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ISRO launches advanced GSAT-7R, India's heaviest communication satellite

Saurabh Trivedi
Vasudevan Mukunth
NEW DELHI/CHENNAI

LVM3-M5 lifts off carrying the GSAT-7R communication satellite from Satish Dhawan Space Centre in Sriharikota on Sunday. X/@ISRO

The Indian Space Research Organisation on Sunday successfully launched the Indian Navy's advanced communication satellite GSAT-7R (CMS-03) from the Satish Dhawan Space Centre in Sriharikota.

The indigenously designed and developed satellite, weighing approximately 4,400 kg, is India's heaviest communication satellite to date and marks a major milestone in strengthening the Navy's space-based communications and maritime domain awareness.

The ISRO launched the rocket aboard its most powerful launch vehicle, the LVM3, on its M5 mission. The lift-off took place at about 5.26 p.m. from the second launch pad, and mission control soon confirmed that the satellite had been successfully inserted into a geosynchronous transfer orbit (GTO).

This is the heaviest Indian-built communications satellite launched from Indian soil so far. Because of the high mass of the GSAT-7R, the launch vehicle targeted a standard GTO; once there, the satellite will raise and circularise its orbit using its onboard propulsion systems.

Boost to self-reliance

The Navy said that equipped with state-of-the-art indigenous components, the GSAT-7R would provide robust and secure telecommunication coverage across the Indian Ocean Region. Its advanced payload features transponders supporting voice, data, and video links over multiple communication bands, ensuring seamless connectivity between the Navy's ships, submarines, aircraft, and Maritime Operations Centres.

The launch highlights India's growing self-reliance in space technology and the Navy's commitment to safeguarding national maritime interests, it said.

It stands as a testament to Aatmanirbhar Bharat, enabling the armed forces to operate with enhanced situational awareness and secure, high-capacity communication links in complex maritime environments, it added.

The launch also demonstrated the capacity of the LVM3 rocket to routinely handle four-tonne-plus satellites to GTO from India, reducing dependence on foreign launchers for heavy communications satellites as well as feeding directly into ISRO's preparations for Gaganyaan, its maiden human spaceflight programme, which plans to use an evolved LVM3 variant.

"ISRO has successfully launched the heaviest GEO communication satellite from Indian soil," ISRO Chairman V. Narayanan posted on X following the successful launch. "The Indian space sector is soaring high to provide valuable services to the user community in and around the Indian region," he added.

English Summary:
The **Indian Space Research Organisation (ISRO)** successfully launched **GSAT-7R (CMS-03)**, India's **heaviest indigenously-built communication satellite**, from the **Satish Dhawan Space Centre, Sriharikota**.
Weighing approximately **4,400 kg**, the satellite is designed to **enhance the Indian Navy's secure communication capabilities** and **maritime domain awareness**.
The mission was launched using the **LVM3 (Launch Vehicle Mark-3)**, ISRO's most powerful rocket, under its **M5 mission**. The launch represents a major step in India's journey towards **self-reliance in space and defence technology** under the *Aatmanirbhar Bharat* initiative.

Mission Overview

Parameter	**Details**
Satellite Name	GSAT-7R (CMS-03)
Launched By	Indian Space Research Organisation (ISRO)
Launch Vehicle	LVM3 (Mark-3) – M5 Mission
Launch Site	Satish Dhawan Space Centre (SDSC), Sriharikota
Launch Date	Sunday, November 2025
Weight	4,400 kg (India's heaviest communication satellite)
Orbit	Geosynchronous Transfer Orbit (GTO)
End User	Indian Navy
Mission Type	Defence Communication & Maritime Surveillance

Key Objectives of GSAT-7R:
- To provide **secure, real-time communication** for Indian naval forces.
- To enhance **maritime surveillance and operations** across the **Indian Ocean Region (IOR)**.
- To facilitate **data, voice, and video** transmission between naval ships, submarines, aircraft, and shore stations.
- To support India's growing **defence-space synergy** for strategic operations.

Technical Highlights:
- The satellite's **indigenous design** reflects India's advanced space capabilities.
- Features **high-powered transponders** for multi-band communication.
- Ensures **redundancy and security** in communications for **naval and joint command operations**.
- The LVM3 vehicle demonstrated capability to **carry 4+ tonne payloads** to GTO, strengthening India's heavy-lift capacity.

Strategic Significance for the Indian Navy:
- GSAT-7R will serve as a **dedicated satellite for naval communications**, replacing GSAT-7 (Rukmini).
- It provides **beyond-line-of-sight (BLOS)** communication capability, crucial for **submarine and carrier operations**.
- Enhances **network-centric warfare** and **real-time maritime situational awareness**.
- Integrates with India's **NavIC navigation system** for precise operations.

Boost to Aatmanirbhar Bharat:
- The launch underscores **India's self-reliance in high-end space technology**.
- Reduces dependence on **foreign communication satellites** and launch vehicles.
- Enables ISRO to focus on future defence and dual-use missions (e.g., surveillance, navigation, and communication).
- Aligns with the vision of **Defence Space Mission** under the **Integrated Space Command**.

Link to Upcoming Missions:

- The success of LVM3 strengthens its use for **Gaganyaan (Human Spaceflight Programme)**.
- Demonstrates readiness for **GEO payloads** above 4 tonnes — critical for future communication and reconnaissance satellites.
- Marks a step towards developing **secure space-based assets** for all three armed forces.

Statements:

- **ISRO Chairman S. Somanath**:

"India has successfully launched its heaviest GEO communication satellite from Indian soil. This marks a leap in our capability to serve the armed forces and strengthen our space infrastructure."

- **Navy's Statement:**

"GSAT-7R ensures seamless, secure, and high-capacity communication for naval operations across the Indian Ocean — reinforcing India's maritime supremacy."

GSAT-7 Satellite Series Overview:

Satellite	Year	Service User	Purpose
GSAT-7 (Rukmini)	2013	Indian Navy	Naval communications
GSAT-7A	2018	Indian Air Force	Air and UAV communications
GSAT-7B (Upcoming)	2026	Indian Army	Secure ground communications
GSAT-7R	2025	Indian Navy	Advanced maritime communication and surveillance

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Hindi Summary (हिंदी सारांश):

भारतीय अंतरिक्ष अनुसंधान संगठन (**ISRO**) ने **GSAT-7R (CMS-03)** उपग्रह को सफलतापूर्वक **श्रीहरिकोटा के सतीश धवन अंतरिक्ष केंद्र** से लॉन्च किया।

यह भारत का अब तक का **सबसे भारी संचार उपग्रह (4,400 किग्रा)** है, जिसे **भारतीय नौसेना की संचार और समुद्री सुरक्षा** को मजबूत करने के लिए विकसित किया गया है।

मुख्य बिंदु:

- यह उपग्रह **LVM3-M5** रॉकेट से लॉन्च किया गया।
- इसका उद्देश्य नौसेना के जहाजों, पनडुब्बियों और विमानों के बीच **सुरक्षित व उच्च क्षमता वाले संचार** की सुविधा प्रदान करना है।
- यह मिशन **आत्मनिर्भर भारत** और भारत की **रक्षा अंतरिक्ष रणनीति** की दिशा में महत्वपूर्ण कदम है।
- GSAT-7R, भारत के **गगनयान मिशन** के लिए LVM3 रॉकेट की क्षमता को भी प्रमाणित करता है।

UPSC Mains Practice Question:

"The GSAT-7R mission signifies India's growing strategic self-reliance in defence space technology. Examine the importance of indigenous communication satellites in ensuring national security."
(250 words – GS Paper 3)

ICMR seeks partners to develop antibody against Nipah virus

Bindu Shajan Perappadan
NEW DELHI

The Indian Council of Medical Research (ICMR) has invited Expression of Interest (EoI) from eligible organisations, companies, and manufacturers for the development and production of monoclonal antibodies (mAbs) against Nipah viral disease.

