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Smart glasses highlight gaps in privacy laws

In June, reality star Kylie Jenner posted her latest collaboration on social media – a new design for Meta’s line of AI-powered “smart glasses”. Images of her wearing the glasses filled social media, as did videos of her teenage self lamenting the lack of privacy she was afforded because of her fame. The irony was unmissable: how is Ms. Jenner, who was once so worried about privacy, now promoting a device that enables surveillance?

Smart glasses are the latest addition to the wearable technology space. It is also a dangerous example of how current laws are unable to keep up with today’s tech innovation.

According to Meta, these glasses allow you to see and answer calls, messages, and notifications via voice command. Built-in speakers help you listen to music and an integrated camera enables you to capture photos or videos through the lenses. Meta describes these glasses as “normal-looking eyewear with discreetly integrated glasses technology.” Hidden from the naked eye, these glasses contain “tiny speakers, microphones, [and] a lightweight camera.” The tech giant isn’t shying away from how inconspicuous these features are; rather, it is flaunting it.

Privacy and data concerns

In India, the glasses, which have been advertised everywhere, retail at around ₹25,000. Stickers that claim to completely cover the LED recording indicator are also widely available. Meta says that if the LED is covered, the glasses will block the recording until the sticker is removed. Yet, workarounds are just a Google search away. The glasses also make a shutter sound when they start and stop recording, but this is not a strong indicator that you are being recorded. Further, Meta argues that the glasses are “designed for privacy, controlled by you.” But this “control” is limited to the wearer, and not the recorded



Sonikka Loganathan

As wearable tech becomes more advanced, banning it will become increasingly difficult. Instead, laws should be framed with an understanding of how AI is changing the landscape

subject, such as requiring additional verification before use.

The website adds, “Meta collects data needed to help ensure that your glasses and app are reliable, secure and operating normally.” An investigation by Swedish newspapers *Svenska Dagbladet* and *Goteborgs-Posten* found that Meta’s contracted workers, who sometimes review the data to track user experience, were able to view sensitive content filmed on the smart glasses, including wearers using the toilet. In a comment to *BBC News*, Meta said its privacy policy states that it sometimes uses contractors to review data shared with them.

In this context, concerns about women’s privacy have grown. Data from the National Crime Records Bureau (NCRB) show that in 2023, before the glasses entered the market, there were 3,678 cases of women-centred cybercrimes. Of these, 2,767 cases involved the transmission or publication of sexually explicit material. Consider how much easier these glasses would make it to record people without their knowledge, including in private spaces. The potential risks to children are equally concerning. In 2023, the NCRB recorded over 698 cases related to the use or storage of child sexual abuse material. If adults cannot often recognise when the glasses are recording, a child certainly cannot.

These risks are compounded by the glasses’ battery life, offering 4-9 hours of active use. This means entire movies can be recorded, university lectures can be taped, confidential documents scanned, and patient information collected. It also means that even those who are not intentionally engaging in malpractice could invariably do so – by capturing something private in the frame’s periphery, for example. Ultimately, these glasses allow for the extensive, non-consensual collection of data.

Lacuna in the law

India’s laws today do little to

protect people from this surveillance. The Digital Personal Data Protection Act, 2023 (DPDPA) is technologically agnostic, making the purpose of data collection the key consideration. In a public space, people can neither grant consent nor monitor how their information is used.

Following the landmark *K.S. Puttaswamy vs. Union of India* 2017 judgment, reasonable expectation of privacy was recognised as a fundamental right under Article 21. This means that people, even in public spaces, don’t generally expect to be captured in detail. But the DPDPA excludes information that is made publicly available. Hence, the reasonable expectation of privacy granted by *Puttaswamy* is not met because the Act does not regulate how someone is being recorded in public. The Act’s scope is diluted further since there are minimal indicators that you could be in someone’s frame, unlike someone recording on their phone.

This combination of rapid tech innovation and a lack of legal regulation and public awareness creates the perfect storm. With devices such as these glasses becoming common, people may be collecting information with little knowledge of where the data are being used. Without legal safeguards, digital accountability risks becoming an afterthought.

Banning such devices isn’t practical from a business or tech standpoint. Meta might be the biggest player in this space today, but Google and Reliance are also entering the smart glasses market. As wearable tech becomes more advanced, banning it will become increasingly difficult. Instead, laws should be framed with an understanding of how AI is changing the landscape. There is a need for assessments on how technology will evolve, the risks that may accompany it, and the government’s responsibility in ensuring that citizens are adequately protected.

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12. निजता का अधिकार, प्राण तथा दैहिक स्वतंत्रता के आंतरिक भाग के रूप में, संविधान के अनुच्छेद 21 के अन्तर्गत स्वाभाविक रूप से संरक्षित है। व्याख्या कीजिये। इस संदर्भ में एक गर्भस्थ शिशु के पितृत्व को सिद्ध करने के लिये डी.एन.ए. परीक्षण से सम्बन्धित विधि की चर्चा कीजिये। (उत्तर 250 शब्दों में लिखिए)

Right to privacy is intrinsic to life and personal liberty and is inherently protected under Article 21 of the constitution. Explain. In this reference discuss the law relating to D.N.A. testing of child in the womb to establish its paternity. (Answer in 250 words) 15

- Q1. स्व-अभिनिर्धारण से सम्बन्धित निजता का अधिकार प्रत्येक व्यक्ति को प्रिय है तथा संविधान के अनुच्छेद 21 में भली-भाँति संरक्षित है। इस संदर्भ में, उभयलिंगी (ट्रांसजेंडर) व्यक्ति (अधिकारों का संरक्षण) अधिनियम, 2019 में 2026 के संशोधन के प्रभाव का परीक्षण कीजिए।

(उत्तर 150 शब्दों में दीजिए)

Right to privacy relating to self-identity is very dear to every human being and well protected under Article 21 of the Constitution. In this context, examine the effect of the amendment in 2026, to the Transgender Persons (Protection of Rights) Act, 2019.

