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1. In Ladakh Plan, L-G Gets Final Authority Over Laws

Source: The Hindu | GS II: Polity and Governance, Union Territories, Federalism, Tribal Rights.

2. Mali: Geographical Basics

Source: The Hindu | Prelims: World Geography, Sahel Region, African Geography.

3. Why Big Tech Is Giving Away Open-Weight AI Models

Source: The Hindu | GS III: Science and Technology, Artificial Intelligence.

4. Aditya-L1 Offers New Insights into Solar Eruptions

Source: The Hindu | GS III: Science and Technology, Space Technology.

5. Can India Turn Retrofitment into the Next Mobility Revolution?

Source: The Hindu | GS III: Economy, Environment, Electric Mobility.

6. Terror Ecosystem Must Be Dismantled, Rajnath Tells SCO

Source: The Hindu | GS II: International Relations | GS III: Internal Security.

7. UN Experts Raise Concerns over Restrictions on Protests in India

Source: The Hindu | Prelims: International Human Rights Treaties, United Nations.

Centre's plan for Ladakh gives L-G final authority over laws

Draft asks whether the delimitation of constituencies for proposed elected body will be done by election authority or a Delimitation Commission; it also explores reservation of seats for women

Vijaita Singh
NEW DELHI

The draft proposed by the Centre for a unique constitutional arrangement in Ladakh says that the Lieutenant-Governor (L-G) would be the final authority on any regulation made by the Union Territory-level elected body.

In the document titled "Constitutional and Statutory Framework", in response to a question on how the U.T.-level body's decisions would take effect, the Ministry of Home Affairs (MHA) said, "As a legislative practice enshrined in the Constitution of India, every regulation (law) made by the U.T.-level body would go to the Lt. Governor and would take effect after his assent."

Two civil society groups, Leh Apex Body (LAB) and Kargil Democratic Alliance (KDA), are part of a high-level committee constituted by the Centre in 2023, to ensure constitutional safeguards for the region, following the revocation of Article 370's applicability in the erstwhile State of Jammu



Members of the LAB and the KDA have long demanded the inclusion of Ladakh in the Sixth Schedule of the Constitution. FILE PHOTO

and Kashmir in 2019.

The draft, accessed by *The Hindu*, asks, whether the delimitation of constituencies for the proposed U.T.-level elected body will be done by an election authority or a Delimitation Commission.

It asks whether the delimitation would be only population-based or based on both population and area in different proportions such as 50-50, 60-40 or 40-60 or based on population, panchayat boundaries, seasonal inaccessibility, administrative boundaries and public convenience. There are questions about the electoral rolls whether it will be local body electoral rolls or Lok Sabha poll rolls. On

women's representation, the draft explores multiple options, including reserving one-third or up to 50% of the seats in the proposed body for women. It also invites suggestions on whether such reservation should apply only to elected seats or extend to nominated positions as well.

The draft proposes that the new constitutional amendment would create a special governance framework for Ladakh through a new Article in the Constitution, which would provide constitutional status to a U.T.-wide elected body for Ladakh.

The draft seeks LAB's and KDA's views on several institutional questions – whether LAHDCs should

receive constitutional status or continue under the existing LAHDC Act, 1997; whether members of the U.T.-level body should be elected directly by the public or indirectly through LAHDCs and panchayati raj institutions; whether nominated members should include experts with special knowledge; the role of Member of Parliament and LAHDC Chief Executive Councillors in the body.

"The principal task at this stage is to settle the constitutional and institutional choices that determine the coherence of the entire framework. The proposed next step is therefore to approve the answers to the options in principle, before proceeding to the clause-by-clause finalisation of the legislative instruments," the draft said.

It added that once the decisions have been settled, the constitutional amendment and the proposed regulation under Article 240 of the Constitution can be revised into a coherent package, supported by a clear subject-allocation framework.

Hill councils to be created in all eight districts of Ladakh

Peerzada Ashiq
SRINAGAR

Ladakh is all set to hold elections to eight hill councils for eight districts as President Droupadi Murmu promulgated the Ladakh Autonomous Hill Development Councils (LAHDC) (Amendment) Regulation, 2026, Lieutenant Governor Vinai Kumar Saxena said on Tuesday.

Terming it a "historic regulation", Mr. Saxena said: "It was implemented in a record time of just six days and now paves the way for creation of LAHDC in all eight districts of Ladakh, including the newly-created Sankoo district. The Union Cabinet had approved the amendments on October 14, followed by its promulgation by the Honourable President on 16th October."

Elaborating on the council's composition, Mr. Saxena said the amended regulation rationalises the number of constituencies from the earlier 26 seats in each council, to a minimum of seven seats and maximum 24 seats now. "It also provides for nomination of four members from 'women' and 'unrepresented

communities' for greater people's participation in the local governance," said Mr. Saxena.

Ladakh was carved out as a Union Territory in 2019 from the Kashmir division of erstwhile State of Jammu and Kashmir. Prior to 2019, Ladakh had only two hill councils, Kargil and Leh. However, the L-G administration has created eight districts this year.

At present, LAHDC-Kargil, which held elections in 2023, remains in place.

Questions on timing

Meanwhile, the Kargil Democratic Alliance (KDA), one of the key civil society bodies holding dialogue with the Centre over the demands of Statehood and Sixth Schedule, questioned the timing of the amendments to the LAHDC.

"At a time when talks are ongoing to negotiate a settlement for Ladakh it is deeply problematic that the government has chosen to make substantial changes to the composition, powers and functioning of these councils without consulting the people and stakeholders of Ladakh," said KDA member Sajjad Kargilli.