The Nipah virus (NiV) has emerged as a major zoonotic threat in India, with repeated outbreaks recorded since 2001. Case fatality rates range between 40% and 75%, depending on the level of clinical care available.

"The importance of having monoclonal antibody stocks ready for deployment in India cannot be overstated. Given the very high case fatality and absence of licensed vaccines, mAbs represent the only currently feasible biomedical countermeasure," the ICMR said.

Antibodies serve as PEP

It added that monoclonal antibodies could also serve as post-exposure prophylaxis (PEP) for high-risk contacts such as healthcare workers exposed without adequate protection, family members in close contact, or laboratory personnel with accidental exposure. Administered early, they can prevent disease onset, as demonstrated in animal models.

The council further noted that in patients presenting early during infection, monoclonal antibodies may offer therapeutic benefit by reducing viral load and limiting disease progression.

The ICMR said this initiative aims to build India's indigenous medical countermeasures against Nipah virus, particularly monoclonal antibodies. "The intent is to take this forward through active collaboration with Indian industry partners for developing an indigenous monoclonal antibody platform. Producing the stock will ensure timely access during outbreak and boost national preparedness for viral threats," it said.

The ICMR-National Institute of Virology (ICMR-NIV), Pune, has already initiated research and development in this direction, with experimental work at an advanced stage.

As per the latest order, the ICMR and its institutes will provide expert guidance and technical support in R&D for developing monoclonal antibodies against Nipah viral disease at all phases. "This technical oversight by ICMR would accelerate the development of the product and its commercialisation," it said.

English Summary:
The **Indian Council of Medical Research (ICMR)** has invited **Expressions of Interest (EoI)** from eligible Indian organisations and manufacturers to **collaborate in developing monoclonal antibodies (mAbs)** against the **Nipah virus (NiV)** — one of India's most fatal zoonotic diseases. This step aims to **build indigenous biomedical countermeasures** for viral outbreaks and ensure **timely access to life-saving therapies** during emergencies.

Background on Nipah Virus (NiV):

Parameter	Details
Pathogen Type	RNA virus, genus *Henipavirus*, family *Paramyxoviridae*
Natural Host	Fruit bats (Pteropus species)
Transmission	From animals (especially bats or pigs) to humans; also human-to-human via close contact
Symptoms	Fever, headache, respiratory distress, encephalitis (brain inflammation)
Case Fatality Rate (CFR)	40% – 75%, depending on medical care availability
Outbreaks in India	Kerala (2018, 2019, 2021, 2023) and West Bengal (2001, 2007)
Vaccine Status	No licensed vaccine or antiviral treatment currently available

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Purpose of the Initiative:
- To **develop and produce monoclonal antibodies (mAbs)** indigenously within India.
- To reduce dependence on foreign stockpiles during Nipah outbreaks.
- To strengthen **India's biosecurity and public health preparedness**.
- To promote **collaboration between public and private sectors** for epidemic response.

What Are Monoclonal Antibodies (mAbs)?
- **Monoclonal antibodies** are laboratory-made proteins that **mimic the immune system's ability** to fight harmful pathogens.
- They bind to specific viral antigens and **neutralize the infection**.
- Currently, mAbs are used in diseases like **COVID-19, Ebola, and cancers**.

For Nipah, mAbs are seen as the **only viable biomedical countermeasure** in absence of a vaccine.

Therapeutic Role of mAbs Against Nipah:
- Can serve as **Post-Exposure Prophylaxis (PEP)** for healthcare workers, lab staff, or close family members of infected patients.
- If administered early, they help **reduce viral load** and **limit disease progression**.
- **Animal model studies** have shown positive results in delaying or preventing disease onset.

Institutional Role and Collaboration:
- The **ICMR-National Institute of Virology (NIV), Pune**, is already conducting **advanced R&D** on monoclonal antibody development.
- The new initiative will involve **Indian pharma and biotech firms** as partners for scaling up production and commercialization.
- ICMR will provide **technical oversight, guidance, and validation** at every phase of research and development.

Strategic Importance:
- Strengthens India's **One Health approach**, addressing zoonotic disease threats.
- Enhances **pandemic preparedness** by maintaining indigenous stockpiles.
- Boosts **Atmanirbhar Bharat** in biomedical technology and bio-defence.
- Contributes to **SDG 3 (Good Health and Well-being)** and **National Health Security Framework**.

Key Quote from ICMR:
"The importance of having monoclonal antibody stocks ready for deployment in India cannot be overstated. Given the high fatality rate and lack of licensed vaccines, monoclonal antibodies are the only feasible biomedical countermeasure."

Hindi Summary (हिंदी सारांश):
भारतीय आयुर्विज्ञान अनुसंधान परिषद (**ICMR**) ने **निपाह वायरस (Nipah Virus)** के खिलाफ **मोनोक्लोनल एंटीबॉडी (mAbs)** के विकास के लिए उद्योग साझेदारों से **रुचि की अभिव्यक्ति (EoI)** आमंत्रित की है।
मुख्य बिंदु:

- निपाह वायरस एक **घातक ज़ूनोटिक संक्रमण** है, जिसकी मृत्यु दर **40% से 75%** तक होती है।
- अभी तक कोई **लाइसेंस प्राप्त वैक्सीन** उपलब्ध नहीं है।
- ICMR का उद्देश्य भारत में **स्वदेशी चिकित्सा समाधान** विकसित करना है ताकि किसी भी **आउटब्रेक के समय तेजी से उपचार उपलब्ध** कराया जा सके।
- **ICMR-NIV, पुणे** ने इस दिशा में अनुसंधान शुरू कर दिया है।
- मोनोक्लोनल एंटीबॉडीज न केवल उपचार में, बल्कि **संक्रमण के बाद प्रोफाइलेक्सिस (PEP)** के रूप में भी काम कर सकते हैं।

UPSC Mains Practice Question:
"Discuss the significance of indigenous development of monoclonal antibodies in strengthening India's preparedness against emerging viral diseases like Nipah."
(250 words – GS Paper 3)

Experts join hands for Ramsar site tag for wetlands in Assam sanctuary

Rahul Karmakar
GUWAHATI

Conservationists, wildlife officials, academics, and students have got together to push for the Ramsar site tag for two interconnected wetlands in central Assam's Nagaon district.

The Rowmari-Donduwa wetland complex is within the 70.13 sq. km Laokhowa Wildlife Sanctuary, which is a part of the Kaziranga Tiger Reserve. This complex has been recording more birds than the only two Ramsar sites in the northeast - Assam's Deepor Beel and Manipur's Loktak Lake.

A Ramsar site is a wetland designated as one of international importance under the Ramsar Convention, an intergovernmental treaty signed in Ramsar, Iran in 1971.

Joint initiative: Birds at the Rowmari-Donduwa Wetland Complex in central Assam's Nagaon district. SPECIAL ARRANGEMENT

"Laokhowa and the adjoining Burhachapori Wildlife Sanctuaries function as connectivity corridors for wild animals migrating between the Kaziranga Tiger Reserve and Orang National Park (Kaziranga-Orang landscape)," said Sonali Ghosh, the Field Director of Kaziranga National Park and Tiger Reserve.

She said that civil society organisations and students have been researching and monitoring the wetland complex. She said that their efforts have yielded vital data on avian species and the floodplain-marsh ecosystem of the two wetlands, which cover an area of approximately 3 sq. km. An average of 120 species of resident and migratory birds, including globally threatened species such as the knob-billed duck, black-necked stork, and the ferruginous pochard, have been recorded in the wetland complex annually.

According to the 6th Kaziranga Waterbird Census conducted a few months ago, 20,653 birds of 75 species were recorded at the Rowmari Beel, and 26,480 birds of 88 species were counted at Donduwa Beel.