(Answer in 150 words) 10

79. 'Right to Privacy' is protected under which Article of the Constitution of India?

(a) Article 15

(b) Article 19

(c) Article 21

(d) Article 29

1. AI Smart Glasses: The Emerging Challenge to Privacy

Source: The Hindu | **GS:** GS-II — Fundamental Rights, Governance | GS-III — Science & Technology

Context: The emergence of **Artificial Intelligence-enabled smart glasses** capable of discreetly recording images, audio and surroundings creates a new privacy challenge. The central issue is **how to protect a person who is being recorded without knowing it**, particularly when existing privacy law relies significantly on notice, consent and accountability.

Basic Information

1. Smart Glasses: Wearable devices equipped with **cameras, microphones, speakers and Artificial Intelligence**, allowing real-time recording and processing.

2. Distinct Risk: Unlike conventional cameras, they can make recording **mobile, continuous and inconspicuous**, creating the possibility of unnoticed surveillance.

I. Why Smart Glasses Challenge Privacy

1. Consent: A person cannot meaningfully consent if they **do not know that they are being recorded**.

2. Bystander Privacy: The device belongs to the wearer, but the information captured may belong to **other individuals who have never consented**.

3. Dignity & Autonomy: Recording in sensitive situations can expose personal conversations, images or activities, affecting an individual's **dignity and autonomy**.

4. Artificial Intelligence Amplification: Recorded material can potentially be analysed, identified or profiled using Artificial Intelligence, making the privacy risk greater than ordinary photography.

II. Constitutional Protection

1. Article 21: The **Right to Privacy** is a Fundamental Right derived from the Right to Life and Personal Liberty.

2. K.S. Puttaswamy v. Union of India (2017): The Supreme Court recognised privacy as a Fundamental Right encompassing **dignity, autonomy and informational privacy**.

3. Informational Privacy: Individuals have a legitimate interest in controlling how information about them is **collected, processed and disseminated**.

4. Proportionality: Where privacy is restricted by the State, the restriction must satisfy **legality, legitimate aim and proportionality**.

III. Indian Legal Framework

1. Digital Personal Data Protection Act, 2023: Parliament enacted the **Digital Personal Data Protection Act, 2023** to regulate the processing of digital personal data while recognising an individual's right to protect personal data.

2. Data Fiduciary: The Act places obligations on entities determining the **purpose and means of processing personal data**, including requirements relating to notice, consent, security and accountability.

3. Rights of Individuals: The Act provides rights including **access to information, correction and erasure, grievance redressal and nomination**.

4. Children: It provides additional safeguards for processing the personal data of **children**, recognising their heightened vulnerability.

5. The Legal Gap: Smart glasses create a difficult question that conventional consent mechanisms do not easily answer: **when an unsuspecting bystander is incidentally recorded, who obtains consent and who becomes responsible for that data?**

IV. What Needs to Change

1. Privacy by Design: Devices should have **clearly visible recording indicators and privacy controls**, particularly for sensitive environments.

2. Bystander Protection: Privacy safeguards should protect not only the **device user but also people captured by the device**.

3. Data Minimisation: Unnecessary recording, retention and processing should be restricted.

4. Technology-Responsive Regulation: India's privacy framework must keep pace with **Artificial Intelligence, wearable devices and increasingly pervasive surveillance**.

5. Balance Innovation with Rights: Regulation should prevent misuse without unnecessarily restricting legitimate applications in **healthcare, accessibility, communication and productivity**.

Wearing hijab not established as 'essential religious practice' for women in Islam, says HC

Ishita Mishra

NEW DELHI

The Allahabad High Court recently held that wearing a headscarf could not be established as an “essential religious practice” of Islam. The observation was made on a Muslim student’s petition for permission to wear hijab along with her school uniform.

A Division Bench of Justices J.J. Munir and Indrajeet Shukla, in an order of August 21, dismissed the petition filed by a Class 11 student of Tagore Public School in Prayagraj.

In her plea, the student argued that wearing the scarf was an essential religious practice protected by her fundamental rights under Articles 14 and 19(1)(a) of the Constitution. She had previously worn a headscarf at the same school from Class 6 without objection, she said.

The fact that the student



The court said the dispute was principally about compliance with institutional dress code.

had worn the scarf for several years did not create an enforceable right to compel the school to relax or alter its uniform policy, the High Court said.

“We have perused the photographs from various classes relating to the petitioner. Except for her, no other girl student is donning the headscarf, even those belonging to the same religious community as the petitioner. Wherever this issue has arisen, the

High Courts have been unanimous in opinion that wearing a headscarf is not essential part of the Islamic faith, in the absence of which faith would be jeopardized,” the court said.

No factual foundation had been laid nor material placed on record to establish that donning headscarf was an essential part of religion for a Muslim female, the High Court further said. The court relied on the judgments of the Bombay and Karnataka High Courts concerning hijab.

It held that the dispute was principally about compliance with an institutional dress code rather than interference with the student’s freedom of faith.

“The school in this case does not seek to curtail the petitioner’s freedom of faith at all. All that they require is conformity to institutional discipline, of which a uniform is an essential part,” it said.

2. Hijab, Religious Freedom and the Essential Religious Practices Doctrine

Source: The Hindu | **GS:** GS-II — Fundamental Rights, Secularism, Judiciary

Context: The **Allahabad High Court** dismissed a Class XI student's plea seeking permission to wear a **hijab with her school uniform**. The Court held that she had not established the hijab as an **Essential Religious Practice (ERP)** and treated the issue primarily as one concerning compliance with the institution's dress code.

