From Surveillance to Strike: India's Opportunity in the Global Attack Drone Market

The characteristic of modern warfare has fundamentally shifted from mass manpower to autonomous, unmanned systems. From the plains of Ukraine to the Middle East and now unmistakably on the Indian subcontinent, drones have emerged as the defining weapon systems of the 21st century. India, with a 3,488 km land border with China, a 3,323 km border with Pakistan, a 7,516 km coastline, and active insurgencies in the northeast, faces the most complex drone threat environment of any major economy in the world.

Operation Sindoor in May 2025 was the inflection point for the sector; for the first time in the history of the India-Pakistan conflict, unmanned aerial systems were not supporting assets but the main instrument for engagement. Pakistan deployed an estimated 600+ drones against Indian military and civilian targets in a single night[1], and India responded with targeted Harop and Sky Striker loitering munitions to neutralize Pakistani air defense assets with precision[1]. However, the operation also exposed critical gaps: near-total dependence on Chinese components, the absence of an indigenous drone platform, and a manufacturing ecosystem that assembles drones but does not yet build them from the ground up. Closing these gaps is of paramount importance to the country, and a multi-billion-dollar procurement cycle has been set in motion to do so.

Structural and policy tailwinds for a generational investment opportunity in India's attack drone sector are now in place. The Government's Aatmanirbhar Bharat Initiative,the 2021 import ban on fully built foreign drones[2], the ₹120 crore PLI scheme, and the DAC's August 2025 approval of 87 indigenous MALE drones (₹20,000 crore) signal a structural shift in procurement philosophy.

Underpinning this policy shift lies an uncomfortable arithmetic:

Defender
Interceptors and Surface to Air Missiles

- Short Range: ~₹2 crore per missile
- Medium Range: ~₹35 - 43 crore per missile

VS

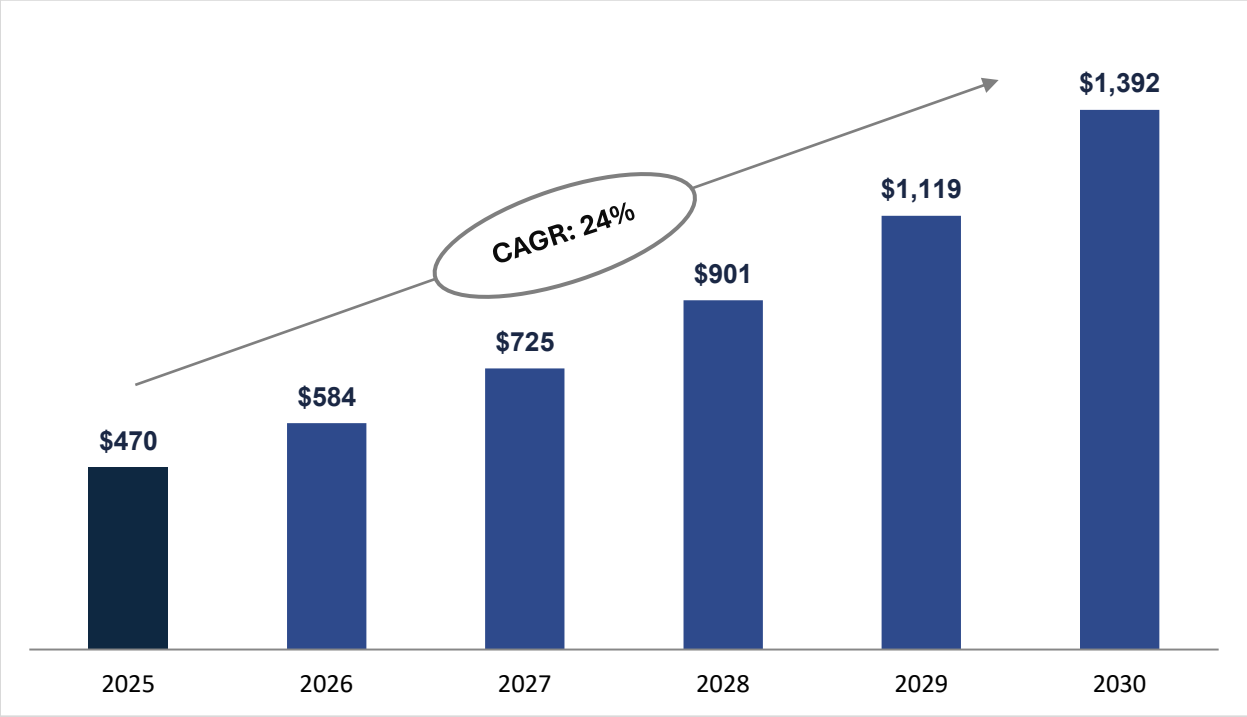
Attacker
Loitering Munitions

~₹5 Lakh per drone
which are fielded in volume and are attriable

[1] "Operation Sindoor: Over 600 Pakistan Drones killed by Army air defence units" , Times of India , https://timesofindia.indiatimes.com/india/operation-sindoor-over-600-pakistan-drones-killed-by-army-air-defence-units/articleshow/121221694.cms