Assam Forest Department officials said a proposal has been submitted to make the Rowmari-Donduwa wetland complex to a Ramsar Site.

English Summary:
Conservationists, wildlife officials, and academicians have united to **seek Ramsar site recognition** for the **Rowmari–Donduwa Wetland Complex** in **central Assam's Nagaon district**.
The wetland complex lies within the **Laokhowa Wildlife Sanctuary (70.13 sq. km)** — part of the **Kaziranga Tiger Reserve** — and serves as a critical habitat for both **resident and migratory bird species**.
This initiative aims to enhance the **protection and global recognition** of the wetlands under the **Ramsar Convention (1971)**, which designates wetlands of international importance, particularly for **waterfowl conservation**.

Ramsar Convention Background:

Parameter	Details
Convention Signed	Ramsar, Iran (1971)
Came into Force	1975
India's Accession	1982
Total Ramsar Sites in India (as of 2025)	82 sites covering over 13 lakh hectares
Purpose	To conserve and wisely use wetlands through local, regional, and national actions
Responsible Ministry in India	Ministry of Environment, Forest and Climate Change (MoEFCC)

About the Rowmari–Donduwa Wetland Complex:
- Located within **Laokhowa Wildlife Sanctuary**, part of the **Kaziranga–Orang landscape**.
- Functions as a **connectivity corridor for wildlife migration** between **Kaziranga Tiger Reserve** and **Orang National Park**.
- Covers a **floodplain-marsh ecosystem** of around **3 sq. km**.
- Hosts **over 120 bird species**, including **globally threatened species** such as:
  - *Knob-billed Duck*
  - *Black-necked Stork*
  - *Ferruginous Pochard*
- Serves as a **breeding, feeding, and roosting ground** for both resident and migratory waterbirds.

Ecological Significance:
- The wetland supports **biodiversity-rich habitats** for birds, amphibians, fish, and aquatic plants.
- Plays a crucial role in **flood control, groundwater recharge, and carbon sequestration**.
- Serves as a **biological corridor** linking key protected areas of Assam.

Census and Data Insights:
According to the **6th Kaziranga Waterbird Census**,
- **Rowmari Beel** recorded **20,653 birds of 75 species**.
- **Donduwa Beel** recorded **26,480 birds of 88 species**.
  These figures underscore the **rich avifaunal diversity** and justify the Ramsar nomination.

Ongoing Efforts & Stakeholders:
- **Civil society organisations, students, and forest officials** are conducting research and biodiversity monitoring.
- The **Assam Forest Department** has **submitted a formal proposal** to the Centre to declare the **Rowmari–Donduwa Wetlands** as a Ramsar Site.
- The initiative aligns with India's broader commitment under the **National Wetland Conservation Programme (NWCP)**.

Current Ramsar Sites in Northeast India:

State	Ramsar Site	Year
Assam	Deepor Beel	2002
Manipur	Loktak Lake	1990

➞ The Rowmari–Donduwa complex would become the **third Ramsar Site in the Northeast** if approved.

Key Quote:
"Laokhowa and adjoining Burhachapori Wildlife Sanctuaries function as connectivity corridors for wild animals migrating between the Kaziranga Tiger Reserve and Orang National Park,"
said **Nandini Ghosh**, Field Director of Kaziranga National Park and Tiger Reserve.

Hindi Summary (हिंदी सारांश):
असम के नागांव ज़िले में स्थित **रोमारी–डोंडुवा वेटलैंड कॉम्प्लेक्स** को **रामसर साइट (Ramsar Site)** का दर्जा दिलाने के लिए संरक्षणवादियों, वन अधिकारियों और छात्रों ने संयुक्त रूप से पहल की है।
मुख्य बिंदु:

- यह वेटलैंड **लाओखोवा वन्यजीव अभयारण्य (70.13 वर्ग किमी)** में स्थित है, जो **काजीरंगा टाइगर रिज़र्व** का हिस्सा है।
- यहाँ **120 से अधिक पक्षी प्रजातियाँ** पाई जाती हैं, जिनमें कुछ वैश्विक स्तर पर संकटग्रस्त हैं — जैसे *ब्लैक-नेक्ड स्टॉर्क, फेरुगिनस पॉटर्ड* आदि।
- यह क्षेत्र **काजीरंगा–ओरंग परिदृश्य (landscape)** में वन्यजीव प्रवास का प्रमुख गलियारा (corridor) है।
- यदि इसे मंजूरी मिलती है, तो यह **पूर्वोत्तर भारत की तीसरी रामसर साइट** होगी।

UPSC Mains Practice Question:
"Discuss the ecological and socio-economic significance of Ramsar wetlands in India. How can local communities be integrated into wetland conservation efforts?"
(250 words – GS Paper 3)

Cruising ahead

India's shipping sector needs help from the government to thrive

The India Maritime Week event, headlined by Prime Minister Narendra Modi, signalled government recognition that shipping is not just a business but a business with a strong strategic component. The Indian shipping sector had declined considerably over nearly two decades under the ideological framework of liberalisation, privatisation and globalisation, which weakened government support and diluted strategic intent for shipping. Barring port infrastructure, the Indian government seemed keen largely only on training and educating sea-farers so that they could continue to serve on foreign ships and bring in foreign exchange. The state-owned Shipping Corporation of India (SCI), once a global leader in ship ownership, was allowed to decline. Favourable government policies, such as giving the company first rights to transport India's oil, were withdrawn in the name of a level playing field and SCI barely escaped privatisation. But COVID-19 was a rude awakening. With India depending heavily on foreign-owned ships, it had little leverage to intervene in its own trade. Private Indian shipping was too small to step up fully. Post-pandemic, the government has realised that shipping, though a business, has much strategic importance, especially during times of disruption, war, and where protectionism and resurgent national interests of western countries rule trade. Recent government initiatives have sought to beef up the SCI's fleet strength.

A major part of the lakhs of crores of rupees in investments announced at the maritime week was port-related. The government has been running its ports under a landlord model, sharing revenue with private and foreign companies for terminal operations, which are now a target of investors. This has given the ports financial heft to embark on new projects – the Chennai and Kolkata ports, for instance, have taken up the transshipment hub project in the Andamans. Investments are also seen in port connectivity, Sagarmala projects, and Indian seafarer training. Another major push has been to have foreign shipping companies register their ships in India through their local subsidiaries, which would give the Indian government leverage over them for serving Indian needs as well as support allied businesses such as insurance. But movement is still barely visible in Indian merchant shipbuilding, where greater progress would have signalled industrial, technical, and project management expertise in heavy industry. The day that Indian shipyards quickly roll out state-of-the-art LNG ships or futuristic green fuel burning vessels, Indian shipping will be truly cruising full ahead.

English Summary:
The editorial discusses the **need for stronger government intervention and policy support** to revitalise **India's shipping sector**, which has weakened due to decades of liberalisation and privatisation.
At the **India Maritime Week**, Prime Minister Narendra Modi highlighted shipping as a **strategic industry**—not just an economic one—critical for **national security, trade independence, and energy logistics**.

Background Context:
- India's shipping industry has suffered from **two decades of policy neglect**.
- Post-1991 **liberalisation and privatisation** reduced state involvement, weakening the **Shipping Corporation of India (SCI)**, once a global leader.
- The government focused more on **seafarer training** than **ship ownership or fleet expansion**.
- During COVID-19, India's heavy dependence on **foreign vessels** exposed its vulnerability in global maritime trade.