1. Ladakh's Governance Framework: L-G Powers and Hill Council Reforms

Source: The Hindu

GS Paper II: Polity and Governance — Union Territories, Federalism, Tribal Rights and Local Self-Government

Context: The Centre's proposed constitutional framework for Ladakh, alongside amendments to the Ladakh Autonomous Hill Development Councils (LAHDCs), raises questions about elected representation, the Lieutenant Governor's authority, constitutional safeguards and local autonomy.

1. Background

1. **Reorganisation (2019):** Ladakh became a Union Territory without a legislature following the reorganisation of the former State of Jammu and Kashmir.
2. **Regional demands:** The Leh Apex Body (LAB) and Kargil Democratic Alliance (KDA) have demanded statehood and inclusion under the Sixth Schedule.
3. **Existing institutions:** Ladakh has elected hill councils in Leh and Kargil, responsible for specified aspects of local development and administration.
4. **Central initiative:** The Centre constituted a high-level committee in 2023 to address regional concerns and examine constitutional safeguards.

2. Proposed Constitutional Framework

1. **L-G's authority:** The draft envisages the Lieutenant Governor having final authority over regulations made by the proposed Union Territory-level elected body.
2. **New constitutional provision:** It proposes a special governance framework for Ladakh through a new Article of the Constitution.
3. **Delimitation:** Options include population-based, area-based or mixed criteria, accounting for geographical remoteness, accessibility and administrative boundaries.
4. **Women's reservation:** The draft considers reserving one-third or up to 50% of seats for women.
5. **Representation and composition:** It raises questions about direct or indirect elections, nominated expert members and the roles of Members of Parliament and hill council representatives.
6. **Legislative clarity:** The proposed framework seeks to settle institutional arrangements before finalising the relevant legislative instruments.

3. LAHDC Amendment Regulation, 2026

1. **Expansion of councils:** The amended framework provides for hill councils in all eight districts of Ladakh, including the newly created Sanku(o) district.
2. **Council composition:** The regulation increases the permitted number of constituencies from 26 to a minimum of seven and a maximum of 24 seats per council.
3. **Representation:** It provides for nomination of four members, including women and unrepresented communities, according to the regulation.
4. **Existing arrangements:** The LAHDC-Kargil council elected in 2023 continues under the existing institutional framework.

4. Key Governance Concerns

1. **Democratic accountability:** Giving the L-G final authority may constrain the autonomy of the proposed elected body.
2. **Local self-government:** Overlapping powers among the L-G, the proposed elected body and hill councils could create administrative uncertainty.

3. **Equitable representation:** Delimitation must account for population, vast distances, sparse settlements and difficult terrain.
4. **Cultural and land protection:** Residents seek safeguards for land, employment, cultural identity and local resources.
5. **Women's participation:** Reservation can broaden representation, but the final design must ensure meaningful participation in decision-making.
6. **Consultation deficit:** Changes to council composition and powers without adequate consultation could deepen distrust between local communities and the administration.

5. Constitutional Provisions and Significance

1. **Article 239:** Provides for administration of Union Territories by the President through an appointed administrator, subject to the applicable constitutional framework.
2. **Sixth Schedule:** Establishes autonomous district and regional councils for specified tribal areas in Assam, Meghalaya, Tripura and Mizoram. Ladakh is not currently covered.
3. **Article 371:** Provides special arrangements for certain states but does not itself establish a special constitutional framework for Ladakh.
4. **Federalism:** The issue highlights the balance between central administration, democratic representation and regional autonomy.
5. **Constitutional safeguards:** The choice of institutional structure affects the protection of tribal identity, land rights and local decision-making.

6. Way Forward

1. **Meaningful consultation:** Involve the LAB, KDA, hill councils, elected representatives and community organisations before finalising reforms.
2. **Clear division of powers:** Define the respective roles of the L-G, elected body and LAHDCs to avoid overlapping jurisdiction.
3. **Representative delimitation:** Use transparent criteria that reflect population, geography, accessibility and regional diversity.
4. **Effective safeguards:** Consider constitutionally appropriate protections for land, culture, employment and local resources.
5. **Accountable governance:** Strengthen local institutions, public consultation and transparent decision-making.

Conclusion

Ladakh's governance framework must balance administrative effectiveness with democratic accountability, regional autonomy and protection of its distinct cultural and ecological identity.