[2] Government of Civil Aviation Circular dated February 9th 2022

Drones have inverted the cost economics of aerial warfare, and at the volume India's threat environment demands, the Army alone envisions 8,000–10,000 UAVs per corps[3]; only a scaled indigenous manufacturing base makes strategic and fiscal sense. For investment, the combination of government-mandated demand, a nascent but accelerating domestic ecosystem, and a cost structure that makes volume procurement inevitable, creates an entry point that is both strategically de-risked and commercially compelling.



India Drone Market Size ($ Mn)

India's drone market is thus projected to grow at a CAGR of 24.4%, making it a $1.39 B market by 2030[4], a trajectory that makes it one of the most compelling investment opportunities in India. This report examines four dimensions of this opportunity. First, a primer of India's attack drone landscape: the different types of drones in play, where India sources them, and the domestic players building self-sufficiency. Second, an in-depth assessment of the structural impediments: a supply chain that remains dangerously dependent on Chinese components, a certification infrastructure that adds years to deployment timelines. Finally, specific investment opportunities

[3] " How India Plans to Rule the Skies with 1,00,000 Drones", InsideFPV , https://insidefpv.com/blogs/blogs/inside-india-drone-revolution-army-100k-uav

[4] "India Drone (Civil and Commercial, Defense and Government) Market Forecast to 2030", Yahoo Finance, https://finance.yahoo.com/news/india-drone-civil-commercial-defense-081900641.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAHvx--cZVD--jP4anp4Z3n0zdmMMKoIxKILoU2QfwRGglSN05URSyCoIXRouKuSWG3cmMUI7A3R8yTYn_H4Ox0R8AGtk9eggYlcODozLWcTjhVgQCvgiBsoDOAwKEctMfaM3NA88LKiMf8wx-VMntouHElSd6VdugaoG9Fyfsm1g

emerge from these gaps across platform manufacturers, subsystem suppliers, and enabling technology providers.

The Attack Drone Landscape of India

The picture above maps India's current and planned drone arsenal across the altitude, payload and endurance system.

While altitude broadly defines a drone's strategic role, the investment case for each category is determined by a more granular set of parameters: unit cost, the need for it and the use cases currently in play. The table below maps the use cases for these drones while each section of the drone talks about the other parameters to consider for an investment.

Drone Category	Defence Use Cases	Civilian / Non-Defence Use Cases
MALE UAV **(Medium Altitude Long Endurance)**	• 24–40 hr border surveillance without pilot fatigue • Precision strike: Hellfire ATGMs, laser-guided bombs • SIGINT and electronic warfare missions • Anti-submarine warfare • Real-time ISR feed to ground commanders • Counter-insurgency persistent overwatch	• Disaster response mapping (floods, earthquakes, wildfires) • Pipeline and power grid infrastructure inspection • Maritime domain awareness for fisheries enforcement • Environmental monitoring: forest cover, illegal mining • Agricultural survey at scale (large farms, plantations)
Tactical ISR	• Squad reconnaissance before troop movement • Artillery fire correction (real-time spotter) • Convoy route clearance and IED detection • Border fence and forward post surveillance • Urban warfare building and rooftop clearing ISR	• Search and rescue in mountains, forests, disaster zones • Police surveillance for crowd management and crime • Forest fire early detection and spread mapping • Coastal and river erosion monitoring • Infrastructure inspection: bridges, dams, transmission lines
Loitering Munitions	• Suppression / destruction of enemy air defense radars • Anti-armor at standoff range • Attrition warfare: saturate defenses with volume • Pre-strike pathfinding for manned aircraft • Infrastructure interdiction (command posts, logistics hubs)	• Limited direct civilian application (purpose-built weapons)
FPV / Nano Drones	• Precision strike / loitering attack • ISR at the squad/platoon level: Nano drones give individual soldiers and small units real-time reconnaissance • Counter-infantry and anti-personnel operations: FPVs are used to flush out troops from trenches, bunkers, and tree lines where artillery is ineffective. • Swarm and saturation attacks • Special operations and infiltration: Nano drones support clandestine missions	• Aerial photography and videography • Indoor inspection of confined spaces (pipelines, tunnels, mines) • Search and rescue in collapsed structures • Agriculture: precise pesticide delivery, micro-pollination • Real estate and event coverage

Naval / Maritime Drones	• Anti-ship strike • Anti-submarine warfare: sonobuoy deployment, acoustic tracking • Mine laying and mine countermeasure operations • Port and harbor protection from enemy USV swarms • Underwater ISR • • Communications relay for submarine task forces	• Offshore oil and gas platform inspection and monitoring • Deep-sea scientific research and oceanographic surveys • Port security and harbor patrol • Fisheries enforcement and illegal fishing detection in EEZ • Hydrographic survey for coastal infrastructure and shipping lanes • • Environmental monitoring: coral reefs, seabed mapping, pollution tracking

We now move into a more detailed breakdown of each sub-category of attack drones.