I. Constitutional Framework

1. **Article 25:** Guarantees **freedom of conscience** and the right to profess, practise and propagate religion, subject to **public order, morality, health and other Fundamental Rights**.
2. **Articles 14 & 15:** Religious freedom must operate within the principles of **equality and non-discrimination**.
3. **Article 21:** The constitutional protection of **dignity, autonomy and personal liberty** is also relevant to questions of individual religious choice.

II. Essential Religious Practices Doctrine

1. ***Shirur Mutt (1954)*:** The Supreme Court laid the foundation of the ERP doctrine, protecting practices that are **essential and integral to a religion**.
2. ***Durgah Committee (1961)*:** Distinguished essential religious practices from **later accretions or practices not integral to the faith**.
3. ***Bijoe Emmanuel (1986)*:** Protected students who respectfully declined to sing the National Anthem on grounds of conscience, reinforcing **individual freedom of conscience under Article 25**.

III. Evolution of Hijab Jurisprudence

1. **Kerala High Court — *Fathima Thasneem (2018)*:** Emphasised the importance of an educational institution's **dress-code and institutional autonomy** in a dispute over religious attire.
2. **Karnataka High Court (2022):** In the Udupi hijab case, the Full Bench held that hijab had **not been established as an Essential Religious Practice** and upheld the institutional dress-code approach.

3. Supreme Court (2022) — *Aishat Shifa v. State of Karnataka*: Delivered a **split verdict**. One judge upheld the restrictions, while the other emphasised **individual choice, dignity and access to education**. Thus, there was no final unanimous Supreme Court ruling settling the hijab issue.

4. Bombay High Court (2024): Upheld a college dress-code restriction on religious attire, including hijab/niqab, broadly following the institutional-discipline approach.

5. Allahabad High Court (2026): Held that the petitioner had not provided sufficient basis to establish hijab as an ERP and that her earlier permission to wear it did not create an enforceable right to exemption from the uniform.

IV. Way Forward

1. Balance Rights and Discipline: Protect **freedom of conscience under Article 25** while permitting reasonable institutional dress codes.

2. Ensure Non-Discrimination: Dress rules should be **uniform, religion-neutral and consistently applied**.

3. Apply Proportionality: Restrictions should be **reasonable and proportionate**, avoiding unnecessary interference with religious expression.

4. Protect Education: Religious-dress disputes should not become barriers to **access, dignity and educational opportunity**.

Minister seeks fundamental shift in fight against drought

Global approach to droughts must move from reactive relief to proactive resilience, says Environment Minister Bhupender Yadav while addressing UNCCD conference in Mongolia

The Hindu Bureau
NEW DELHI

There ought to be a fundamental shift in the global approach to droughts from reactive relief to proactive, technology-enabled resilience, Union Environment Minister Bhupender Yadav said at the United Nations Convention to Combat Desertification (UNCCD) conference in Mongolia on Tuesday.

Addressing international delegates at the Ministerial Dialogue on “Accelerating Drought Resilience” in Ulaanbaatar during the 17th Conference of Parties (COP17) to the UNCCD, Mr. Yadav warned that dry spells are rapidly escalating. Drought is “no longer an occasional event, but a defining development challenge”, he said, citing its compounding disruptions to global water security, agricultural food systems, biodiversity, and economic stability.

‘Restore the forest’

He highlighted India’s coordinated, multi-institu-



Union Minister Bhupender Yadav says droughts are no longer an occasional event, but a defining development challenge. FILE PHOTO

tional approach integrating early warning, mitigation, relief and community resilience. Rainfall monitoring and satellite-based drought assessments trigger preparedness at the inter-ministerial and State levels, ensuring that a dry spell does not escalate into a crisis. Emphasising the critical link between land and water, he called for restoring “the forest, before the flow”, underscoring India’s focus on catchment and riverscape forestry to reduce erosion, improve water retention and recharge groundwater.

The Minister advocated

for integrating predictive technologies, localised early-warning monitoring, and proactive land management policies. The goal, he noted, is to equip vulnerable communities to anticipate and absorb environmental shocks rather than relying primarily on post-disaster relief.

Summit objectives

The ministerial talks form a central component of UNCCD COP17, hosted by Mongolia under the theme “Restoring Land. Restoring Hope”. Adopted in 1994 following the 1992 Rio Earth Summit, the UNCCD

is one of the three major Rio Conventions – alongside the framework conventions on climate change (UNFCCC) and biological diversity (CBD). It stands as the sole legally binding international agreement linking environmental management directly to sustainable land stewardship.

The 17th conference serves as a pivotal negotiation platform as land degradation currently impacts up to 40% of the planet’s land surface, undermining the livelihoods of billions of people worldwide.

During these biennial sessions, delegates from 197 member parties – alongside civil society leaders, scientists, and international financial institutions – convene to negotiate binding frameworks and policy guidance.

The agreements negotiated at COP17 aim to translate high-level environmental commitments into measurable, investable solutions for water and food security over the next decade.

3. United Nations Convention to Combat Desertification: From Drought Relief to Drought Resilience

Source: The Hindu | GS: GS-III — Environment, Agriculture, Disaster Management

Context: The 17th Conference of Parties (COP17) of the United Nations Convention to Combat Desertification (UNCCD) is being held in Ulaanbaatar, Mongolia, from 17–28 August 2026. India has emphasised moving from **post-drought relief to prevention, preparedness and long-term resilience**.