Strategic Importance of the Shipping Sector:
- Shipping is the **backbone of global trade** — over **90% of India's trade volume** moves by sea.
- It is vital for:
    - **Energy security** (transport of crude oil, LNG, and coal)
    - **Strategic autonomy** in trade and defence logistics
    - **Maritime diplomacy** in the Indo-Pacific
    - **Employment generation** through seafarers and port operations

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Government Policy Shifts & Initiatives:
Recent government efforts aim to **reinvigorate India's maritime strength**, particularly through:

a. Sagarmala Project
- Focuses on **port-led development**, coastal connectivity, and industrial corridors.
- Enhances logistics efficiency and coastal shipping.

b. Maritime India Vision 2030
- Targets **world-class port infrastructure** and domestic shipbuilding.
- Aims to increase India's share in global ship ownership and cargo handling.

c. Fleet Strengthening for SCI
- The government has initiated **fleet expansion plans** for the **Shipping Corporation of India**.
- Recognises shipping as a **strategic national asset** rather than a mere commercial enterprise.

d. Port Modernisation & PPP Model
- Adoption of **landlord port model**: ports share revenue with private operators.
- Major ports like **Chennai and Kolkata** are pursuing **transshipment hub projects** (e.g., in the Andaman Islands).
- Focus on **port connectivity**, **digitalisation**, and **green shipping technologies**.

e. Indian Flag Registration Push
- Indian firms encouraged to **register foreign ships in India** through local subsidiaries.
- This would give India **greater control in times of crisis** and help domestic insurers and financiers.

Challenges Remaining:
- Indian merchant shipbuilding remains **underdeveloped**.
- Lack of **domestic shipyards** capable of building large LNG or cruise vessels.
- **Dependence on foreign tonnage** continues — limiting trade sovereignty.
- **Limited fiscal incentives** for shipowners and builders compared to China or South Korea.
- **Green energy transition** (like LNG and hydrogen-fuelled vessels) needs policy and R&D support.

Way Forward:
- Recognise shipping as part of **strategic infrastructure**, not just commerce.
- Provide **tax incentives, subsidies, and loan guarantees** for fleet expansion.

- Build capacity for **indigenous ship design and manufacturing**.
- Establish **special maritime economic zones (SMEZs)** for ship repair and marine equipment industries.
- Strengthen **public-private partnerships (PPP)** in port operations and logistics.
- Encourage **green shipping technology** and sustainable maritime practices.

Quote from the Editorial:
"Shipping, though a business, has much strategic importance — especially during times of disruption, war, and trade protectionism."

Hindi Summary (हिंदी सारांश):
भारत के **शिपिंग क्षेत्र** को पुनर्जीवित करने के लिए **सरकारी समर्थन और रणनीतिक दृष्टिकोण** की आवश्यकता है। लेख में कहा गया है कि पिछले दो दशकों में **उदारीकरण और निजीकरण** के कारण भारत का शिपिंग क्षेत्र कमजोर हुआ है।
मुख्य बिंदु:
- **शिपिंग कॉर्पोरेशन ऑफ इंडिया (SCI)**, जो कभी वैश्विक अग्रणी था, अब कमजोर स्थिति में है।
- **कोविड-19 महामारी** के दौरान विदेशी जहाजों पर भारत की निर्भरता स्पष्ट हुई।
- सरकार ने अब इस क्षेत्र को **रणनीतिक उद्योग** के रूप में मान्यता दी है।
- **सागरमाला**, **मैरिटाइम इंडिया विजन 2030**, और **स्थानीय जहाज पंजीकरण नीति** जैसे कदम उठाए जा रहे हैं।
- भारत को **स्वदेशी जहाज निर्माण**, **हरित शिपिंग**, और **बंदरगाह कनेक्टिविटी** पर ध्यान देना चाहिए।

UPSC Mains Practice Question:
"Discuss the strategic importance of India's shipping sector and suggest measures to make it globally competitive while ensuring national maritime security."
(250 words – GS Paper 3)

As AI adoption by companies accelerates, tech layoffs continue

Though not directly displaced by AI technology, many employees are losing jobs as companies are restructuring to manage higher spending

DATA POINT

Sambavi Parthasarathy

Last week, online retail giant Amazon announced that it would reduce its global corporate workforce by about 14,000 people. Amazon CEO Andy Jassy had already flagged the possibility of job cuts in June, saying the increased use of Artificial Intelligence (AI) tools and agents would lead to more corporate job cuts.

A week before Amazon's announcement, the world's biggest social media company, Meta, said it would be removing around 600 positions in its Superintelligence Labs to make its AI unit more flexible and responsive. In July, IT service provider, Tata Consultancy Services, announced that while the company was retraining and redeploying staff in new markets, and investing and deploying new technology and AI, it would be cutting more than 12,000 jobs as part of the process. During the same month, tech behemoth Microsoft announced that it would lay off nearly 4% of its workforce to curb costs amid investments in AI.

While layoffs have sparked concerns about AI displacing jobs, the technology itself is not directly putting people out of work. Rather, investments in AI are reshaping business strategies, prompting companies to adopt new technologies, restructure workforces, and prioritise hiring employees with AI-related skills. Thus, job displacement is an indirect consequence of how businesses are integrating AI and not the immediate effect of AI technology alone.

This year, 218 companies have collectively laid off over 1.12 lakh employees globally. This is lower than the 1.53 lakh, 2.64 lakh, and 1.65 lakh layoffs reported in 2024, 2023, and 2022, respectively. However, the average number of employees laid off per company has increased from about 221 in 2023 to nearly 517 in 2025. **(Chart 1)**.

This indicates that although fewer companies are laying off employees this year, those that are doing so are cutting larger numbers at one go. Many of these companies are likely tech firms, which typically employ large numbers of people and often hire and fire in bulk. These companies are also deeply involved in AI transformation, reshaping the industry.

An industry-wise analysis shows that hardware companies, such as Intel and Lenovo, accounted for 28% of all layoffs this year. They were followed by retail companies such as Amazon, eBay, and Wayfair, which accounted for 14% of all layoffs. The sales (Salesforce) and consumer tech (Meta, Google) industries accounted for 9% and 7% of the total layoffs, respectively **(Chart 2)**.

Consequently, data show a significant rise in AI talent recruitment compared to the overall hiring rate across countries in 2024. **Chart 3** shows the relative AI hiring rate year-over-year ratio by region (see note in graphic). India leads in this measure with a relative AI hiring rate of over 33%, followed by Brazil and Saudi Arabia.

Data also show that the wages of workers with AI skills are 56% higher than the average salary. This is more pronounced in sectors such as wholesale and retail trade, energy and information, and communication **(Chart 4)**.

Higher wages for workers with AI skills don't necessarily reflect the scarcity of such workers. Instead, they reflect the high value employers place on these skills.

Global corporate investment in AI has also been increasing in recent years. In 2024, the total investment grew to $252.3 billion, almost 13 times higher that what it was a decade ago **(Chart 5)**.

Charts 3, 4, and 5 illustrate the broader trend: driven by a sharp rise in AI-related hiring and increased investments in technology and salaries, companies are actively restructuring their workforce to adapt to these changes.