1.Medium Altitude Long Endurance (MALE) UAVs

Since the advent of this century, MALE UAVs have been the backbone for the Intelligence, Surveillance, and Reconnaissance (ISR) for the military globally. The United States of America and Israel have been the leading countries in these drones with their flagship drones MQ-9B and Heron respectively being the most exported drones in the world. India currently operates Israeli Heron I and Searcher MK II MALE drones across every major operational area from the Line of Actual Control to the Andaman Sea. While the Indian Navy leases two MQ-9Bs from General Atomics.

India has been working towards an indigenous MALE drone for over 15 years, but high complexity in engineering and design has slowed progress. DRDO has nonetheless made significant progress in Rustom-II, which would be used for ISR.

Given below is the global landscape of MALE drones:

Platform	Country	Ceiling (Feet)	Endurance (Hours)	Payload (Kilograms)	Speed (Km/h)	Approx. Cost	Countries Exported To
MQ-9B	USA	50,000	40+	1,746	482	$30–110M	UAE , EU , UK , Japan , Taiwan
TB2	Turkey	27,000	27	150	222	$5M	Ukraine , Africa , Pakistan

Akinci	Turkey	40,000	24+	1,500	360	$25–30M	Ukraine, Africa , Pakistan
Wing Loong II	China	29,500	32	480	370	$2M	UAE, Saudi Arabia, Pakistan, Egypt
Heron TP	Israel	45,000	36	1,000	296	$10M+	India, Canada, Australia
Orion	Russia	24,000	24	200	200		Only for domestic use.

The global MALE drone landscape above illustrates a market dominated by a handful of countries and companies. As India accelerates its push toward defense indigenization under the Aatmanirbhar Bharat framework, the MALE segment has become a focal point for defense. Given below is the current procurement cycles announced and MALE UAVs being developed by DRDO AND Bharat Electronics.

87 MALE Drone Tender: The DAC approved the acquisition of 87 MALE drones on August 12, 2025, under the IDDM category[5]. The deadline for the submission of bids for the same is June of this year, this has been pushed because of the recent West Asia conflicts. The deal mandates at least 60% indigenous content, ensuring local production of critical components such as aerostructures, engines, electro-optical payloads, and SATCOM systems. The contract will be split between two Indian manufacturers: the lowest bidder receiving 64% (approximately 56 drones) and the second-lowest 36% (31 drones), establishing dual production lines to support scalability and export potential.

The likely bidding consortia, based on currently announced partnerships:

- L&T + General Atomics (announced October 2025): Under the agreement, L&T will act as the prime bidder while GA-ASI will serve as the technology partner; the drones will be fully manufactured in India incorporating technology transfers and indigenous content,

[5] " India to Issue 30,000 Crore Tender for 87 Male Drones" , AngelOne , https://www.angelone.in/news/market-updates/india-to-issue-30-000-crore-tender-for-87-male-drones-report

- Adani Defence & Aerospace (relationship with Elbit/IAI has previously supplied Hermes 900)
- HAL (possibly with an Israeli partner)

The 31 MQ-9B Acquisition[6]: India signed a defence deal worth USD 3.5 billion with the US to acquire 31 MQ-9B Predator armed drones for its armed forces. General Atomics, the manufacturer of the drones, will set up a maintenance, repair and overhaul (MRO) facility in India. The breakdown of the 31 drones would be fifteen drones with Indian Navy and the remaining sixteen split equally with Indian Army and Indian Air Force

Indigenous MALE UAVs: DRDO in collaboration with Hindustan Aeronautics Limited (HAL) has developed Archer-NG which is a Medium-Altitude Long-Endurance UAV with payload capability of 300 kg and maximum altitude of 30,000 ft, it had its first successful flight in October 2025. Like Archer-NG, DRDO has developed TAPAS-BH and Ghatak UCAV, though both of which have still not been deployed in active surveillance or tactical operations.

2.Loitering Munitions

These types of drones have undergone the most dramatic doctrinal validation of any weapon system in recent military history. From the 1990s, when Israel first introduced Harop to the world, to the large-scale battlefield use of Iranian designed Shahed-136 one way attack drones (most prominently used by Russia and by Iranian-aligned actors across the Middle East), which demonstrated the destructive reach of cheap loitering munitions at scale.