I. United Nations Convention to Combat Desertification — Basics

- 1. Origin & Mandate:** Adopted in **1994** after the 1992 Rio Earth Summit, the UNCCD focuses on **desertification, land degradation and drought**.
- 2. Global Framework:** It has **197 Parties** and is one of the **three Rio Conventions**, alongside the United Nations Framework Convention on Climate Change and Convention on Biological Diversity.
- 3. Scale of the Problem:** Around **40% of the world's land is degraded**, affecting billions of people and increasing pressure on food, water and livelihoods.

II. Drought: Why It Matters for India

- 1. Agricultural Vulnerability:** Around **51% of India's net cultivated area is rainfed**, making agriculture highly sensitive to rainfall variability.
- 2. Wider Impact:** Drought can trigger a chain of **water scarcity → crop losses → food insecurity → livelihood stress → migration**.
- 3. Climate Change:** Rising temperatures and changing rainfall patterns can increase the frequency and intensity of drought-related stress, making conventional relief measures increasingly inadequate.

III. India's Approach to Drought Resilience

- 1. Early Warning:** Use **satellite-based monitoring, rainfall data and forecasting** to identify drought conditions early.
- 2. Land & Water Restoration:** Promote **watershed development, groundwater recharge, rainwater harvesting and restoration of forests and catchments**.
- 3. Climate-Resilient Agriculture:** Encourage **drought-tolerant crops, efficient irrigation and diversified farming** to reduce dependence on rainfall.
- 4. Community Resilience:** Combine natural-resource management with **livelihood protection and local participation**, so communities can withstand drought rather than depend solely on relief.

IV. From Relief to Resilience

The important policy shift is: **Relief after drought** → **Early warning** → **Prevention** → **Adaptation** → **Resilience**

Instead of spending predominantly after a drought occurs, India needs greater investment **before the crisis**, particularly in water conservation, ecosystem restoration, drought-resistant agriculture and local preparedness.

V. Way Forward

- 1. Integrated Planning:** Treat drought as a combined **land–water–agriculture–livelihood** challenge.
- 2. Invest in Prevention:** Strengthen early-warning systems and pre-position resources before drought conditions become severe.
- 3. Restore Ecosystems:** Scale up **watershed, forest and soil restoration** to improve natural water retention.
- 4. Strengthen International Cooperation:** Use UNCCD platforms to mobilise **technology, finance and knowledge** for drought resilience, particularly for developing countries.

Strict enforcement cannot bridge institutional gaps

Tukaram Mundhe is the latest knight in shining armour to have emerged — the Maharashtra Food and Drug Administration (FDA) chief has struck terror in the hearts of Mumbai restaurants, many of which may have relegated the Food Safety and Standards Authority of India (FSSAI) and its regional representatives to the taxidermist's table as a toothless, long-dead tiger.

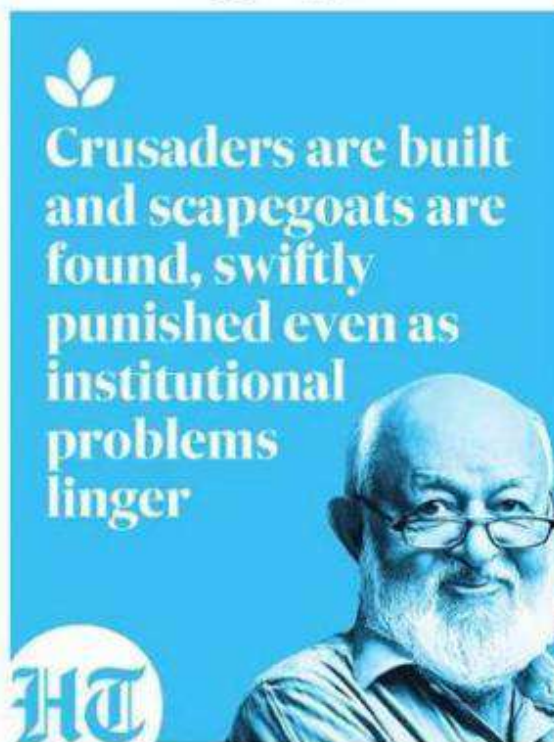
MNCs and Indian food joints alike are scurrying for cover; many, generally considered reputable, are shell-shocked to find licences suspended for months after inspections. Mundhe has even cracked down on sellers of food commodities sold loose that are especially prone to adulteration.

Why, then, is this saviour not being greeted with grateful hosannas but causing chills to run down many spines across the country? It doesn't require rocket science to unravel the mystery. Enforcement, over the past few years, has become synonymous with bureaucratic overreach, almost bulldozing in nature. And there has been an incomprehensible reluctance from the judiciary to keep this in check. In such a scenario, the material and reputational damage incurred by the targeted party has often been irreparable.

Two sayings sum things up here, the one about good intentions paving the path to hell and TS Eliot's poetic observation about the shadow falling between conception and creation (execution, in the bureaucratic context). Both the FSSAI and, now, the Maharashtra FDA seem unaware of adages and poetic warnings.

There was a time when the FSSAI had aroused hopes that it will partner with street food vendors and small eateries to help them adopt best practices in handling and producing food hygienically, and leverage standards to prosper. The authority spent much energy making consumers aware of the significance of labels and packaging, statutory warnings, and expiry dates.

But it wasn't long before the fine print became so small that no one would willingly squint to read it. Word wizardry did the rest. Sugar-free, zero trans fats, nature identical, etc, could confuse even the experts when numbers from some technical list followed in parentheses.



vives on natural immunity acquired to withstand the microbes in tap water, often due to the confluence of sewage-pipe contents and treated water deemed fit for human consumption.

It is the same for adulterated food grains and oils. Hoarding and black marketing have proved impossible to exterminate. Pathogens have become drug-resistant. It is definitely not the optimal condition, but can we really beat the virus?