BAMAKO

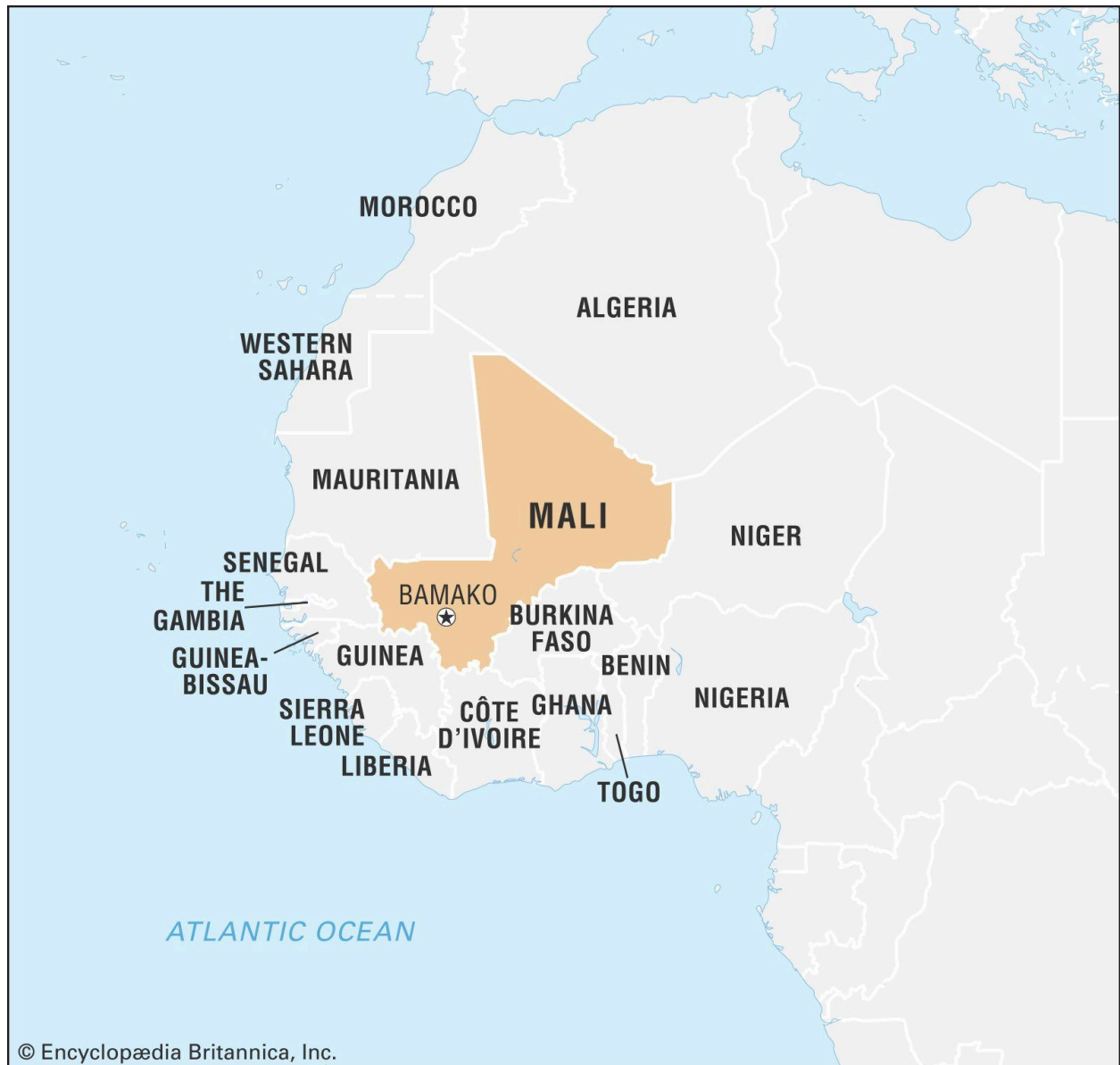
Islamic State-linked militants kill at least 48 civilians in eastern Mali



AFP



Islamic State-linked militants have killed at least 48 people in Mali in apparent retaliation for an attack on suspected informants by pro-government forces including members of Russia's Africa Corps. The attacks by fighters from Islamic State Sahel Province took place in at least five localities in Menaka. REUTERS



2. MALI: GEOGRAPHICAL BASICS

Source: The Hindu

Subject: Prelims | World Geography

1. Mali

1. **Location:** Landlocked country in West Africa.
2. **Capital:** Bamako.

3. **Neighbours:** Algeria, Niger, Burkina Faso, Côte d'Ivoire, Guinea, Senegal and Mauritania.
4. **Major Rivers:** Niger and Senegal.
5. **Natural Resources:** Gold, uranium and phosphates.

2. Sahel Region

1. **Location:** Semi-arid transition belt between the Sahara Desert (north) and savanna (south).
2. **Extent:** Stretches across Africa from the Atlantic Ocean towards the Red Sea.
3. **Countries:** Mali, Mauritania, Burkina Faso, Niger and Chad, among others.
4. **Features:** Low and irregular rainfall, drought, desertification and recurring food insecurity.

Why Big Tech is giving away open-weight AI models and what the companies want in return

From Muse Spark Open to Beam, Nemotron and Timestral, tech firms are releasing AI models to attract developers, challenge Chinese rivals and strengthen their ecosystems by attracting developers, to shape how AI is used and earn money from businesses, services and computing infrastructure built around their models; for Indian firms, these models are an alternative to relying on foreign AI

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Beam, Muse Spark Open, Nemotron 3.5 Super VL, Nemotron 3.5 Bolt 74B-A9B, Timestral. These may sound like characters from a science-fiction franchise. They are, in fact, names of open-weight AI models announced or released by technology firms in U.S. and Europe in October.

Reflection AI released Beam's weights on October 16. Meta released Muse Spark Open while NVIDIA made two Nemotron models available on October 15. France's Mistral AI also announced Timestral, a family of models designed for time-series forecasting.

Firms are making models available for various tasks viz. from writing software and operating AI agents to interpreting images and forecasting time-series data. But why spend heavily to develop AI models and then allow others to download and adapt them? If the models are free to download, where does money come from?

The answer lies in a race to attract developers, shape how AI is used and earn money from the businesses, services and computing infrastructure built around these models.

Open-weight model
AI models learn patterns from data during training.

Their trained parameters, called weights, are numerical values that help fix how the models process inputs and generate responses.

Think of an AI model as a chef who learnt from thousands of recipes. During training, the model learns patterns that help it decide what ingredients to combine and in what proportions to make a certain dish. Its weights shape these decisions. Making the weights available is like sharing the chef's acquired knowledge with other chefs, who can then adapt it to their own needs and create dishes of their own.

Most people access proprietary AI models via websites or apps while developers may access them via application programming interfaces (APIs). The provider controls access and may charge for usage.

An open-weight model makes its trained parameters available for download. Developers can run it on compatible computers or servers, adapt it for particular tasks or integrate it into applications.

This can give businesses and individual users greater control over how they deploy and customise AI models, and reduce dependence on a single provider. However, open-weight does not automatically mean open-source in the fullest sense. A firm may release weights without publishing training

code or sufficient information about the data used to train the model. Licences may also curb some uses.

