India (ECI) in balancing administrative efficiency with democratic inclusivity. Should the ECI's recent voter-list revision initiatives be seen as protecting electoral integrity or risking voter disenfranchisement? **(250 words)**

Context :

In a democracy, the right to vote is not merely an administrative privilege but a foundational pillar of citizenship and political equality. The recent Special Intensive Revision (SIR) of electoral rolls in Bihar—requiring citizens to submit fresh proof of citizenship under a tight deadline—has raised critical questions about inclusivity, constitutional morality, and institutional accountability.

- While the Supreme Court has raised humanitarian concerns, the Election Commission of India (ECI) remains unyielding in its procedural stance. This tug-of-war reveals deeper anxieties about voter exclusion, bureaucratic overreach, and the erosion of India's democratic ethos.

Electoral Roll Revision: Administrative Need or Ideological Shift?

- The ECI's move in Bihar ostensibly seeks to "clean" voter lists by asking citizens to furnish documents such as birth certificates or passports—papers held by only a fraction of India's largely poor, rural population. This departs from the original presumption of inclusion in India's electoral democracy to one of presumptive exclusion. With Aadhaar and ration cards disqualified as valid proof, over 65 lakh voters in Bihar risk disenfranchisement.
- The timing and methodology—during monsoons, with only a month's notice—have raised suspicions about intent. As the Supreme Court observed, the exercise appears less about efficiency and more about erecting bureaucratic barriers, particularly for the most marginalised.

Historical Parallels and Constitutional Promises

- India's commitment to universal adult franchise was revolutionary for a newly independent, largely illiterate nation. The first Chief Election Commissioner, Sukumar Sen, created inclusive mechanisms—symbols for illiterate voters, door-to-door enumerations—to empower participation. The contrast with today's restrictive practices is stark.

- The editorial rightly draws parallels with the Jim Crow era in the U.S., when disenfranchisement was institutionalised through literacy tests and poll taxes. India, too, risks descending into a similar two-tiered democracy—where the urban, tech-savvy middle class votes, while the rural poor, migrants, and minorities are denied this basic right due to documentation hurdles.

Legal Safeguards and Institutional Failure

- Indian jurisprudence has robustly defended voting rights. Cases like Lal Babu Hussein vs Electoral Registration Officer (1995) and Md. Rahim Ali vs State of Assam (2024) have held that disenfranchisement without due process is unconstitutional. Yet, the ECI's silence on humanitarian concerns and its overemphasis on technicalities suggest a dangerous institutional inertia.
- The Supreme Court's role, while proactive in asking the right questions, remains limited to gentle nudges. The editorial poses a crucial dilemma: Should the Court now go beyond observation and assertively direct the ECI to act within constitutional limits?

Consequences of Exclusion: From Lists to Power

- Voter lists are not merely administrative records; they determine who counts in policymaking. If large sections—especially religious, linguistic, or economic minorities—are left out, political parties will ignore them. This reduces democratic participation to a narrow club of the documented, undermining the inclusive spirit of the Constitution.
- Unchecked, this trend could pave the way for a quiet Emergency, where no constitutional suspension is declared, but rights are curtailed through omissions, technicalities, and silence.

Conclusion

The Bihar voter list revision is not just about paperwork. It is a test of India's democratic conscience—whether it values its most vulnerable citizens as equal participants or filters them out in the name of vigilance. The ECI must reclaim its constitutional role: not just as a gatekeeper, but as a guarantor of electoral justice. The Supreme Court, civil society, and citizens must rise in defence of the idea that the vote is not earned through documentation but secured by citizenship—a status conferred not by proof, but by birth and belonging in the Republic of India.