



CROSS & CLIMB ROHTAK

Institute of Research Based Learning & Competition

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ARMY'S AI ROADMAP FOR OPS BY 2026-27

- The Indian Army has drawn up an ambitious roadmap to integrate Artificial Intelligence (AI), Machine Learning (ML), and Big Data Analytics into its operations by 2026–27.
- The plan aims to enhance battlefield awareness, speed up decision-making, and modernise various facets of military functioning, from combat to logistics.
- The push for rapid AI integration was accelerated by lessons from Operation Sindoor, a cross-border strike in May 2025 on terror targets in Pakistan and PoK.
- Following this, the Army has decided to fast-track AI deployment across combat and support functions.
- **Immediate Priorities: Enhanced Battlefield Awareness**
 - One of the key priorities is improving real-time battlefield awareness using AI tools that can process vast amounts of data rapidly.
 - These tools include:
 - **Text summarisers** powered by Large Language Models (LLMs)
 - **AI-driven chatbots** and **voice-to-text** systems
 - **Facial recognition** and **anomaly detection algorithms**
 - **Data fusion tools** that analyse and integrate feeds from drones, satellites, aircraft, and ground sensors for real-time insights
- **Wide-Ranging Applications of AI**
 - The roadmap outlines tactical, operational, and strategic objectives for AI use, including:
 - **Combat and surveillance:** Counter-intelligence, adversary mapping, and drone-based monitoring
 - **Decision support systems:** Operational planning, threat detection, and wargaming simulations
 - **Open-Source Intelligence (OSINT) and social media analysis:** Monitoring public sentiment and adversary movements

- **Logistics and maintenance:** AI-based supply chain optimisation, predictive maintenance, and GPS-denied navigation
- **Modernisation of Equipment and Collaboration**
 - To ensure long-term integration, AI features will be embedded in the General Staff Qualitative Requirements—technical benchmarks for all new equipment.
 - The Army also plans to retrofit AI into select legacy platforms.
 - An AI lab is being established at DGIS for model development and will coordinate efforts with the Navy and Air Force.
 - Additionally, the Army seeks increased collaboration with industry and academia to foster innovation and accelerate adoption.

Formation of AI Task Force

- An AI Task Force under the **Directorate General of Information Systems (DGIS)** is being established.
- This body, comprising representatives from other Army directorates, will oversee:
 - Technology implementation
 - Training and capacity building
 - Data sharing and system integration
 - Maintenance and support
 - Research and development
 - Integration of AI in procurement processes

INDIA'S RISING ABSTENTIONS AT THE UNITED NATIONS REFLECT STRATEGIC DIPLOMACY SHIFT

- India's voting behaviour at the United Nations has undergone a significant transformation, with the share of abstentions touching an all-time high in 2025.
- This shift marks a strategic recalibration in India's foreign policy, reflecting both the complexities of multilateral diplomacy and the country's evolving positioning as a middle power in a polarised international system.

Reasons Behind the Strategic Shift

- **A More Polarised Global Order**
 - Former Indian envoy to the UN attributes this shift to intensifying polarisation between major powers in the global system.
 - This has reduced incentives for consensus-building and increased pressure on countries to take definitive sides, something India is keen to avoid.
- **Complexity of UN Resolutions**
 - Experts note that modern resolutions often resemble “Christmas trees” with multiple, sometimes conflicting, provisions bundled together.
 - This structural complexity makes it difficult for India to fully endorse or reject a resolution, making abstention a pragmatic choice.
- **Voice of an Emerging Power**
 - Abstention is increasingly seen not as indecision but as an assertion of sovereign diplomatic judgment. It allows India to convey nuanced positions without being seen as aligning blindly with any bloc, be it the West, the China-Russia axis, or others.
 - Experts highlight that for middle powers like India, abstentions are a useful tool to navigate contentious issues while maintaining strategic flexibility.

Global Implications and Perception

- **Sign of Autonomy:** By abstaining more often, India signals its independence from binary Cold War-style alignments, reinforcing its non-aligned heritage while adapting to contemporary geopolitics.
- **Potential Friction:** However, this posture may also lead to ambiguity or disappointment among allies expecting stronger support, especially in value-laden resolutions on human rights, security, or conflict.
- **Balancing Act:** India must walk a fine line between preserving strategic autonomy and protecting its credibility as a responsible global actor.