The AI pivot

The data for the charts were sourced from Stanford University's AI Index 2025, layoffs.fyi and PwC's 2025 Global AI Jobs Barometer

Chart 1: Number of employees laid off globally in the last four years (bar), and the number of companies involved (line)

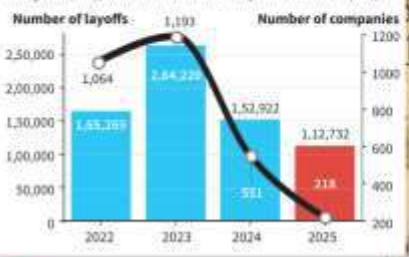

Chart 2: Industry-wise share of employees laid off in 2025. Chart does not include companies classified as 'Others'

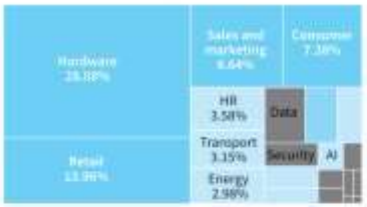

Chart 5: Global corporate investment in AI since 2013. Figures in $ billions

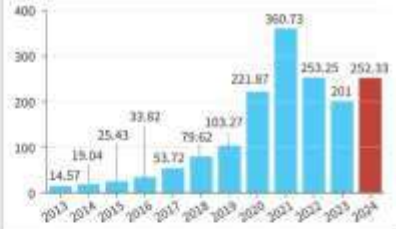

Chart 3: Relative AI hiring rate year-over-year ratio by region in 2024 (*Please see note below for methodology)

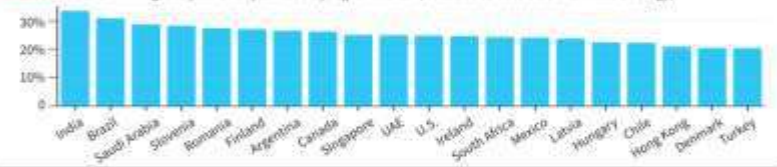

Chart 4: Sector-wise difference in average earnings between workers with AI skills and those without AI skills

*Note: This measure by LinkedIn considers any member to have AI talent if they have added AI skills to their profile or have worked in AI. The relative AI talent hiring rate is the year-over-year change in AI hiring relative to the overall hiring rate in the same region

English Summary:

The article discusses how **rapid adoption of Artificial Intelligence (AI)** across global industries has coincided with a **wave of large-scale layoffs** in the technology sector.

While **AI tools and automation** are not directly replacing human workers yet, they are triggering **corporate restructuring, cost optimization, and reduced hiring rates** — particularly in tech-heavy industries like **hardware, software, and e-commerce**.

Context and Key Developments:

- **Amazon** recently announced it would **cut 10,000 jobs globally**, citing increased AI integration and restructuring.
- Other major tech firms such as **Meta**, **Microsoft**, and **Tata Consultancy Services (TCS)** have also **reduced workforce or slowed hiring**, while heavily investing in AI-based tools and markets.
- According to **Layoffs.fyi and PwC's Global AI Jobs Barometer (2025)**:
  - Over **1.1 million global layoffs** occurred in 2025 — **down from 1.5 million in 2024**, but the **average scale per company rose**.
  - AI-related restructuring is now a **key driver of corporate downsizing**.

Global AI-Linked Job Trends:

Indicator	2022	2023	2024	2025 (est.)
No. of Layoffs (in lakh)	106.4	264.2	159.2	112.7
No. of Companies Involved	551	1,093	1,122	1,218
Observation	Layoffs peaked in 2023 as AI adoption surged, then stabilised in 2025 as automation settled into workflows.			

(Source: Chart 1 – Stanford AI Index 2025)

Industry-wise Impact (Chart 2):

Sector	Share in 2025 Layoffs
Hardware	28.08%
Retail	13.06%
Sales & Marketing	8.64%
Consumer Services	7.38%
HR	3.15%
Data & AI Security	2.98%

Insight:
Sectors with heavy automation potential (hardware, retail logistics, data processing) faced the largest job cuts.

AI Hiring Patterns (Chart 3):
AI-related hiring growth in 2024 (YoY rate):

- **India:** 25%
- **China:** 21%
- **United States:** 18%
- **Europe:** 14%
- **Middle East & Africa:** 10%

India leads in **AI talent hiring**, reflecting its **growing tech-service exports and startup ecosystem**.

AI Investment and Corporate Spending (Chart 5):
Global corporate investments in AI surged from **$14.57 billion (2013)** to **$360.73 billion (2024)**. This massive financial commitment demonstrates AI's **central role in productivity transformation**. However, higher spending on AI infrastructure and R&D has **diverted capital away from human labour costs**, leading to layoffs and wage stagnation.

Impact on Wages (Chart 4):
Workers with **AI skills** are commanding **20–40% higher salaries** than those without such skills, particularly in:

- **Energy and Manufacturing** (highest premium)
- **Finance and IT sectors** (moderate premium)
- **Education, Health, and Construction** (lowest AI pay gap)

Key Interpretations:

- **AI adoption = workforce contraction in traditional roles**, especially middle-management and data processing.
- **Demand shifts toward AI-savvy roles**: data scientists, prompt engineers, AI ethicists, automation

managers.
- Many layoffs are **cost-driven** rather than due to "AI replacing jobs."
- Countries like India and Brazil show **positive net AI hiring**, suggesting **upskilling mitigates displacement**.

Economic Implications:
- **Short term:** job losses, skill mismatches, and worker anxiety.
- **Medium term:** rise in **AI productivity-driven growth**.
- **Long term:** creation of **new AI-integrated roles** and a global push for **retraining policies**.
- Governments must focus on:
    - **AI literacy and reskilling initiatives**,
    - **Labour transition frameworks**,
    - **AI ethics and fair wage policies**.

Hindi Summary (हिंदी सारांश):
दुनियाभर में **आर्टिफिशियल इंटेलिजेंस (AI)** के बढ़ते उपयोग के साथ **टेक्नोलॉजी कंपनियों में छंटनी (layoffs)** तेजी से बढ़ी है।
मुख्य बिंदु:
- **अमेज़न**, **मेटा**, और **माइक्रोसॉफ्ट** जैसी कंपनियाँ AI के उपयोग को बढ़ा रही हैं, जिससे पारंपरिक नौकरियों में कटौती हुई है।
- 2025 में लगभग **11 लाख कर्मचारियों की छंटनी** हुई, जबकि 2023 में यह संख्या 26 लाख थी।
- सबसे अधिक प्रभावित क्षेत्र — **हार्डवेयर (28%)**, **रिटेल (13%)**, और **सेल्स-मार्केटिंग (8%)**।
- भारत में **AI टैलेंट हायरिंग दर 25%** रही, जो दुनिया में सबसे अधिक है।
- **AI कौशल वाले कर्मचारियों** को **20–40% अधिक वेतन** मिल रहा है।
- यह प्रवृत्ति बताती है कि भविष्य में नौकरी की सुरक्षा **AI कौशल और पुनः प्रशिक्षण (reskilling)** पर निर्भर करेगी।

UPSC Mains Practice Question:
"Artificial Intelligence is transforming the global employment landscape. Critically examine the challenges and opportunities AI presents for India's labour market."
(250 words – GS Paper 3)

The pitfalls of climate alarmism

Vasudevan Mukunth

For more than a decade, Bill Gates's views have come to define the respectable centre of climate discourse for the American elite. His words have carried the weight of authority and his ideas have bridged science, capital, and philanthropy in a distinct technocratic register.

Around 2019-2021, Mr. Gates' climate messaging leaned towards apocalyptic urgency as he issued dire warnings of collapsing ecosystems, mass displacement, and a narrowing window for the world to achieve net-zero. The rhetoric helped spur public concerns but also reproduced the pitfalls of climate alarmism, which is to overstate catastrophic inevitability without also emphasising adaptive capacity and human agency. Alarmism can mobilise communities in the short term but in the long-term it invites disbelief and political backlash.

Now, Mr. Gates appears to have overcorrected. In a recent memo, he said that while climate change will have serious effects, it won't threaten humanity's survival. He also suggested that reducing poverty and disease would better equip vulnerable populations to face a warming world. The differences between "not apocalyptic" and "not severe" are crucial yet easily lost in public discourse. He assumed the audience would parse gradations of scientific probability; in reality it mainly registers tone.

A dangerous pivot

Mr. Gates's position on climate adaptation has long been defined by the belief that technological innovation, investments, and systems engineering can decouple growth from emissions. While this view helped raise considerable funds for low-carbon energy research, it also perpetuated certain political tensions.