Given below is a snapshot of the various loitering munitions available worldwide:

Platform	Country	Loiter Time	Range	Warhead	Guidance
IAI Harop	Israel	6 hrs	1,000+ km	23 kg	EO + Anti-radiation seeker
IAI Harpy	Israel	Loiter until target	500 km	16 kg	Autonomous anti-radiation
Elbit SkyStriker	Israel	2 hrs	100 km	10 kg	EO/IR

[6] "MQ-9B Deal: A Capacity Upgrade for India-US Relations, ORF America, https://orfamerica.org/newresearch/india-usa-drone-deal

AeroVironment Switchblade 300	USA	15 min	10 km	~0.5 kg	EO/IR + GPS
AeroVironment Switchblade 600	USA	40+ min	90 km	Javelin-class	EO/IR + GPS
LUCAS	USA	N/A (one-way attack)	1,000+ km	~30 kg	GPS/INS + terrain-following
Shahed-136 / Geran-2	Iran / Russia)	N/A (one-way attack)	2,500 km	30–90 kg	GPS/INS
ZALA Lancet-3	Russia	40–60 min	70 km	~3 kg	EO/IR electro-optical
CH-901 (China)	China	120 min	60 km	10 kg	EO/IR + laser
Burraq / Shahpar	Pakistan	N/A (strike UAV)	100–300 km	~24 kg	GPS/INS + EO

While India has various loitering munitions companies, Nagastra-1 and Sureshastra MK1 are the leaders in this space. Given below is a brief description of both:

- **Nagastra-1**: is an Indigenous man-portable via two backpacks, features pneumatic launch, 60 minutes of endurance, a 15–40 km range, and a 1–1.5 kg precision warhead, with electric propulsion ensuring a low acoustic signature, man-in-the-loop control, mid-flight abort capability, and parachute recovery. Manufactured with over 75% indigenous components by Solar Industries in collaboration with Z-Motion autonomous systems.
- **Sureshastra Mk1**:is jet-powered rather than electrically propelled, giving it higher speed and range than the Nagastra family, and making it India's first contracted jet-propelled indigenous loitering munition. It targets the gap between the slow electric Nagastra and the imported Harop.

During Operation Sindoor, India deployed various imported loitering munitions, including the Harop, Warmate, and SkyStriker. Although these drones performed their intended tasks, the logistics surrounding their use raised concerns; specifically, the Indian Air Force nearly

exhausted its stockpile of Harop drones[7]. Given that a military can deplete a $100 million import order in just 72 hours, India recognized it cannot afford to remain dependent on imports. Consequently, India has initiated an aggressive cycle of procuring indigenous loitering munitions. Below is a snapshot of that procurement activity:

- Army ₹2,000 Crore Fast-Track Tender [8]: This is the largest indigenous loitering munition tender in India's history. The Indian Army's ₹2,000 crore fast-track tender targets deep precision strikes amid heavy jamming. The initial contract covers approximately 850 units along with dedicated launchers and support systems, to be split between two leading domestic vendors to promote competition and accelerate production, with ambitions to induct tens of thousands of such systems in the coming years.
- IAF Indigenous SEAD Loitering Munition Tender[9]: Following the decisive use of Harop during Operation Sindoor, the IAF is actively pursuing development of indigenous loitering munitions specifically engineered to dismantle hostile air defence networks.
- DRDO SLMUAV: India's most technically ambitious loitering programme. DRDO's Swarm Loitering Munition UAV completed flight trials in March 2025, demonstrating coordinated swarm missions, lethal sacrificial roles, and in-flight retargeting capabilities that no other indigenous platform has demonstrated. Induction tender is expected post-user trials completion, likely 2026–27.

3.FPV/Swarm Drones

This type of drone gained widespread recognition after Ukraine successfully utilized it with remarkable effectiveness. A $400 quadcopter carrying a grenade has emerged as the primary weapon responsible for an estimated 60-70% of Russian equipment losses[10]. FPV/Swarm Drones uniquely occupy a place in the drone arsenal: they are the most democratized military drone category and the one that enables asymmetric advantages to be built quickly.

Given India's two-front adversarial environments, addressing this issue is a pressing necessity. During Operation Sindoor 2025, Pakistan deployed over 600 drones derived from Turkish and Chinese technology against Indian territory. Although none successfully penetrated India’s air defense grid, the encounter highlighted a crucial reality: the next conflict will likely involve tens

[7] Operation Sindoor: Military Performance and Effectiveness, ORF
[8] “Centre gives nod for defence procurement worth 2000 Crores” , The Hindu , https://www.thehindu.com/news/national/defence-ministry-clears-2000-crore-contracts-under-emergency-procurement-for-counter-terror-operations/article69730920.ece
[9] Indian Air Force Circular dated 24th October 2025
[10] “How Ukraine’s Drone Arsenal Shocked Russia and Changed Modern Warfare” , Bloomberg, https://www.bloomberg.com/features/2025-ukraine-drones-explainer/

of thousands of drones, and the side with a more robust industrial pipeline will possess a significant advantage.