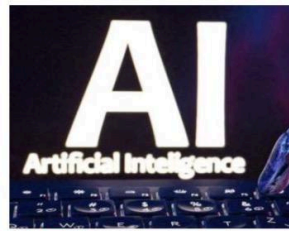
Open-weight AI is not new. OpenAI released GPT-2's weights in 2019. What has changed is the capability available via downloadable models and the emergence of Chinese developers such as DeepSeek as serious competitors, prompting a broader contest over who will shape the AI ecosystem.

Chinese competition

The growing availability of Chinese models has intensified competition in the open-weight AI market. Firms, including DeepSeek and Alibaba, released models whose weights developers can download and adapt. DeepSeek-R1, released in January 2025 under MIT licence, made a reasoning model available for others to use, modify and commercialise. Alibaba's Qwen family includes models of different sizes for a range of applications.

Developers choose models based on performance, cost, hardware requirements and licensing. If a Chinese model meets their needs at a lower overall cost, they may choose it over a proprietary American or European service.

As more developers build applications and tools around a model, its ecosystem can make it more attractive to others.



Highly dynamic: Firms are making models available for different tasks, from writing software to interpreting images. REUTERS

OpenAI made the geopolitical argument explicit when it released its open-weight models in August 2025. It said the models could help partner countries build AI infrastructure on what it called "U.S.-led rails", giving them an incentive to choose "democratic AI" over "autocratic AI". This is the company's stated position but it illustrates how the spread of AI technology is also viewed as a strategic contest.

Where is the money?

The answer depends on what the firm sells. Meta CEO Mark Zuckerberg outlined his approach in a July 2024 essay, Open Source AI Is the Path Forward. Drawing a comparison with Linux, he argued releasing Llama's weights may encourage firms to develop tools, integration

and hardware optimisation around the models, aiding a broader ecosystem.

Mr. Zuckerberg said selling access to AI models was not Meta's business model, which centred on building products and services. He argued releasing Llama would help Meta avoid dependence on competitors' proprietary technology while encouraging the development of a broader ecosystem of tools and services around its models.

For NVIDIA, the commercial interest is different. It sells computing hardware and related software. Wider adoption of AI applications could raise demand for computing power, potentially benefiting NVIDIA, although developers can run open models on competing hardware. Revenue gains

from individual model releases are not guaranteed. Model developers such as Mistral can offer paid hosting, enterprise support, customised models and private deployments.

Alibaba's Qwen models sit alongside its cloud and AI services. A developer may download a model's weights at no cost but pay a provider to host and run it reliably at scale. Alternatively, the developer may run it independently and never pay its creator. The business bet is that wider adoption will generate enough revenue or strategic value elsewhere to justify the cost of developing and releasing the model.

Shaping AI ecosystem

The longer-term prize is influence. A widely-used model can attract developers who build applications and tools around it. These additions can make the model easier to deploy and use, potentially attracting more developers. This reinforcing cycle is known as a network effect.

Distribution matters too. Making model weights downloadable is only one way to encourage adoption. Offering access via APIs, model hubs and inference platforms can make models easier for developers to discover, test and integrate into applications.

Mr. Zuckerberg argued Meta wants Llama to turn into an industry standard.

In a 2024 submission to the U.S. National Telecommunications and Information Administration, OpenAI identified brand recognition, recruitment and attracting developers as reasons firms release model weights. It also warned that widely distributing weights can make misuse harder to control, since users can modify models and remove safeguards.

The strategy is therefore not simply about giving technology away. It is about encouraging developers to build on a firm's models, potentially raising demand for its infrastructure, tools and services as AI applications evolve.

There are risks too

Not everyone believes more openness is always better. Anthropic CEO Dario Amodei argued open-weight models can be a public good but warned releasing models with dangerous capabilities can make harmful uses harder to prevent. Once weights are widely distributed, they cannot be withdrawn.

OpenAI has made a similar argument saying that access through an API allows a provider to monitor use and restrict access, while downloaded weights can be run independently, beyond the original developer's control. The trade-off is that open weights can widen access and encourage competition, but re-

duce the original developer's ability to intervene when a model is misused.

What it means for India
For Indian businesses, open-weight models offer an alternative to relying exclusively on foreign AI services.

Organisations can adapt models to Indian languages and local requirements and may choose to run them on their own infrastructure, depending on their computing resources and the model's licence.

India has its own efforts too. Sarvam AI has released models, including Sarvam 30B and Sarvam 105B while AIBharat at IIT Madras has made Indian-language models and tools available to developers.

BharatGen has also released models for Indian languages and domain-specific applications, including agriculture, law and Ayurveda. The objectives, however, vary. Commercial firms may seek revenue via applications and enterprise services while research initiatives may prioritise language access and domestic technical capability.

Open weights alone do not guarantee lower costs. Hardware, maintenance, performance and licensing still matter and organisations must assess if running a model themselves is more economical than using a hosted service.

3. WHY BIG TECH IS GIVING AWAY OPEN-WEIGHT AI MODELS

Source: The Hindu

Subject: GS Paper III — Science and Technology

Context: Technology companies are releasing open-weight AI models to attract developers, compete with Chinese AI firms and expand their technology ecosystems.

1. What Are Open-Weight AI Models?

1. **Meaning:** AI models whose trained parameters, called *weights*, are made available for download.
2. **Function:** Developers can run, customise and fine-tune these models for specific applications.
3. **Difference from Proprietary AI:** Proprietary models are generally accessed through company-controlled platforms or Application Programming Interfaces (APIs).
4. **Important Distinction:** Open-weight does not necessarily mean fully open-source, as training data and code may remain undisclosed.

2. Why Are Companies Releasing Them?

1. **Attract Developers:** Encourage businesses to build applications around their models.
2. **Generate Indirect Revenue:** Increase demand for cloud computing, AI hardware, hosting and enterprise services.
3. **Build Ecosystems:** Promote integrations, tools and software compatible with their models.
4. **Counter Competition:** Challenge Chinese models such as DeepSeek and Alibaba's Qwen.
5. **Gain Strategic Influence:** Make their technology widely adopted and potentially establish industry standards.