The punishment prescribed by law is mandatory, but conviction needs much rigour to earn. So, the process is often made the punishment. Food safety and standards laws, like many other pieces of legislation, are meant to deliver public good but can also be weaponised by governments against political opponents. After decades-long deep slumber, authorities may, one day (sometimes close to a scheduled electoral battle) wake up and discover that offenders have violated fire- or food-safety norms. Those who suffer are often the small fry, not the sharks. At such times, partisan, even sectarian, patronage could undermine the governance intent of enforcement.



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4. Food Safety in India: Strengthening Regulation and Compliance

Source: Hindustan Times| **GS:** GS-II — Governance, Public Health | GS-III — Food Safety

Context: Recent food-safety enforcement in Maharashtra highlights the need for **effective implementation of food-safety standards**, combining enforcement with prevention, scientific testing and institutional capacity.

I. Legal and Institutional Framework

1. Food Safety and Standards Act, 2006: Provides the principal legal framework for ensuring **safe and wholesome food** and regulates its manufacture, storage, distribution, sale and import.

2. Food Safety and Standards Authority of India (FSSAI): A statutory authority under the Act responsible for **science-based food standards, regulation and coordination** with State authorities.

3. State Enforcement: Food Safety Officers undertake **inspection, sampling and enforcement**, supported by food-testing laboratories.

II. Maharashtra Example

The recent enforcement drive under **Tukaram Mundhe**, Commissioner of the Maharashtra Food and Drug Administration, demonstrates the importance of **regular inspection, regulatory accountability and action against food-safety violations**.

The broader lesson is that enforcement should become a **continuous regulatory process**, rather than an occasional response to violations.

III. Major Challenges

1. Weak Compliance: Food businesses, particularly smaller operators, may lack adequate awareness and capacity to consistently meet **hygiene, storage and handling standards**.

2. Scientific Capacity: Effective enforcement requires adequate **food laboratories, trained personnel and timely testing**.

3. Risk-Based Enforcement: Limited regulatory resources need to be concentrated on **high-risk foods, repeat offenders and vulnerable points in the supply chain**.

IV. Way Forward

- 1. Strengthen Testing:** Expand and modernise food laboratories and ensure **timely, reliable scientific analysis**.
- 2. Promote Preventive Compliance:** Combine enforcement with **training, hygiene awareness and technical assistance** for Food Business Operators.
- 3. Adopt Risk-Based Surveillance:** Prioritise **high-risk products and repeat violations** rather than relying mainly on routine inspections.
- 4. Improve Coordination:** Strengthen coordination among **Food Safety and Standards Authority of India, State authorities, laboratories and local bodies**.
- 5. Ensure Effective Deterrence:** Serious and repeated violations should attract **proportionate and timely penalties**, supported by sound scientific evidence.

The limits of air power, implications for theatre-isation +

The wars in Ukraine and Iran delivered the same verdict to every air force. Ukraine kept the larger air force at bay, while in Iran, the skies were dominated by the opposing side, yet air superiority still failed to end the war. Both point to the same limitation of air power: it has not grown weaker, but it is no longer sufficient to win a war on its own.

That is the real stake in India's own debate: its Air Force has long favoured operational flexibility over fixed commands – an approach proven against Pakistan but untested against China.

Air power's limits exposed

Two wars and one wider pattern illustrate three ways in which air power falls short.

The first is the denial of airspace. What determined control of Ukraine's skies was not Russia's aircraft numbers, but Ukraine's networked air defence. This is what the United States Air Force's 2025 guidance concedes: contested low-level airspace is a problem that air superiority alone cannot solve. For India, this cuts both ways – integrated air defence could deny China control of the skies, or leave India exposed to the same risk in reverse.

The second is dominance of the air space. The allied air campaign against Iran is the clearest case of dominance without a decisive outcome. The allies had complete control of the skies, yet Tehran held firm. What they could see, they hit; what Iran hid, it survived. That should concern India, because what has worked against Pakistan may not hold against China. Pakistan lacks strategic depth and can be stressed quickly; China, given its military capacity, can absorb losses and continue fighting.

The third is the cost-arithmetic. This structurally favours the weaker force. A Shahed-type drone (Iran) costs roughly \$20,000 to \$50,000, while the interceptors can cost millions. India saw a version of this during Operation Sindoor (May 2025), when Pakistan's cheaper drones forced the use of costlier



Harinder Singh
Retired Lieutenant General who commanded the Leh Corps during the 2020 Ladakh crisis

interceptors. Against China, that arithmetic operates on a much larger scale, and India is not yet prepared for it.

These limits are already forcing a doctrinal rethink across most modern air forces. For India, the challenge is structural: the centralised model of the Indian Air Force (IAF), proven against Pakistan, remains untested against China, where the terrain could compound these limitations.

The IAF's case against theatre-isation

The IAF favours flexibility over fixed commands. Four tests decide whether that position holds against China too.

The first is the flexibility principle. The IAF's claim is that what has worked before will work again. Against Pakistan, it did – Balakot (2019) and Sindoor demonstrated that. Against China, however, the numbers are tighter: 460-520 combat aircraft against the People's Liberation Army Air Force's roughly 65 squadrons. The mountains make the challenge even greater, with fewer airbases and less room to redeploy. So the flexibility that defines the IAF's approach may not hold where it matters most.

The second is the integration deficit. If flexibility cannot close the gap, then joint-ness might. Two parts can help bridge this deficit. The first is joint-force generation, which has never been built sufficiently for the China front. The second is peacetime jointness, which requires no new hardware, only training and shared planning. Kargil exposed this gap in 1999; the Ladakh crisis in 2020 showed that it still persisted.