Hence a lot of FPV drones are not manufactured by traditional defense primes but emerge from decentralized civilian-military ecosystems.

Given below is breakdown of the global landscape of the various FPV/Swarm Drones in the market by their categories:

- **Combat-Proven FPV & Tactical Swarm**: Combat-validated platforms from active theatres dominate this segment. Ukraine fields the Shrike FPV ecosystem (FPV kamikaze with AI vision). Russia deploys the Lancet and Geran-2 / Shahed-136 as loitering-munition FPVs. China combines DJI (military-use) with CASC swarms for AI-driven FPV operations and operates the Jiutian mothership as a swarm carrier UAS.
- **Advanced Autonomous Swarm Drones**: This tier covers attritable, AI-enabled and multi-domain coordinated swarms. The USA leads via the Replicator Initiative with Anduril, AeroVironment, Kratos and Shield AI building attritable autonomous swarms. Israel offers swarm-capable loitering munitions through IAI (Harop, Harpy) and Elbit (SkyStriker). Turkey runs STM's Kargu-2 (autonomous loitering swarms up to 20 units) alongside Baykar's Bayraktar TB2. Germany contributes Helsing's HX-2 AI kamikaze with edge AI, while Sweden provides Saab's multi-domain swarm C2 and AI coordination software.
- **Emerging / Regional Swarm Drones**: Regional players focus on mass and asymmetric effects. Iran mass-produces the Shahed-136 and Shahed-238 delta-wing kamikaze drones for saturation attacks. Taiwan's NCSIST swarm programme targets asymmetric defense, and NATO's Project Steadfast develops multi-domain swarm AI teaming.

As seen above, every major military power and organization is actively building its own FPV and swarm drones' arsenal. India does not want to be behind in this curve and has thus been the most active in these types of drones with the most amount of procurement and tender notices coming out from defense. Given below are some of the notable ones:

- FPV Swarm Drone Tender, 720 Units (September 2025): A total of 32 companies participated in the tender for 720 FPV drones, while another 14 companies submitted offers for 120 loitering munitions every single bidder was rejected on technical grounds, including major names such as Adani, Garuda Aerospace, Bharat Forge, DEPL, MIPL, and VTOL Aviation India.
- FPV Swarm Drone Set of 4 : Pathankot, Punjab (June 2025): The Indian Army published a tender for FPV Swarm Drone (Set of 4) in June 2025, published from

Pathankot, Punjab a forward location directly relevant to the Pakistan border operational theatre.

- Ashney Drone Platoons ,380 Infantry Battalions: Every infantry battalion has been equipped with an Ashney (Fire) Drone Platoon each unit operating four surveillance drones and six armed drones including kamikaze and precision strike UAVs.

4.Naval Drones

The effective deployment of sea drones by Ukraine against Russia's Black Sea Fleet has highlighted the importance and effectiveness of a comprehensive maritime drone program for various countries. This is particularly significant for India, which boasts a 7,516 km coastline, an exclusive economic zone that spans over 2.3 million square kilometers, and a strategic position at the crossroads of the most contested sea lanes in the Indo-Pacific.

Given below is a detailed breakdown of the global landscape of maritime drones both on the surface and underwater:

The maritime drones can be categorized into three distinct categories: Unmanned Surface Vessels (USVs), Autonomous Underwater Vehicles (AUVs/UUVs) and Maritime ISR UAVs. We at Argan believe that the most technologically significant domain would be underwater.

- **Unmanned Surface Vessels (USVs):** On the surface, China is clearly going for scale, the JARI-USV-A trimaran and the L30 swarm point to a doctrine built around numbers rather than single exquisite platforms. The US is taking the opposite tack with the LUSV and Sea Hunter, which are larger, longer-endurance vessels meant to operate alongside the fleet. Israel has stayed close to its coastal-defense DNA with the Seagull and Katana, both already combat-tested.
- **Autonomous Underwater Vehicles (AUVs / XLUUVs):** Underwater is where things get genuinely competitive. The US is furthest along, Boeing's Orca XLUUV has a prototype delivered with five more in production, and the REMUS / Lionfish SUUV line is already rolling off the floor. China is pushing hard from two directions: an unnamed XXLUUV is being tested in the South China Sea, and the Haiyan and Qianlong III are already operational in the Indian Ocean Region, which has obvious implications for India.
- **Maritime ISR UAVs:** Maritime ISR is essentially a two-horse race today. General Atomics' MQ-9B Sea Guardian is the gold standard the US and its partners are buying, and on the other side, CASC and AVIC have been quietly maritime-ising the TB-001 and Wing Loong families to give China a comparable persistent-surveillance footprint.