3. Examples of Open-Weight AI Models

1. **OpenAI:** Released GPT-2 weights in 2019 and launched *gpt-oss-120b* and *gpt-oss-20b* in August 2025. These models can be downloaded, customised and run on compatible infrastructure.
2. **Meta:** Llama models support a developer ecosystem around Meta's AI technology.
3. **DeepSeek (China):** DeepSeek-R1, a reasoning model released in January 2025.
4. **NVIDIA:** Nemotron models designed for applications such as reasoning, language and vision.
5. **India:** Sarvam AI and AI4Bharat develop models and tools for Indian languages and local applications.

4. Benefits and Risks

1. **Benefits:** Customisation, innovation, greater deployment control and reduced dependence on a single provider.
2. **Risks:** Misuse, removal of safeguards, privacy concerns and limited ability to withdraw models once their weights are distributed.
3. **Cost Limitation:** Free model weights do not eliminate computing, hardware, maintenance or hosting costs.

5. Significance for India

1. **Indian Languages:** Adapt models for diverse regional languages and local needs.
2. **Digital Sovereignty:** Enable organisations to deploy AI on their own infrastructure where feasible.
3. **Innovation:** Reduce entry barriers for startups, researchers and businesses.
4. **Policy Challenge:** Balance open innovation with privacy, accountability, cybersecurity and responsible AI development.

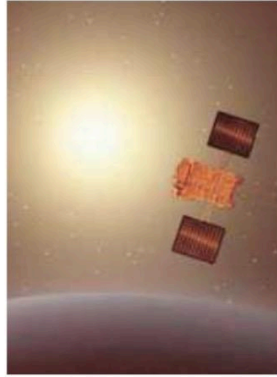
Aditya-L1 mission offers new insights into the direction of solar eruptions

Hemanth C.S.
BENGALURU

Scientists have generated Doppler velocity images of activities taking place in the solar corona using data obtained with the Visible Emission Line Coronagraph (VELC) payload onboard India's maiden solar mission, Aditya-L1.

The Aditya-L1 satellite generates Doppler velocity images of the solar corona, and these images are expected to provide information on the propagation of coronal mass ejections (CMEs) along the Sun-Earth direction, which has been unavailable to date.

Scientists at the Indian Institute of Astrophysics (IIA), who generated the Doppler velocity images, said it is well known that solar activity leads to the ejection of hot plasma. They said that the massive



ISRO's Solar Mission Aditya-L1 entering halo orbit.

and energetic plasma cloud ejected during powerful eruptions like the CMEs can travel either in the direction of the Earth or in any other direction from the Sun.

Scientists said that because CMEs can disrupt near-Earth space, it is important to infer their direction of propagation from the Sun as they erupt. "Un-

iversally, it is taught in high schools that the Doppler effect in sound helps to understand whether a train is approaching the railway station platform or moving away from it. A person standing on the platform would hear a steady increase in the pitch of the sound waves due to the train's whistle or horn when the train is coming into the station. The pitch would steadily decrease when the train is moving away from the station," scientists said.

Doppler velocity

Using a similar Doppler effect concept in light waves, the scientists have now generated Doppler velocity images.

"The positive and negative Doppler velocities indicate solar plasma moving away from and towards the direction of the observer,

respectively," they said.

The detailed software for processing the VELC data is developed by Dr V. Muthupriyal, Senior Project Scientist with the VELC payload operations team in IIA, and her team. The technical details related to the data processing have been published recently in the *Astrophysical Journal* after international peer review.

According to R. Ramesh, Senior Professor in IIA and Principal Investigator, VELC project, the Doppler velocity images of the solar corona are unique. Only VELC has the capability to generate such images at present due to its one-of-a-kind spectroscopic observing capability in the visible wavelength range, he said. He added that the related processed images will be disseminated to the scientific community.

4. ADITYA-L1: NEW INSIGHTS INTO SOLAR ERUPTIONS

Source: The Hindu

Subject: GS Paper III — Space Technology

Context: Scientists from the Indian Institute of Astrophysics (IIA) have generated Doppler velocity images of the solar corona using the Visible Emission Line Coronagraph (VELC) aboard Aditya-L1, helping determine the direction of solar eruptions.

1. Key Scientific Findings

1. **Coronal Mass Ejections (CMEs):** Large eruptions of plasma and magnetic fields from the Sun.
2. **Direction of Ejection:** CMEs can travel towards Earth or in other directions. Identifying their trajectory helps assess potential impacts on Earth.
3. **Doppler Velocity Imaging:** Uses changes in the wavelength of light to determine whether solar material is moving towards or away from the observer.
4. **Significance:** Improved understanding of CME propagation can strengthen space-weather monitoring and early warnings.

2. Aditya-L1: Important Facts

1. **India's First Solar Space Observatory** dedicated to studying the Sun.
2. **Launch:** 2 September 2023, by the Indian Space Research Organisation (ISRO).
3. **Orbit:** Halo orbit around the Sun–Earth Lagrange Point 1 (L1), approximately 1.5 million km from Earth.
4. **VELC:** Visible Emission Line Coronagraph; studies the solar corona and observes it in visible wavelengths.
5. **Other Objectives:** Study solar flares, solar wind, coronal heating and space-weather phenomena.

3. Why Is This Important?

1. **Earth's Infrastructure:** Strong solar eruptions can disrupt satellites, communication, navigation and power grids.
2. **Space Weather Forecasting:** Knowing a CME's direction helps assess whether it may affect Earth.
3. **Scientific Advancement:** VELC's spectroscopic observations enable researchers to study the motion of solar plasma.