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INDIA'S SOIL CRISIS AND THE IMPERATIVE FOR NUTRITIONAL AGRICULTURE

- **India has transformed from a food aid-dependent nation** in the 1960s to the world's largest rice exporter and the provider of the largest food distribution programme (PMGKY).
- However, this quantitative food security masks **a deeper qualitative crisis rooted in soil health**, which threatens nutritional outcomes and long-term agricultural sustainability.

India's Journey - Food Security Milestones:

- **Transformation from deficit to surplus:**
 - **1960s:** Dependent on US food aid under the PL-480 programme.
 - **2024–25:** Exported 20.2 million tonnes of rice in a 61 MT global market.
 - **PM-Garib Kalyan Yojana (PMGKY):** Provides 5 kg free rice/wheat/month to over 800 million people.
 - **Food Corporation of India (FCI) stockpile:** It holds about 57 MT of rice — the highest stock in 20 years and nearly four times the buffer norm of 13.54 million tonnes as of July 1, 2025.
- **Reduction in poverty:** The extreme poverty head count (those earning less than \$3/day at 2021 PPP) dropped from 27.1% in 2011 to just 5.3% in 2022.

Degrading Soil Health - A Silent Emergency:

- **Soil Health Card (SHC) scheme (2024 data):** Of more than 8.8 million soil samples tested, less than 5% have high or sufficient nitrogen (N), only 40% have sufficient phosphate (P), 32% have sufficient potash (K) and just 20% are sufficient in soil organic carbon (SOC).
- **SOC - A vital indicator:**
 - **SOC** is a critical parameter defining the physical, chemical, and biological properties of soil — these govern its holding capacity and nutrient use efficiency.

- As per the Indian Institute of Soil Science (IISc), SOC in the range of 0.50-0.75% is adequate.
- **Micronutrient deficiencies:**
 - Indian soils also suffer from a deficiency of sulphur, as well as micronutrients like iron, zinc and boron.
 - They contribute to stunting and long-term health issues.

Fertiliser Imbalance - A Misguided Practice:

- **State-level imbalance:**
 - **Punjab:** N overused by 61%, K deficient by 89%.
 - **Telangana:** N overused by 54%, K deficient by 82%.
 - The situation is similar in several other states. The highly imbalanced use of N, P and K and the neglect of micronutrients leads to suboptimal agricultural productivity.
- **National consequences:** The fertiliser-to-grain response ratio/ fertilizer use efficiency has declined significantly from 1:10 in the 1970s to a mere 1: 2.7 in 2015. This leads to suboptimal yield and soil fatigue.
- **Environmental hazards:**
 - **Urea inefficiency:** Only 35–40% N absorbed.
 - Rest lost as greenhouse gases (N₂O, which is 273 times more potent than CO₂) or as nitrate contamination of groundwater.
 - Urea diversion to non-agricultural or cross-border use compounds the problem.

Conclusion - Healing the Soil for a Healthy Nation:

- India's food and nutritional security now depends on **addressing the soil nutrient crisis**.
- Sustainable development demands that we **move beyond food quantity to food quality, starting with rejuvenating the soil** — the foundation of human health and national prosperity.



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INDIA CAN REFRAME THE ARTIFICIAL INTELLIGENCE DEBATE

- Less than three years ago, ChatGPT catapulted artificial intelligence (AI) out of research labs and into living rooms, classrooms, and parliaments.
- The sudden public visibility of AI created waves that leaders could not ignore and in response, global AI summits emerged rapidly, highlighting both the urgency and the uncertainty surrounding this transformative technology.
- When New Delhi hosts the AI Impact Summit in February 2026, the event can transcend symbolic diplomacy.

The Geopolitical Landscape and India's Approach to AI

- **Fractured Geopolitical Landscape**
 - The Paris AI Summit of February 2025, which aimed to unify the world on AI governance, ended in discord, marked by the United States and the United Kingdom rejecting its final text, while China embraced it.
 - These divisions risk turning what should be a cooperative effort for humanity's digital future into a fragmented contest of interests.
 - India, with its strategic position and credibility across multiple geopolitical blocs, is well placed to act as a bridge.
 - By developing inclusivity and dialogue, India can prevent AI governance from becoming a domain of competing spheres of influence, ensuring that AI benefits the global majority.
- **A Democratic Approach to AI**
 - India's Ministry of Electronics and Information Technology began preparing for the summit with a uniquely democratic approach.
 - In June 2025, it launched a nationwide consultation through the MyGov platform, inviting students, researchers, startups, and civil society groups to contribute ideas.