Compared to other categories, this category has seen the least development in India**.** The foundational architecture for a fleet of maritime drones is dispersed across multiple platforms

and by DRDO and the Indian Navy. The following are some of the developments and tenders announced in the same:

- **Extra-Large Unmanned Underwater Vehicles (XLUUVs)**: The Ministry of Defense approved the Indian Navy's plan for constructing 12 XLUUVs at an estimated cost of ₹2,500 crore[11] , with the platform designed for strike capability against enemy submarines and surface ships, mine countermeasure (MCM), mine-laying, and surveillance missions.
- **High Endurance Autonomous Underwater Vehicles:** DRDO's NSTL laboratory has been developing the HEAUV as the backbone of India's surface underwater ISR capability. The HEAUV is approximately 10 metres long with a diameter of 1 metre, capable of diving to 300 metres, and designed for a 15-day endurance at 3 knots with a maximum speed of 8 knots.
- **Submarine-Launched ULUAVs and Drone Swarms:** DRDO is developing Unmanned Launchable Underwater Aerial Vehicles (ULUAVs) that can be launched from the torpedo tubes of conventional submarines, representing a hybrid capability designed to operate underwater and then transition into the aerial domain upon surfacing
- **Counter-Drone Systems for Warships:** The Indian Navy has issued an RFI for Counter Drone Systems (Soft Kill) for installation on naval warships and establishments ashore[12], requiring systems with 360° radar coverage, capable of detecting and tracking mini/micro drones at 5 km or more, with directional jamming of drone communication frequencies.

Having looked at the various attack drones in the arsenal, we now move to the most critical bottleneck: the supply chain vulnerabilities that have hindered India's path toward indigenous manufacturing.

Supply Chain Vulnerabilities & Component Dependencies

While the above sections underline the imperative need for more drones in India, every credible analysis converges on the same undeniable reality: India assembles attack drones; it does not yet manufacture them. The nation currently imports an estimated 45% - 60% of critical components by value, with this dependency concentrated precisely in the high-end subsystems that define a drone's lethality and resilience.

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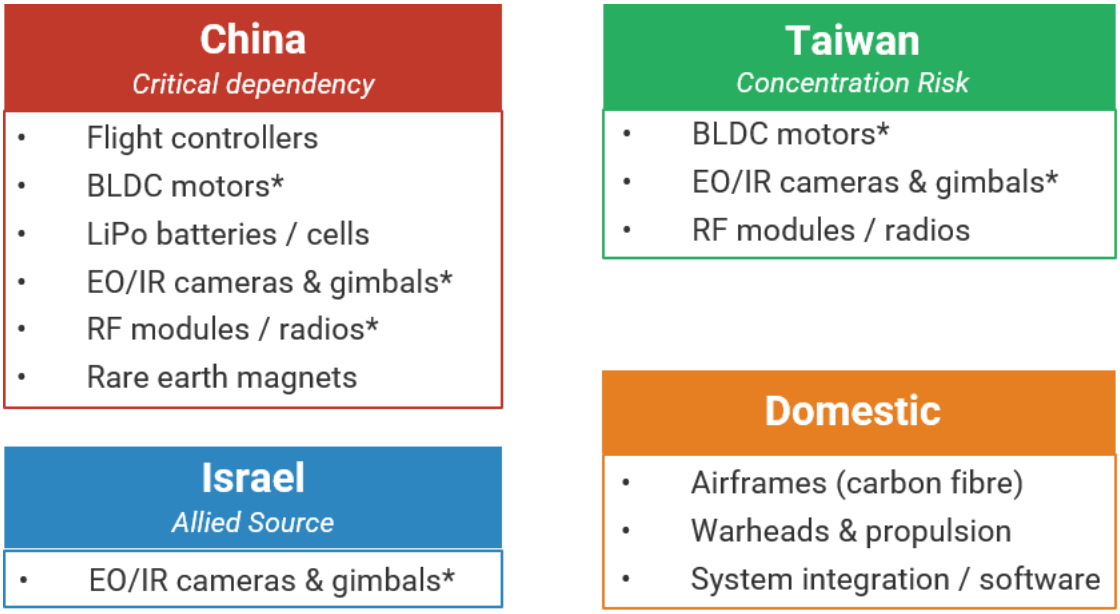
[11] " Defence Ministry clears Navy's 2500 Crore plan for unmanned vessels with capabilities to attack submarines", Economic Times , https://economictimes.indiatimes.com/news/defence/defence-ministry-clears-navys-rs-2500-crore-plan-for-unmanned-vessels-with-capabilities-to-attack-submarines/articleshow/113266858.cms?from=mdr

[12] Indian Navy Official Procurement Letter dated August 2023

Given below are the various components and their dependency mapped to the country we import from:



*indicates components sourced from multiple geographies

As seen above the dependency is overwhelmingly on China. This is both a strategic vulnerability and an industrial constraint. The September 2025 Indian Army tender for 720 FPV drones and 120 loitering munitions, in which 100% of bidders were disqualified at technical evaluation[13], captured the gap between what the armed forces require and what the domestic industry can deliver under the current norms.