Growing market: People wait for their electric scooters at a vehicle charging and battery-swapping station in Bengaluru. SUDHAKARA JAIN

Can India turn retrofitment into the next mobility revolution?

Unlike new EV manufacturing, which rewards scale and centralisation, retrofitment rewards distribution through local workshops, technicians and entrepreneurship; with the right training, neighbourhood mechanic shops can become certified retrofitters, absorbing the existing workforce

Jaideep Saraswat
Ashish Dokania

For decades, India's growth story has been written in a familiar script: take a technology invented elsewhere, strip it down, re-engineer it for cost, and scale it for the masses. Generic drugs, low-cost telecom, frugal automobiles are examples of this approach. It is a script that India has performed brilliantly. The question India must ask now is whether it is ready to move from optimisation to creation.

There are signs that it already has. Digital payments existed long before Unified Payments Interface (UPI), yet UPI reimaged the entire architecture of a transaction and created a model good enough that other countries want to emulate. Retail existed long before quick commerce, yet ten-minute delivery rewired consumer expectations in a way no global template had. In both cases, India moved beyond the familiar script and engineered a new category of implementation for existing systems. These models are suited to India's density, informality, and scale. Now, they are travelling across borders. Mobility presents a similar opening.

Vehicle retrofitment

Vehicle retrofitment sits at the centre of the new opportunity. Retrofitment, which converts an existing petrol or diesel vehicle into an electric one by replacing the powertrain, keeps the chassis intact. It is a useful technical fix, but a genuine

innovation opportunity arises from everything that needs to be built around it – from diagnostics for legacy vehicles, battery and power-electronics systems designed for retrofitted architectures, calibration software, testing protocols, safety certification, financing solutions, installation networks, and a skilled service workforce. Innovation arises from moving beyond a single product to creating an entire operating system for a new industry, whose definitive version is not built yet.

India has the raw ingredients to attempt it: a deep automotive supply chain, engineering talent that has already proven itself in frugal design, a fast-growing EV sector, credible software capabilities, and critically, a domestic market large and varied enough to pressure-test solutions.

The decentralisation edge

India's advantage is structural. Unlike new EV manufacturing, which rewards scale and centralisation, retrofitment rewards distribution like local workshops, local technicians, and local entrepreneurship. India has already shown what decentralised infrastructure delivery looks like at scale.

The PM Surya Ghar Yojna (PMSGY) on rooftop solar has now reached over 63 lakh households, built through a network of more than 34,000 empanelled vendors that has generated more than 4.6 lakh jobs across the solar rooftop value chain. Here is the blueprint for what a retrofitment ecosystem could look like,

encompassing not a few large factories, but thousands of certified local centres. Each centre can convert, service, and maintain vehicles while generating an average of at least 20 direct and indirect jobs.

India's automotive geography is not confined to its metros. Millions of vehicles run in Tier-II and Tier-III towns and rural India, held together by an enormous, largely informal network of mechanics, garages, and spare-parts dealers. With the right standards and training, that existing workforce can be absorbed, converting neighbourhood mechanic shops into certified retrofitters. That proximity between service providers and vehicle owners also solves a trust problem that new technologies always face.

An opportunity for the Global South

The opportunity extends beyond India's border. Countries across South Asia, Southeast Asia, Africa, and Latin America share the same three conditions that make retrofitment relevant in India. They have large fleets of ageing vehicles, price-sensitive consumers, and ownership cycles far longer compared to wealthier markets. Collectively, the Global South spends more than \$550 billion a year importing oil, a dependence that new EV sales alone will take decades to meaningfully dent, since new vehicles replace only a fraction of the fleet each year.

Retrofitment offers these countries a faster and cheaper route to displacing that fuel bill using vehicles already on

their roads.

This is precisely the shape of opportunity UPI has already proven India can capture. UPI-linked payments are now live in eight countries, and India has signed digital-infrastructure cooperation agreements with 23 more. This was realised not because India sold a payments app, but because it exported a replicable model and an implementation playbook that other countries could adapt to.

Retrofitment could follow the same arc. If India builds the certification standards, financing models, safety protocols, and training pipelines for retrofitment near home, and at scale, it will have effectively built an exportable system.

Other nations with similar vehicle fleets and fuel-import pressures would rally behind it.

None of this happens by accident. It requires India to treat retrofitment, not as a stopgap measure to be tolerated until new EVs become universally affordable, but as a genuine innovation category to be engineered deliberately. India has the right pieces, the engineering talent, the manufacturing base, the technician networks, and the domestic testing ground. Now it needs the intent to bring these pieces together for retrofitment at the scale of PMSGY.

(Jaideep Saraswat is the Associate Director of the Clean Power, Electric Mobility & Emerging Technologies vertical at Vasudha Foundation. Ashish Dokania is the CEO of Green Tiger Mobility Private Limited. The authors declare no competing interest.)

5. Can India Turn Retrofitting into the Next Mobility Revolution?

Source: The Hindu

Subject: GS Paper III — Economy, Environment and Science & Technology

Context: Vehicle retrofitting converts existing petrol or diesel vehicles into electric vehicles (EVs), offering India a pathway to affordable electrification, local employment and cleaner mobility.

1. What Is Vehicle Retrofitting?

1. Replacing a conventional engine with an electric motor, battery and associated power electronics.
2. Extends the useful life of existing vehicles without requiring owners to purchase new EVs.
3. Creates opportunities for local workshops, technicians and small enterprises.

2. Significance for India

1. **Affordable Mobility:** Can reduce electrification costs by reusing existing vehicles.
2. **Energy Security:** Reduces petrol and diesel consumption when conventional engines are replaced by electric powertrains.
3. **Employment Generation:** Supports certified retrofit workshops, skilled technicians and local entrepreneurship.
4. **Circular Economy:** Extends vehicle life and may reduce demand for new materials and vehicle manufacturing.
5. **Global South:** Offers potential for countries with large existing vehicle fleets and price-sensitive consumers.