- The agenda emerging from this process focuses on three key goals: advancing inclusive growth, accelerating development, and protecting the planet.
- This consultative framework has provided India with a distinctive advantage, unlike past summit hosts, it is building an agenda rooted in broad-based participation and grassroots innovation.

India's Role and Identity

- India is **not aiming to build a global AI authority overnight**, nor should it.
- Instead, it **can integrate existing frameworks**, develop collaboration, and position itself as a leader in sharing AI capacity with the world's majority.
- By transforming participation into tangible progress, **India will not merely host a summit, it will redefine its identity as a proactive force on one of the most critical frontiers of the 21st century.**

Conclusion

- The AI Impact Summit of 2026 presents India with a **unique diplomatic and technological opportunity.**
- Through transparent pledges, inclusive representation, shared safety standards, balanced regulation, and resistance to fragmentation, **India can guide AI governance toward equity and sustainability.**
- In doing so, it **will not only influence the trajectory of AI but also reaffirm its role as a bridge-builder** in an increasingly divided world.

REFORM CANNOT WAIT; AVIATION SAFETY IS AT STAKE

- The Air India crash in Ahmedabad is a **stark reminder that systemic failure in aviation is not a distant threat but an immediate reality.**
- **Without a comprehensive reform** encompassing regulatory accountability, mental health support for crew, and strict adherence to safety standards, the next disaster is inevitable.

- The **judiciary, government, and airlines must work in unison to develop a genuine safety culture, one that places lives above profit margins and bureaucratic convenience.**
- **Reform cannot wait; every delay risks another tragedy.**

Systemic Failures Across Key Areas

- **Aircraft Design and Airworthiness:** The DGCA's limited technical expertise forces excessive reliance on foreign regulators, as highlighted during the 2017–18 Pratt & Whitney engine failures affecting IndiGo.
- **Maintenance Standards**
 - Aircraft Maintenance Engineers (AMEs) face **extreme workloads** without duty-time limitations.
 - **Airlines are permitted to delegate AME responsibilities to underqualified, lower-paid technicians,** prioritising cost-cutting over safety.
- **Flight Crew Fatigue**
 - Airlines **routinely breach Flight Time Duty Limitations for pilots,** with DGCA exemptions allowing fatigued crews to operate.
 - The **unique NOC requirement for pilots restricts their career mobility,** increasing psychological stress and regulatory coercion.
- **Cabin Crew Neglect:** The reduction of cabin crew roles to hospitality functions ignores their vital role in passenger safety.
- **Air Traffic Management:** The AAI grapples with a severe shortage of Air Traffic Controller Officers (ATCOs), a crisis worsened by the non-implementation of licensing provisions and duty-time limitations recommended after past crashes.
- **Suppression of Whistle-Blowers:** Retaliation against safety whistle-blowers fosters a culture of silence, allowing violations to persist unchecked.

CHIKUNGUNYA



- It is a **mosquito-borne viral disease** caused by the **Chikungunya Virus (CHIKV)**.
- It causes **fever and severe joint pain**.

- The word comes from the African Makonde language and means "bent over in pain."
- It was **first described** during an outbreak in **southern Tanzania in 1952** and has now been reported in **more than 110 countries in Asia, Africa, the Americas, and Europe**.

Transmission:

- It is transmitted to humans by the **bites of infected female mosquitoes**, most commonly **Aedes aegypti** and **Aedes albopictus** mosquitoes.
- These **two species can also transmit** other viruses, including **dengue and Zika** viruses.
- An infected person cannot spread the infection directly to other persons (i.e., it is **not a contagious disease**).

Symptoms:

- The symptoms of chikungunya are **similar to those of dengue and Zika**, making chikungunya **easy to misdiagnose**.
- The **most common symptom** is an abrupt onset of **fever, often accompanied by joint pain**. Other symptoms include muscle pain, headache, nausea and fatigue.
- **Severe joint pain usually lasts a few days but can persist for months or even years**.
- **Serious complications are uncommon**, but atypical severe cases can cause **long-term symptoms and even death, especially in older people and in children under one year old**.
- **Treatment:**
 - There is **no vaccine or antiviral drug treatment** for chikungunya.
 - **Treatment is focused on relieving the symptoms**.