We now examine why this heavy reliance on foreign components persists in the sector, alongside the secondary structural challenges that have further compounded the situation:

China: Despite escalating geopolitical tensions and regulatory restrictions, China remains deeply embedded in the Indian drone ecosystem due to structural policy gaps and active market manipulation. A government disclosure in Parliament in April 2025 put roughly 39% of the flight controllers used in India's smaller drones as Chinese-sourced[14]. This is possible because the laws in India cover finished drones, not their components. Compounding this, China understands exactly where it sits in the demand stack and has built an export-control architecture explicitly designed to constrain foreign UAV and defense supply chains, driving costs higher for drone makers.

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[13] "Indian Army scraps entire FPV drone tender", Defence Blog , https://defence-blog.com/indian-army-scraps-entire-fpv-drone-tender/

[14]Government of India Ministry of Civil Aviation Lok Sabha, Unstarred Question No.:5448 , PLI Scheme for Drone Manufacturing

Precision Manufacturing: The sophisticated engineering required to manufacture attack drones specifically cannot be built out in a single year. Chinese and Korean manufacturers have spent over 10 years perfecting these processes, and India does not yet hold that institutional knowledge because the demand simply did not exist before 2021. The same advantage shows up in intellectual property and design, the best flight controllers come from players like DJI and Pixhawk, who have spent years refining their trade. Indian startups can license those designs or reverse-engineer them, but catching up on performance, reliability, and cost simultaneously is difficult when established players bring far larger R&D budgets and global scale advantages.

Lack of Size to justify the investment: Let us take an example of setting up a dedicated flight controller manufacturing line. Commissioning one would run you up a few million dollars, and while that looks attractive against the projected drone market size in India, the underlying volume does not support it. India procures only around 8,381 drones in 2025, rising to roughly 16,756 by 2030[15], single-digit thousands of units a year, even before accounting for the share of controllers still imported finished. In contrast, global component giants leverage highly automated lines to produce millions of units per year, amortizing their initial costs to mere pennies. At Indian volumes the global model of drone manufacturing simply does not work we cannot justify a dedicated production line when capacity would sit idle over the majority of the time.

The Industrial Gravity of Supply Chain Ecosystems: Beyond individual component costs, modern electronics manufacturing relies on the physical density of localized supplier networks: a phenomenon known as industrial gravity. A flight controller or navigation suite cannot be built in isolation; its production demands a seamless, high-velocity web of certified PCB fabricators, microprocessor distributors, precision sensor manufacturers, and specialized testing facilities. In established hubs like Shenzhen or Taiwan, this entire ecosystem operates within a frictionless small radius. This physical proximity allows developers to prototype, source, iterate, and troubleshoot complex subsystem designs in days rather than months. Lacking this spatial concentration, Indian manufacturers must coordinate across fragmented, international supply chains, encountering transaction costs, shipping delays, and quality assurance bottlenecks at every single node of the production cycle.

Banking & Forex Procurement Friction: Administrative and foreign exchange bottlenecks severely stall procurement, turning component imports into multi-week compliance hurdles. This systemic lag acts as an agility tax, leaving Indian developers structurally slower and less cost-competitive than global peers operating in integrated financial ecosystems.

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[15] India Drone (UAV) Market Size , Share and Trends 2030 , MarketsandMarkets, https://www.marketsandmarkets.com/Market-Reports/india-drone-market-136782206.html

Spatial Fragmentation and MSME Infrastructure Gaps: The supporting industrial base is thin and dispersed: component vendors are scattered across Bengaluru, Hyderabad, Pune, Chennai, NCR, Dehradun and Coimbatore, with land allocation often far from talent hubs and PCB-fabrication capacity. The policy response has also underperformed: roughly 18% of the ₹120 crore PLI scheme remained unutilized as of April 2025[16], despite the evident demand[17].

Lack of Regulatory Support: India's domestic drone ecosystem is severely constrained by a regulatory framework that fails to support hardware-level validation while threatening compliance overreach. Under the Drone Rules 2021[18], certification is restricted to complete drone platforms, leaving domestic component manufacturers without a pathway to qualify individual subsystems and forcing OEMs to default to pre-certified imports. This systemic gap is compounded by the draft Civil Drone (Promotion and Regulation) Bill 2025[19], which risks pulling combat-specific subsystems under cost-prohibitive commercial certification regimes, further undermining domestic unit economics.

Having examined the various drones in the arsenal of India and the supply chain challenges hindering indigenous production, we now turn to Argan's thesis. This section outlines the subsectors within the drone industry that hold significant investment potential, along with the key reasons.

The Argan Thesis: Where Capital Meets Conviction in India's Drone Sector

Market Sizing

The addressable market is best understood as the intersection of two distinct pools rather than a single nested hierarchy. The first is the Indian defense deep tech market [20]; the second one being the broader Indian drone market[21]. Military and defense drones [22]are the overlap of these two pools, and attack drones the focus of this report being the high intent core of that overlap.