The foremost issue was that the optimism could be autocratic in practice. Mr. Gates's philanthropic model channels private wealth into setting priorities for entire governments, and in his pre-recalibration era, these were technically sophisticated measures to limit the amount of carbon in our environs without addressing the human and natural processes that put it there. His philanthropy often bypassed democratic deliberation, so his approach to "solving" climate change could crowd out alternative discourses, especially those emphasising structural change.

Bill Gates's actions show that both sounding the highest alarm on climate change and leaping back from that position can be equally harmful

Even now, Mr. Gates has said the world has made significant progress on cutting emissions. This isn't strongly supported by data. The Global Carbon Project and Carbon Brief states that global fossil fuel emissions reached record highs in 2022-2024, although their rate of growth slowed from about 3% per year in the 2000s to roughly 0.5% per year in the last decade. Emissions due to land-use changes have decreased by 28% since the late 1990s but this progress is outweighed by continued growth in emissions, particularly in China and India.

There are also uncertainties in emissions accounting. Land-use change emissions estimates are uncertain due to incomplete data on forest degradation and regional data gaps, especially in tropical regions. Even where declines are reported, revisions between datasets shift cumulative global emissions by tens of gigatonnes. Year-to-year changes also have wide error ranges. Taken together, these uncertainties mean that while the rate of emissions growth may have slowed and land-use emissions likely decreased, it is premature to claim progress in emissions reduction.

Likewise, Mr. Gates's pivot to prioritising global poverty and health also risks being read, especially by Western or corporate audiences, as the more convenient "we can keep burning now if we vaccinate the poor later". This logic of substitution undermines the systemic simultaneity that climate adaptation action demands.

U.S. President Donald Trump's reaction to Mr. Gates's memo, claiming he had "won the war on the climate change hoax", unsurprisingly reduced a re-evaluation to a hollow political victory. The more important consequences lie in the ripple effects of Mr. Gates's own shift.

Ripple effects of the shift

While it was commendable, two facts complicate its perception. First, Mr. Gates continues to occupy an outsized place in the global climate discourse as he translates science into a sort of climate common sense for the elite. His moderation carries both symbolic and practical weight. Second, his first alarmist position raised the stakes to untenable levels, then lowered them in the face of conflicting evidence, setting up a textbook example of why brinkmanship is bad. Even if stepping back from the brink is laudable, it will fuel overweening denialists such as Mr. Trump, who have trouble differentiating moderation from retreat.

Mr. Gates's path to becoming a climate authority is rooted in the same disruptive ethos that defined his technology career. He did not conquer the computing world with perfect, high-end products but by strategically pushing software and hardware that simply made computing more accessible. Ironically, he protected this dominance and opposed the open-source movement because he viewed it as a direct threat to Microsoft's business model. But as the technology landscape evolved with the rise of the internet and cloud computing, Microsoft's stance began to turn under new leadership. Mr. Gates himself acquiesced after it became clear the new paradigm would not cramp his business model.

In a world where great wealth and success are seen as a license to arbitrate on all critical societal issues, it is almost inevitable that Mr. Gates would become a climate seer – and that his opinions can't be dismissed out of hand.

English Summary:

The article critiques the **climate alarmism** approach, particularly the influence of **Bill Gates** on global climate discourse. It argues that while Gates' messaging initially helped mobilize action towards climate

change mitigation, it also created a **narrative of apocalyptic urgency** that may have led to **distorted priorities**, **technocratic dominance**, and **reduced democratic debate** in climate policy-making.

Background: Bill Gates' Climate Influence

- Over the past decade, **Bill Gates** has become a **central voice in American and global climate discourse**.
- Between **2019–2021**, his climate rhetoric leaned heavily on warnings of:
  - Collapsing ecosystems
  - Mass displacement
  - Narrowing time window for climate action
- This helped **mobilize public and political attention**, but also **fueled alarmism**, portraying climate change as a near-apocalyptic inevitability.

The Problem of Climate Alarmism

- **Alarmism** = Overstating catastrophic inevitability while underemphasising **human agency and adaptive capacity**.
- Short-term benefits:
  - Drives urgency and funding for clean energy innovation.
  - Strengthens global resolve for **net-zero goals**.
- Long-term drawbacks:
  - Creates **public fatigue** and **political backlash**.
  - Fosters the belief that **individual action is futile**, weakening civic participation.
  - Encourages **technocratic elitism** — solutions decided by billionaires, not by communities.

Bill Gates' Shift in Tone (Post-2022):

- Gates now acknowledges that climate change will have **serious effects but not existential ones**.
- Advocates for:
  - **Reducing poverty and disease** to strengthen resilience.
  - Viewing climate change as a **manageable challenge**, not an apocalyptic threat.
- This moderation reflects a shift from **"crisis narrative" to "adaptive resilience"**.

The "Dangerous Pivot" Explained

- Gates' focus on **technological innovation and decoupled economic growth** (growth without emissions) has been central to his approach.
- His **philanthropic model**, though effective in funding climate R&D, often bypassed **democratic policy-making**.
- By focusing on **engineering-based fixes** (carbon capture, direct air removal), it risks marginalising discussions around **systemic and structural reforms** (like consumption reduction or equitable development).

Ripple Effects on Global Climate Discourse

Two major consequences are highlighted:

(a) Perception & Power:

- Gates occupies an **outsized place** in shaping elite climate discourse.
- His pragmatic moderation could **dilute urgency**, allowing **climate deniers and delayists** to exploit his remarks.

(b) Symbolism vs. Substance:

- His earlier extreme stance raised expectations; the sudden moderation could seem like a **retreat**, not evolution.
- This may blur the line between **realistic optimism** and **complacency**.

Data-based Critique:

- According to the **Global Carbon Project** and **Carbon Brief**,
  - **Global fossil fuel emissions** reached **record highs (2022–2024)**.

    - Despite land-use change-related reductions (~28% since the 1990s), overall emissions are **still rising** due to increased industrial output in **China and India**.
- Emission data remains **uncertain**, especially in **tropical regions**, which complicates precise global carbon accounting.

Broader Argument:

- Climate solutions should not be dominated by **corporate technocrats** but guided by **inclusive, democratic deliberation**.
- Alarmism without participatory planning risks alienating developing countries where poverty, adaptation, and livelihoods remain priority concerns.
- Gates' shift toward **health and poverty reduction** aligns with **climate adaptation goals**, but must be accompanied by **collective governance** rather than private philanthropy-led strategy.

Hindi Summary (हिंदी सारांश):

यह लेख **क्लाइमेट अलार्मिज़्म (जलवायु भयावहता)** की आलोचना करता है, विशेष रूप से **बिल गेट्स** की जलवायु नीतियों पर प्रभाव की।

मुख्य बिंदु:

- बिल गेट्स ने 2019–2021 के दौरान जलवायु संकट को "वैश्विक आपातकाल" के रूप में प्रस्तुत किया।
- इसने जागरूकता बढ़ाई, लेकिन साथ ही भय और राजनीतिक थकान भी पैदा की।
- 2022 के बाद गेट्स ने कहा कि जलवायु परिवर्तन गंभीर है, लेकिन "मानवता का अंत नहीं करेगा।"
- उन्होंने गरीबी और बीमारी को कम करने पर ध्यान देने की बात कही ताकि समाज बेहतर तरीके से अनुकूल हो सके।
- लेख में कहा गया है कि जलवायु समाधान सिर्फ अमीर टेक्नोक्रेट्स द्वारा तय नहीं किए जाने चाहिए, बल्कि लोकतांत्रिक सहभागिता से।
- ग्लोबल डेटा दर्शाता है कि उत्सर्जन अभी भी बढ़ रहा है; इसलिए "नेट-जीरो" लक्ष्य अभी दूर है।

UPSC Mains Practice Question:

"Climate alarmism can mobilise short-term action but risks undermining long-term adaptation and democratic participation." Discuss with reference to recent global climate narratives.
(250 words – GS Paper 3)

Welfare dependency or governance reform?