The third is more institutional, than operational. Two aspects matter. The resistance is more about career progression than doctrine. Also, ranks do not map evenly across the three services, leaving joint chains of command unsettled. Neither factor determines whether flexibility or jointness will actually work, although both matter. The United States made joint postings mandatory; not a career risk.

The fourth is consultative authority. The IAF's own proposal – a Joint Coordination Centre – depends on everyone agreeing, and a crisis leaves no time for that. A theatre command puts one person in charge, with the power to act. The U.S., China and Israel have each already made that choice – not proof that it guarantees success, but evidence that a consultative process has its limits.

Of the four questions here, only one concerns how the IAF fights. The rest concern how India organises itself for the next war. That decision lies beyond the IAF; it belongs to India's political leadership, which has a larger stake in the outcome.

The cost of delay

The IAF's position is defensible where it has been tested – in Balakot and Sindoor. What it does not tell us is how quickly the force could mobilise or how effectively it could conduct joint operations against China.

The cost of leaving this debate unresolved is real. If, for instance, China moves into Ladakh the same week that Siachen Glacier flares up, someone will have to decide, in real time, which front gets the limited pool of Rafales and S-400 systems.

A jointness gap left unaddressed for another decade could mean that an Integrated Battle Group (IBG) commander along the Line of Actual Control is still planning around air support that may not reliably arrive when needed to defend India's territorial integrity. And if that were to happen, people would not remember the missing theatre command, but a military that was simply not ready for war.

None of this is a case against the IAF. It is a case against testing the IAF's convictions in a crisis, when there may be no second chance. Therefore, one could argue that theatre-isation does not dilute the IAF's flexibility; rather, it is the missing structure that could allow that flexibility to survive contact with the one border crisis India has not faced in many decades.

India's flexible air strategy faces an uncertain test against China

5. The Limits of Air Power and the Need for Integrated Theatre Commands

Source: The Hindu | **Page:** 8

GS: GS-III — Security & Defence

Context: Recent conflicts have exposed the **limitations of air power when employed in isolation**. For India, this has implications for how air assets should be organised and employed, particularly against the **China challenge** and in the context of ongoing **theatre-isation reforms**.

1. **Changing Nature and Limitations of Air Power**

1. Air Superiority Is Not Decisive Alone: Modern air-defence systems, dispersed forces and drones can restrict the ability to exploit air superiority. **Ukraine** demonstrates how layered air defence can deny an adversary complete control of the airspace.

2. Air Power Is Becoming Multi-Domain: Effective air operations increasingly depend upon **intelligence, surveillance, electronic warfare, drones, air defence and ground operations** working together.

3. Cost Asymmetry: The extensive use of relatively inexpensive drones in **Ukraine and the Iran conflict** highlights the need to combine sophisticated platforms with **affordable and scalable capabilities**.

4. Tactical Dominance ≠ Strategic Victory: The **Iran experience** illustrates that even significant air dominance may not automatically produce a decisive strategic outcome.

2. **India's Strategic Challenge**

1. China: The Himalayan theatre presents challenges of **terrain, altitude, distance and infrastructure**, while China's larger military-industrial and air-power capacity provides greater strategic depth.

2. Limited Air Assets: India's fighter strength makes the **optimal allocation and rapid concentration of available aircraft** critical during a high-intensity conflict.

3. Multiple Fronts: India must retain the ability to respond to simultaneous requirements on the **northern and western fronts**, making flexibility in the employment of air power important.

3. **India's Organisational Challenge**

The Indian Air Force's existing model provides **operational flexibility**, allowing aircraft to be concentrated where required. However, modern warfare also demands closer integration of the Army, Navy and Air Force in **intelligence, planning, communications, logistics and targeting**.

Therefore, India needs **greater jointness without unnecessarily sacrificing the flexibility of air power**.

4. Theatre-isation: The Need for an India-Specific Model

1. Unified Command: Theatre commands can bring Service capabilities under an integrated operational structure.

2. Faster Decisions: Clearly defined command authority can improve **speed and unity of operational decision-making**.

3. Better Resource Utilisation: Scarce capabilities can be allocated according to **theatre priorities and operational requirements**.

4. Preserve Flexibility: Theatre-isation should not rigidly confine air assets; the Indian Air Force must retain the ability to **rapidly redeploy and concentrate air power**.

5. Way Forward

1. Strengthen Jointness: Integrate **intelligence, communications, logistics, training and operational planning**.

2. Test Before Restructuring: Use realistic **China-centric and multi-theatre exercises** to assess command structures.

3. Modernise Capabilities: Strengthen **fighters, unmanned systems, air defence, surveillance and force multipliers**.

4. Ensure Clear Command Authority: Theatre commanders should have sufficient powers for **rapid operational decisions**.

5. Retain Flexibility: Build theatre structures that combine **unity of command with flexibility in air-power employment**.

Beijing accelerates South China Sea build-up with new installations

Reuters
Hong Kong, August 25

NEW INSTALLATIONS have been sighted on an islet near Antelope Reef in the Paracels archipelago of disputed South China Sea where analysts believe China is building its largest military base, according to satellite imagery reviewed by Reuters.

Security analysts say while it is too early to gauge definitively the likely function of the three-pronged construction on Yagong Island, it could be the start of an early warning radar facility to support eventual installations

on Antelope Reef.

Vantor, a commercial provider of satellite images, said it took the latest image on August 17, noting in other images that construction started in March and April.

While the purpose of the buildings was not certain, "several structures on Yagong Reef resemble other military radar/early warning facilities seen elsewhere in South China Sea and are likely associated with the ultimate military functions of nearby Antelope Reef," a Vantor spokesperson said.