3. Government Framework and Data

1. **AIS-123:** Establishes technical requirements for specified hybrid-electric vehicle retrofits.
2. **Motor Vehicle Regulations:** Retrofitted vehicles must comply with applicable safety, testing and approval requirements.
3. **PM E-DRIVE:** A ₹11,900 crore government scheme supporting electric mobility and charging infrastructure, with implementation extended to March 2028. It is not a dedicated vehicle-retrofitting subsidy.
4. **EV Adoption:** By 27 January 2026, 22.12 lakh electric vehicles had been sold under PM E-DRIVE, including 19.19 lakh electric two-wheelers and 2.93 lakh electric three-wheelers.

4. Major Challenges

1. **Safety:** Poor-quality batteries and faulty installations can cause fires and electrical failures.
2. **Cost:** Batteries and certified conversion kits may make retrofitting uneconomical for some vehicles.
3. **Performance:** Battery range, vehicle weight, durability and resale value affect consumer acceptance.
4. **Regulatory Barriers:** Certification, registration, insurance and warranty requirements can complicate conversions.
5. **Limited Ecosystem:** Shortages of trained technicians, reliable components and authorised workshops constrain adoption.
6. **Environmental Trade-offs:** Battery manufacturing, electricity sources and disposal determine the overall environmental benefits.

5. Way Forward

1. Expand certified retrofit centres and technician training through Industrial Training Institutes (ITIs).
2. Promote affordable, standardised conversion kits and domestic manufacturing of components.
3. Facilitate financing for commercial fleets and vehicles where conversion is economically viable.
4. Simplify certification and registration while maintaining strict safety standards.
5. Integrate retrofitting with charging infrastructure, battery recycling and wider EV policies.

Conclusion: Retrofitting can complement new EV manufacturing by converting suitable existing vehicles into cleaner transport assets while supporting local employment and India's circular economy.

Terror ecosystem must be dismantled, Rajnath tells SCO

Saurabh Trivedi

NEW DELHI

There can be no justification for terrorism and no double standard in tackling the menace, Defence Minister Rajnath Singh said on Tuesday as he called upon the member states of the Shanghai Cooperation Organisation (SCO) to dismantle the entire ecosystem of terrorism.

Speaking at the 25th meeting of the SCO Council of Heads of Government in Dushanbe, Tajikistan, in the presence of Pakistan's Deputy Prime Minister Ishaq Dar, Mr. Singh stressed that there can be no place for "those who provide safe havens to terrorists".

"Terrorism results in the loss of innocent lives and disrupts investment and commerce. It radicalises societies and deprives youth of the opportunities they rightfully deserve. There can be no justification for terrorism, no double standard in addressing



Defence Minister Rajnath Singh at a meeting of the SCO Council of Heads of Government in Dushanbe, Tajikistan, on Tuesday. ANI

it, and no place for those who finance, support, or provide safe havens to terrorists," Mr. Singh said.

He recalled Prime Minister Narendra Modi's remarks at the recent SCO Summit in Bishkek, Kyrgyzstan, calling for concrete steps on security, connectivity, and opportunity.

Mr. Singh said the bloc must adhere to the principles of sovereign equality, consensus, and mutual respect.

The Defence Minister al-

so called for strengthening resilient supply chains, facilitating trade and investment, and leveraging technology to address global uncertainties arising from geopolitical tensions, trade disruptions, and concerns over energy and food security. India supported the adoption of an action plan for the multilateral trade and economic cooperation for the period 2026-2030, he said.

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6. TERROR ECOSYSTEM MUST BE DISMANTLED: INDIA AT THE SCO

Source: The Hindu

Subject: GS Paper II — International Relations | GS Paper III — Internal Security

Context:

At the Shanghai Cooperation Organisation (SCO) Council of Heads of Government meeting in Dushanbe, Tajikistan, Defence Minister Rajnath Singh called for dismantling the entire ecosystem supporting terrorism. He emphasised zero tolerance, rejection of double standards and collective action against terrorist networks.

1. India's Position on Terrorism

1. **Zero Tolerance:** No justification for terrorism, irrespective of political, religious or ideological claims.
2. **Dismantling the Terror Ecosystem:** Target terrorist financing, weapons supply, recruitment, logistical support and safe havens.
3. **No Double Standards:** Terrorist groups must not be treated differently for political convenience.
4. **Human and Economic Costs:** Terrorism causes civilian casualties, disrupts trade and investment, and undermines development.
5. **Collective Action:** Strengthen regional cooperation while respecting sovereignty and international law.

2. Shanghai Cooperation Organisation (SCO)

1. **Established:** 15 June 2001, in Shanghai, China.
2. **Predecessor:** Shanghai Five mechanism, established in 1996.
3. **Headquarters:** Beijing, China.
4. **Nature:** Eurasian intergovernmental organisation focused on security, political cooperation and economic development.
5. **Current Members — 10:** China, Russia, India, Pakistan, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Iran and Belarus.
6. **Expansion:** India and Pakistan joined in 2017, Iran in 2023 and Belarus in 2024.
7. **Official Languages:** Chinese and Russian.

3. SCO's Counterterrorism Mechanism

1. **Regional Anti-Terrorist Structure (RATS):** Permanent SCO mechanism for cooperation against terrorism, separatism and extremism.
2. **Headquarters:** Tashkent, Uzbekistan.

3. **Functions:** Information exchange, coordination among security agencies and joint counterterrorism cooperation.