As Bihar heads into a pivotal election, voters face a stark choice between maintaining a status quo of welfare dependency or embracing transformative governance reforms. With the State grappling with the highest rate of multidimensional poverty in India, the electorate's anticipation for change is palpable

FULL CONTEXT

Deepanshu Mohan

The story of an election in Bihar carries the burden of a polity facing decades of destitution. As the State with India's lowest per capita income and highest rate of multidimensional poverty, the public anticipation for warranting change and a political churn seems immense. For an eagerly awaiting electorate, this contest appears as a definitive test of India's democratic form asking a critical question – will the election seek to perpetuate a status-quo of welfare-dependency for the poor, or can the verdict deliver the structural transformation needed to pull millions out of poverty?

Bihar's electoral map, spanning two decades from 2005 to the current election reveals a dynamic landscape of social shifts and political realignment between the National Democratic Alliance (NDA) and the *Mahagathbandhan* (MGB). The dominant pattern is one of constant flux, punctuated by razor-thin margins, such as the NDA's narrow 125-to-110 seat victory in the 2020 Assembly polls.

Fresh face: Jan Suraaj chief Prashant Kishor ahead of Bihar elections, in Begusarai, on Sunday. PTI

Women, youth and new entrants

The changing dynamics of voter turnout has significantly altered Bihar's political landscape. The State has long been seen as a stronghold of entrenched caste-based and coalition politics.

Between 2015 and 2020, electoral data underscores a notable gender gap in participation that has worked in favour of women: female turnout rose to 60.48% in 2015 compared to 53.32% for men, and although it slightly declined in 2020, women (59.6%) still outvoted men (54.7%). This consistent engagement points to the emergence of women as a decisive electoral constituency, capable of overriding patterns dictated by patriarchal voting norms and caste loyalties. There are several factors contributing to this transformation such as targeted welfare schemes like the Bicycle and Ujjwala Yojana as well as reforms within the public distribution system. These have tangibly improved women's social and economic agency, encouraging them to vote independently rather than as extensions of male family preferences. Political parties, particularly the Janata Dal (United) (JD(U)) under Chief Minister Nitish Kumar, have framed women-centric governance narratives, linking gender empowerment to governance credibility. This has strengthened their appeal among women.

Additionally, the urbanising youth electorate, especially in districts like Patna, Muzaffarpur, and Gaya, has increasingly become issue-oriented – prioritising employment, education, and governance performance over community-based loyalty. This has led to fragmented votes and anti-incumbency swings, as younger voters are less tethered to traditional coalition bases.

The combined effect of high female participation and assertive youth voting has thus made Bihar's elections more volatile and competitive. It has diluted the predictability of caste arithmetic, weakened the hold of legacy coalitions, and pushed political actors to reimagine their outreach placing social welfare, education, and governance efficiency at the forefront of their campaigns.

While caste coalitions have consolidated in pockets of rural Bihar, they are actively fragmenting in peri-urban, migrant-labour districts. This dissolution of old patterns is being accelerated by new entrants like Prashant Kishor's Jan Suraaj movement.

Mr. Kishor's political strategy and voter messaging cuts directly across traditional loyalties. He is mobilising across caste among the youth in western districts like Muzaffarpur and West Champaran, emphasising on a "governance-first narrative" focused on education, healthcare, and anti-corruption. His core message appeals to the youth who are angry about high unemployment and forced migration. As Jan Suraaj contests the elections, political commentary cites the party as positioning itself as a new third-front alternative to the enduring caste-centric politics of Bihar.

The development question

Bihar's electoral geography reveals a clear economic divide that mirrors its political alignments. Urban consolidation has steadily favoured the NDA. In rapidly urbanising districts such as Patna and Gaya, voter trends have remained remarkably stable, reflecting enduring support for the alliance. These areas, benefiting from visible infrastructure and welfare initiatives, have repeatedly rewarded the incumbents. Between 2005 and 2015, NDA vote shares in such constituencies rose steadily, underscoring the persistence of development-based voting in Bihar's urban centres. Yet, beneath this surface of stability lies a deeper paradox.

The NDA's urban dominance rests on a "development-oriented" narrative that conceals significant contradictions. While its support stems from visible gains such as roads, bridges, electricity, and metro projects, these largely represent symbolic progress rather than transformative growth. Persistent structural issues, especially the absence of industrial employment, reveal a widening gap between the optics of development and the substance of economic change. Infrastructure has become synonymous with progress, even as job creation and industrial diversification lag behind. The Patna Metro, for instance, strengthens the incumbent's image but does little to address the underlying employment deficit. Meanwhile, victory margins have steadily narrowed, with winners now representing barely 20% of registered voters. Bihar's urban paradox, therefore, is one of stability amid discontent: a sustained incumbency built on visible governance, yet underpinned by a shrinking representational base and unfulfilled structural transformation.

Ideology versus patronage

Bihar's political divide today is shaped by two distinct but competing logics – the NDA's performance-driven governance model and the MGB's populist, patronage-based mobilisation. Out of power for nearly two decades, the MGB has relied on redistributive assurances rather than a record of governance. Its manifesto, 'Tejashwi ka Pran', exemplifies this approach, promising free electricity, ₹2,500 monthly transfers, job guarantees, and expanded livelihood schemes to appeal to those excluded from Bihar's uneven growth. While the NDA projects the optics of visible development, the MGB seeks to convert economic vulnerability into electoral support through welfare-based outreach. These competing strategies show how deprivation and aspiration are transformed into political legitimacy in a State still negotiating its path to economic transformation.

This divide becomes even sharper when viewed through the lens of Bihar's uneven development map. The NITI Aayog's Multidimensional Poverty Index (MPI), despite some of its methodological limitations, shows how Bihar's composite poverty score improved from 0.265 in 2015-16 (NFHS-4) to 0.160 in 2019-21 (NFHS-5), with progress being spatially asymmetric. District-level disparities in health, education, and living standards interact closely with constituency-level political representation, shaping how development translates into democracy.

In the Seemanchal belt, deprivation remains deeply entrenched. Madhepura records some of the highest multidimensional poverty in the State and is also among its most politically contested areas. The Association for Democratic Reforms (ADR) 2020 analysis of the assembly constituencies in the belt shows that while winners secured 49-55% of valid votes, their representativeness (the share of total registered voters they actually spoke for) stood at only around 30-33%. In the Araria and Purnia Assembly constituencies, Congress's Abidur Rahman won 55% of the votes but represented just 33% of the electorate, while the BJP's Vijay Khemka held 51%, translating to 32%. This suggests that even where voter mobilisation is high, much of the electorate remains outside the ambit of effective representation. Seemanchal's politics thus thrives not on mass consensus but on targeted mobilisation, where parties like the Rashtriya Janata Dal (RJD) and the All India Majlis-e-Ittehadul Muslimeen (AIMIM) channel deprivation into political visibility through welfare networks and community brokers.

Patna has an MPI of 0.107, with only 23.09% of residents multidimensionally poor, the lowest in Bihar. Yet ADR data shows that the average representativeness of Patna's MLAs from Kumhrar, Bankipur, and Digha remains between 19% and 22%, despite high vote shares ranging from 54-59%. These are among the least representative constituencies in the State, reflecting not apathy but fragmentation within an urbanised electorate. The BJP continues to dominate, but shrinking margins and lower representational depth indicate that voters now evaluate governance through performance-based criteria rather than patronage.

Nalanda offers a midpoint on this continuum. With an MPI of 0.142 and roughly 30% poverty headcount, its constituencies like Nalanda and Rajgir show vote shares around 39-43% and representativeness near 23%. These consistent figures reflect a more stable form of developmental politics, where citizens participate not to claim welfare, but to preserve a governance model centred on infrastructure, electrification, and women's empowerment. This intermediate zone represents an electorate negotiating between old-style welfare mobilisation and newer governance-based appeals.