Reuters reported last week

that China had completed the first phase of construction at Antelope Reef, highlighting the South China Sea as an increasingly militarised arena between China and the United States and its allies — and one that could prove critical in any future conflict over Taiwan.

The Antelope Reef images showed an artificial island nearly 6 km long, with a straight line of coast longer than 3 km that some analysts see as a potential runway. Yagong is far smaller, 14 km to the northeast of Antelope. Both lie within the Crescent Group in the west-

ern Paracels. The Chinese defence ministry did not respond to requests for comment.

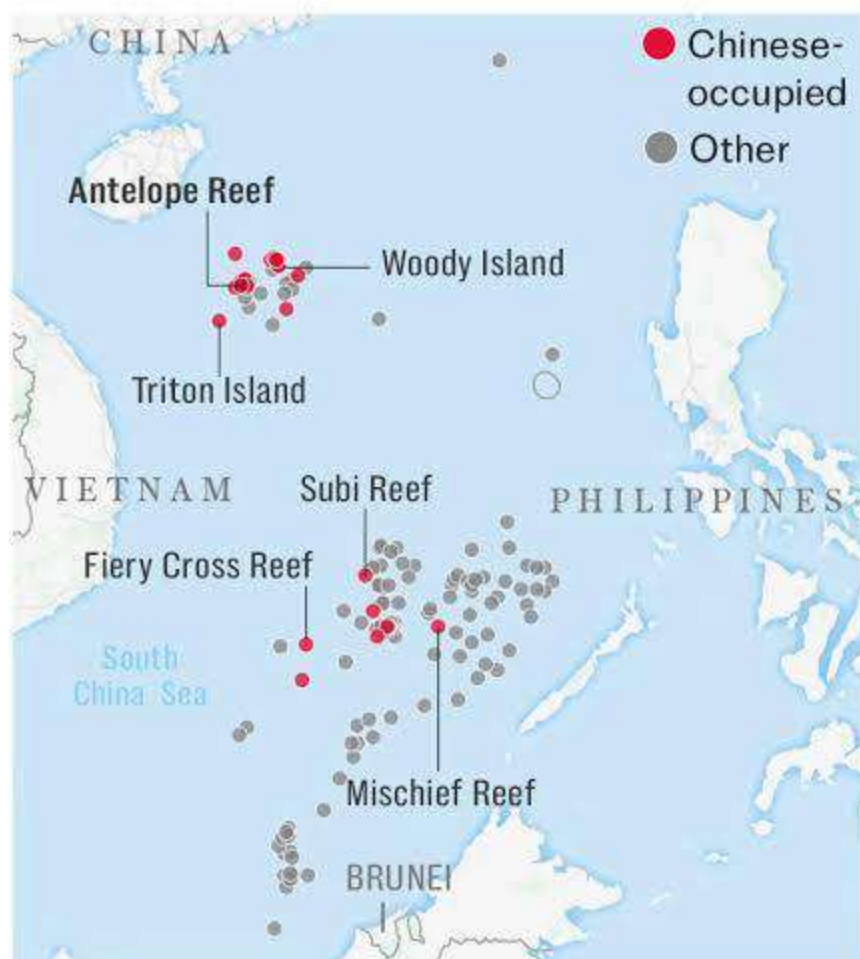
China has not acknowledged the construction of a new military base, and state media have said Antelope will meet civilian needs such as weather forecasting, fisheries protection and scientific research.

China has occupied the Paracels since 1974 when it seized them from the navy of the former South Vietnam. Vietnam, which claims the entire grouping as its own, has moved in recent years to expand its own network of bases in the Spratlys.



A satellite view of Yagong Reef in the Crescent Group of the Paracel Islands in the South China Sea. REUTERS

Chinese presence in the South China Sea



6. China's Strategic Expansion in the South China Sea

Source: The Indian Express | **Page:** Explained

GS: GS-II — International Relations | GS-III — Security

Context: China is rapidly developing infrastructure at **Antelope Reef** and **Yagong Island in the Paracel Islands**, signalling a further expansion of its strategic presence in the **South China Sea**. The development combines

land reclamation, maritime infrastructure and possible surveillance capabilities.

1. Antelope Reef: The Recent Development

- **Antelope Reef** lies in the **Crescent Group of the Paracel Islands**, which are disputed by **China, Vietnam and Taiwan**.
- China has undertaken large-scale reclamation, creating an artificial island of nearly **6 km**, including a straight stretch of over **3 km** that could potentially support a runway.
- A **deep-water harbour and wharf** have also been developed, increasing the site's potential logistical utility.
- At nearby **Yagong Island**, new structures have emerged. Their exact purpose is not publicly established, though their configuration has led to speculation about **radar or early-warning functions**.

2. Why the Development Matters

- Such infrastructure can enhance China's **surveillance, logistics and operational reach** across the northern South China Sea.
- It strengthens China's ability to maintain a **persistent presence around disputed maritime features**, rather than relying only on naval deployments.
- The development also reflects a broader pattern of using **land reclamation and infrastructure to consolidate strategic positions** in the South China Sea.

3. International Law: United Nations Convention on the Law of the Sea

The legal significance of reclamation must be understood through the **United Nations Convention on the Law of the Sea (UNCLOS), 1982**.

- **Article 60** permits coastal States to construct artificial islands and installations in their Exclusive Economic Zone, subject to the Convention.
- Crucially, **Article 60(8)** states that artificial islands **do not possess the status of islands**.
- Hence, reclamation of a reef does **not automatically create a new territorial sea, Exclusive Economic Zone or continental shelf**.