4. Significance for India

1. **Regional Security:** Facilitates intelligence-sharing and coordinated action against terrorist networks.
2. **Central Asian Engagement:** Strengthens India's political, economic and security relations with Central Asian countries.
3. **Afghanistan:** Provides a platform to discuss regional instability and cross-border security threats.
4. **Economic Cooperation:** Supports opportunities for trade, investment, energy cooperation and regional connectivity.
5. **Multilateral Diplomacy:** Enables engagement with China, Russia, Iran and Central Asian states within a common forum.

5. Major Challenges

1. **India–Pakistan Tensions:** Bilateral disputes can obstruct consensus and practical cooperation.
2. **Divergent Interests:** Members have different strategic priorities and approaches to regional security.
3. **Implementation Gap:** Political declarations may not translate into consistent action against terrorist networks.
4. **Connectivity Constraints:** Geopolitical tensions restrict India's access to Central Asian markets.
5. **Regional Instability:** Security threats originating in Afghanistan can affect the wider region.

6. Way Forward

1. **Intelligence Integration:** Strengthen real-time intelligence-sharing, joint investigations and coordination among national security agencies through SCO mechanisms.
2. **Disrupt Terror Financing:** Improve cooperation against money laundering, illicit financial flows, terror funding and the misuse of digital payment systems.
3. **Uniform Counterterrorism Standards:** Ensure that all terrorist organisations are treated consistently, without political selectivity or double standards.
4. **Technology and Cybersecurity:** Develop cooperation to counter online radicalisation, terrorist propaganda, recruitment and the use of emerging technologies for attacks.
5. **Accountability and Implementation:** Establish measurable follow-up mechanisms to translate SCO declarations into practical action.
6. **Regional Confidence-Building:** Deepen cooperation among member states while respecting sovereignty, international law and legitimate security concerns.

Conclusion: The SCO can become a more effective regional security platform only when its members move beyond political declarations and demonstrate sustained cooperation against terrorist financing, safe havens and support networks. For India, consistent implementation and collective accountability remain essential.

Crackdown on protesters violates India's international legal obligations: UN experts

Kallol Bhattacharjee

NEW DELHI

Against the backdrop of ongoing protests against the deletion of voters from the electoral roll by the Election Commission of India, a group of globally recognised rapporteurs and experts on human rights have said that the recent actions by the Indian security agencies and the police in Delhi violate India's "core international legal obligations".

In a joint statement by the experts, issued by the UN Human Rights Office of the High Commissioner (OHCHR), the experts pointed out that "over 7,000 youths, journalists, human rights defenders" were detained in New Delhi arbitrarily during the protests, and expressed concern over reports of sexual violence.

"These actions violate India's core international legal obligations, including the rights to freedom of peaceful assembly, freedom of expression, liberty, security of the person, and the right to defend human rights," the experts said, adding that, "any restrictions on peaceful assembly



The UN Human Rights Office has called for independent, impartial and thorough investigation without delay. FILE PHOTO

must be legal, pursue a legitimate aim, and be necessary and proportionate". The statement said that the crackdown revealed a "broader troubling pattern" wherein the Indian authorities have been using "undue restrictions on peaceful assembly, excessive use of force, arbitrary detentions, enforced disappearances and the targeting of student activists..."

Demanding "reparations", the experts called for "independent, impartial and thorough investigation" into the activities of the law enforcers and associated forces "without delay".

The experts whose names appear in the state-

ment are Gina Romero, Margaret Satterthwaite, Cecilia M. Bailliet, Farida Shaheed, Bethanie Margaret Carney Almroth, Ivana Krstic, Haina Lu, Dorothy Estrada-Tanck, Claudia Flores, Laura Nyirinkindi, Grazyna Baranowska, Ana Lorena Delgadillo Perez, Gabriella Citroni, Aua Balde, Mohammed Al-Obaidi, Astrid Puentes Riano, Elena Carolina Diaz Galan, Sofia Monsalve Suarez, Nicolas Levrat, Leopoldo Maldonado Gutierrez, Andrea Bolanos Vargas, Pau Perez Sales, Reem Alsalem, and Ana Brian Nougères.

The External Affairs Ministry is yet to respond to the latest remarks from UN human rights experts.

7. UN EXPERTS RAISE CONCERNS OVER RESTRICTIONS ON PROTESTS IN INDIA

Source: The Hindu

Subject: Prelims | International Human Rights Treaties

Context: UN human rights experts raised concerns over reported detentions and restrictions on peaceful protests in India, highlighting the country's obligations under international human rights law.

1. International Covenant on Civil and Political Rights (ICCPR), 1966

1. **Adoption:** Adopted by the United Nations General Assembly on 16 December 1966; entered into force on 23 March 1976.
2. **Objective:** Protects civil and political rights, including life, liberty, freedom of expression and peaceful assembly.
3. **India's Status:** India acceded to the ICCPR on 10 April 1979. The Covenant is legally binding on India under international law.
4. **Important Articles:**
 - **Article 6:** Right to life.
 - **Article 9:** Right to liberty and security; protection against arbitrary arrest and detention.
 - **Article 19:** Freedom of expression.
 - **Article 21:** Right to peaceful assembly.
 - **Article 22:** Freedom of association.
5. **Permissible Restrictions:** Restrictions on expression and peaceful assembly must meet the conditions specified in the Covenant, including legality and necessity.
6. **Monitoring Body:** The UN Human Rights Committee monitors implementation of the ICCPR by States Parties.

2. Other Important International Instruments

1. **Universal Declaration of Human Rights (UDHR), 1948:** Adopted by the UN General Assembly; a declaration rather than a treaty. Articles 19 and 20 address freedom of expression and peaceful assembly.
2. **International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966:** India is a party; protects rights relating to work, education, health and an adequate standard of living.
3. **Convention against Torture (CAT), 1984:** India signed it in 1997 but has not ratified it.