Further west, Bhojpur and Begusarai illustrate how development can recalibrate democratic meaning. MPI values have declined sharply – Bhojpur from 0.188 to 0.121 and Begusarai from 0.259 to 0.128, while ADR data shows winners securing 39-46% of votes and representing 23-27% of the electorate. Here, legitimacy derives less from numerical majority and more from administrative performance.

Ultimately, Bihar's district and constituency patterns together trace a development-to-democracy curve. Welfare politics, however, continues to retain symbolic power: with nutrition deprivation above 50% and maternal health deficits near 37%, central schemes remain electorally salient.

Two Biharas

The Bihar election thus emerges as a decisive ideological contest between the "two Bihars." The ruling alliances still continue to rely on clientelism, targeting high-poverty regions where deprivation-driven mobilisation ensures turnout, but stifles competitiveness, treating welfare as a recurring political performance. In contrast, a newly anchored Jan Suraaj seeks to fracture this old order by mobilising around a "governance-first" narrative. It challenges the transactional model sustained by cash transfers and symbolic schemes. The assembly verdict will determine whether Bihar remains anchored to dependency or transitions toward a new politics of evaluative scrutiny, one, where poverty no longer guarantees loyalty, but, demands accountability.

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THE GIST

- Bihar's electoral map, spanning two decades from 2005 to the current election reveals a dynamic landscape of social shifts and political realignment between the National Democratic Alliance (NDA) and the *Mahagathbandhan* (MGB).
- The NDA's urban dominance rests on a "development-oriented" narrative that conceals significant contradictions. While its support stems from visible gains such as roads, bridges, electricity, and metro projects, these largely represent symbolic progress rather than transformative growth.
- Bihar's political divide today is shaped by two distinct but competing logics – the NDA's performance-driven governance model and the MGB's populist, patronage-based mobilisation.

English Summary:

As Bihar approaches a critical election, the state confronts a fundamental policy dilemma — whether to **continue the cycle of welfare dependency** or to **pursue deep governance and structural reforms**. The article analyses Bihar's socio-economic context, highlighting its **highest rate of multidimensional poverty (MPI 0.07)**, entrenched **patronage politics**, and the electorate's growing **aspiration for**

governance-based transformation rather than mere subsidies.

Context: Bihar's Democratic Dilemma

- Bihar stands at a **decisive juncture** in its democratic journey.
- It records **India's lowest per-capita income** and the **highest multidimensional poverty (32.7%)**.
- The state's electoral politics has long been **dominated by caste, class, and coalition-based mobilization**.
- However, **public anticipation for governance-driven change** has been steadily rising.

The Changing Political Landscape

- Since **2015–2020**, Bihar's voter dynamics reveal a **gradual shift toward issue-based politics**, especially among women and youth.
- **Women's turnout** grew to **60.48% (2020)** compared to **53.37% (2015)** — reflecting a transformation in agency and political awareness.
- Schemes like **JEEViKA**, **Bicycle Yojana**, and **Ujjwala** have **empowered women economically and socially**, making them a decisive voting bloc.

Two Competing Political Models:

(A) Welfare Dependency Model (Patronage Politics)

- Characterised by:
  - Short-term electoral welfare transfers.
  - Freebies, subsidies, caste-based mobilization.
  - Populist messaging focused on **"redistribution" rather than reform**.
- Supported by the **Mahagathbandhan (MGB)** led by RJD, JD(U), and Congress.
- RJD's narrative – "pro-poor populism", invoking schemes like *'Bhookh, Bhrashtachar aur Berozgaari ke khilaf nyay'* (Justice against hunger, corruption, and unemployment).
- Aimed at **minority, backward caste, and rural constituencies** — but risks perpetuating dependency.

(B) Governance Reform Model (Transformative Politics)

- Advocated by the **National Democratic Alliance (NDA)** led by BJP.
- Emphasises:
  - Infrastructure creation.
  - Healthcare, education, and women's empowerment.
  - "Performance-based legitimacy" over caste arithmetic.
- Focus on **urban development**, **entrepreneurship**, and **job creation** rather than mere welfare distribution.
- Yet, this model faces skepticism due to **implementation delays** and limited inclusivity.

The Development Question

- Bihar's developmental progress has lagged despite **significant social welfare spending**.
- According to **NITI Aayog's MPI 2024**,
  - Bihar's poverty fell from **0.268 (2015–16)** to **0.074 (2022–23)**.
  - Yet, **1 in 3 Biharis** remains multidimensionally poor.
- Persistent deficits exist in:
  - **Health and Nutrition (30% deprivation)**
  - **Education (45%)**
  - **Housing and Sanitation (40%)**
- The **"redistribution vs reform" debate** now dominates Bihar's policy imagination.

Ideology versus Patronage

- Bihar's political culture remains split between:
  - **Caste-based entitlement politics**, appealing to identity.
  - **Issue-based governance politics**, appealing to aspiration.

- The electorate, especially youth and women, are increasingly **rejecting symbolic welfare** in favour of **systemic reform** that promises dignity and opportunity.
- Parties like Prashant Kishor's **Jan Suraaj** movement are mobilising around **good governance**, transparency, and **grassroots accountability**.

Structural Barriers

- Bihar's fiscal capacity is constrained:
  - Only **₹50,000 crore** annual tax revenue for a population of 13 crore.
  - Heavy dependence on **Central transfers and grants**.
- Political patronage networks exploit these fiscal weaknesses to **retain vote-bank loyalty** through direct benefit transfers.
- **Employment generation** remains abysmally low — Bihar's unemployment rate is **13.6%**, highest in India.
- Migration continues as the **safety valve** for Bihar's youth.

The "Two Bihars" Paradox

- **Urban Bihar**: Shows inclination toward reform, entrepreneurship, and growth-led politics.
- **Rural Bihar**: Remains embedded in caste loyalties and immediate survival-based decision-making.
- This duality creates a **split electorate** — aspirational youth versus welfare-dependent rural poor.

Way Forward

To break the welfare trap and foster genuine reform, Bihar must:

1. **Reorient welfare spending** toward productive assets — education, skill, health.
2. **Strengthen local governance institutions** (Panchayats, ULBs).
3. **Invest in urbanisation as a growth driver.**
4. **Enhance private investment** through industrial corridors.
5. **Mainstream women's political participation** beyond welfare schemes.
6. Build a **"governance social contract"** rooted in trust, not transactions.

Hindi Summary (हिंदी सारांश):

बिहार की आगामी चुनावी लड़ाई **"वेलफेयर बनाम गवर्नेंस"** के बीच है।
राज्य में **बहुआयामी गरीबी** की दर देश में सबसे अधिक (32.7%) है।
मुख्य बिंदु:

- **महागठबंधन (RJD+JDU)** का जोर पारंपरिक "वेलफेयर राजनीति" पर है — मुफ्त योजनाएँ, सब्सिडी, जातीय समीकरण।
- **NDA (BJP+Allies)** "गवर्नेंस-आधारित विकास" की राजनीति को आगे बढ़ा रही है — सड़क, शिक्षा, स्वास्थ्य और महिला सशक्तिकरण पर ध्यान।
- बिहार में महिलाएँ और युवा अब **वोट बैंक नहीं, परिवर्तन की शक्ति** बन चुके हैं।
- गरीबी कम हुई है पर संरचनात्मक सुधार धीमा है।
- बिहार को **राजनीतिक आश्रयवाद (patronage politics)** से बाहर आकर **नीतिगत सुधारों** की दिशा में बढ़ना होगा।

UPSC Mains Practice Question:

"The persistence of welfare dependency undermines long-term governance reform in poor states like Bihar." Discuss with reference to India's democratic development trajectory.
(250 words – GS Paper 2)