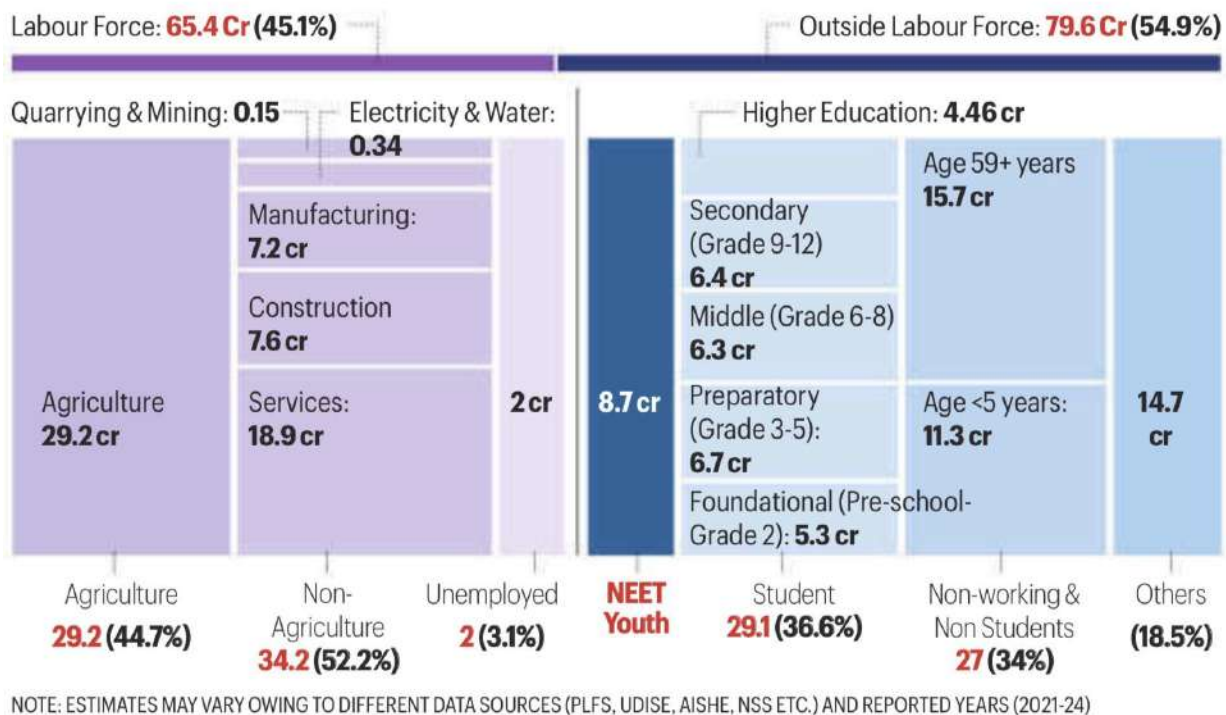
Key distinction:

Physical control/reclamation ≠ automatic legal maritime entitlement.

4. South China Sea Dispute: Legal and Strategic Dimensions

- The South China Sea has overlapping claims involving **China, Vietnam, the Philippines, Malaysia, Brunei and Taiwan**.
- The **2016 Philippines–China arbitration**, conducted under **Annex VII of UNCLOS**, examined questions relating to **maritime entitlements and the status of maritime features**.
- The Tribunal did **not decide territorial sovereignty over the islands**. China rejected the proceedings and the award.

• SEGMENTED VIEW OF INDIA'S POPULATION



7. NITI Aayog: Bridging the Gap Between Degrees and Jobs

Source: The Indian Express

Report: *Reimagining Skilling for Viksit Bharat@2047*, NITI Aayog

GS: GS-II — Human Resources | GS-III — Employment & Skill Development

Context: NITI Aayog identifies a structural **degree–employment mismatch** in India: expansion of higher education has not been accompanied by adequate job-relevant skills. The report argues for moving from **generic degree-based education to demand-driven, industry-linked skilling**.

1. **The Degree–Job Mismatch**

- Only **8.25% of graduates** are employed in jobs aligned with their qualifications; **over 90%** work in roles unrelated to their degrees.
- Graduate unemployment is **13%**, rising to **20.4% among graduate women**, against a national unemployment rate of **3.2%** cited in the report.
- Generic degrees such as **Bachelor of Arts, Bachelor of Science and Bachelor of Commerce** have weak direct linkages with employment when not complemented by relevant skills.
- Of **4.34 crore undergraduate students**, **1.13 crore** are enrolled in Bachelor of Arts programmes; enrolment in Bachelor of Arts, Bachelor of Science and Bachelor of Commerce together exceeds **2 crore**.

2. **NEET: The Larger Human-Capital Challenge**

NEET — Not in Employment, Education or Training

- About **8.7 crore** young people fall in the NEET category.
- The issue is therefore broader than unemployment: a significant section of young people is **outside both employment and the education/training system**, resulting in under-utilisation of India's demographic potential.

3. **Why the Current Skilling System Falls Short**

The report highlights a disconnect between **education supply and labour-market demand**.

- Curricula often do not keep pace with changing industry requirements.
- Vocational and technical pathways continue to face **social preference for conventional degrees**.
- Information gaps also matter: many young people and families lack adequate awareness of appropriate **courses, training programmes and career pathways**.
- The challenge extends beyond new entrants: **formal and informal workers also require continuous upskilling and reskilling**.

4. **Skilling Has Measurable Economic Returns**

The report cites Boston Consulting Group's Higher Education Survey:

Generic undergraduate degree: ~₹22,000/month starting salary

Degree + skilling: ~₹29,000/month

→ **₹7,000 monthly difference**

→ Potentially **₹9.7 lakh additional income over 10 years**

Thus, skilling should be viewed not merely as an employment programme but as an **investment in productivity and lifetime earnings**.