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[16] "China's dominance overshadows India's drone ambitions despite breakthroughs" , National Herald , https://www.nationalheraldindia.com/national/chinas-dominance-casts-shadow-over-indias-drone-ambitions-despite-battlefield-breakthroughs

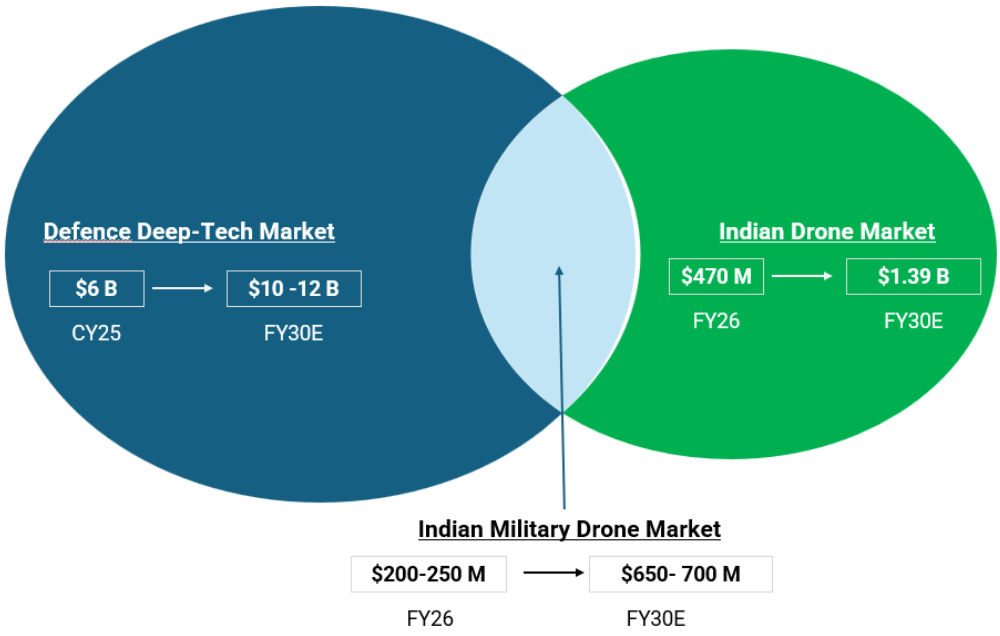
[18] Drone Bill 2021 , Official Press Release

[19] Government of India , Ministry of Civil Aviation Official Circular dated 16th September 2025

[20] NASSCOM DeepTech Report, 2025

[21] "Indian Drone (UAV) Market Report 2025-2030" , MarketsandMarkets, https://www.marketsandmarkets.com/Market-Reports/india-drone-market-136782206.html

[22] MoD DAC Filings



Why the Supply Chain Constraints Don't Invalidate the Thesis

The preceding section laid out the structural depth of India's component dependency: the 45-60% import share, the role of China in majority of the sub-components and a regulatory framework that certifies finished platforms and not sub-systems. These hinderances have led to a standard pushback in the industry: "until these are fixed, Indian OEMs are glorified assembly lines", while this is correct on the facts but inverts the implication. **The pain is precisely what creates the policy moat.** Every barred Chinese component is a forced demand event, the recently announced rare earth magnet scheme exists because of the dependency, not despite it. Without the import problem, there would have been no policy umbrellas like PLI, Drone Shakti Mission.

Moving on, the technical problems mentioned in the above section do require intensive capital and a 5–7-year commitment but they are solvable. Raphe mPhibr is the proof point: Zero Chinese components, in-house flight controllers, batteries and a level of profitability that is rare for an Indian defense-tech ecosystem at this stage. What separates these companies from the broader ecosystem is not the technical know-how but a willingness to be patient and deploy capital in supply chain depth rather than OEM revenue with imported components. The Indian drone companies that have made this commitment have been the natural beneficiaries of the policy umbrella.

Finally, the China risk is asymmetric and underpriced. China's October 2025 extraterritorial controls, covering any product anywhere with ≥0.1% Chinese rare earth content [23]— were suspended under the Xi-Trump truce until November 2026, but the reactivation risk remains structurally unresolved. If/when these controls resume, Indian indigenous OEMs become among the few NDAA-compliant suppliers globally, opening export markets in the US, EU, and West Asia today dominated by Israeli, Turkish, and Ukrainian players. BSS Materiel's NDAA-compliant FPVs and DroneYards' EW-resistant systems are early signals of this export pivot. The supply chain strain that today reads as the sector's largest vulnerability is, on closer inspection, the precondition for its largest opportunity — both domestically through policy capture and globally through decoupling.

Investment Themes for India's Attack Drone Decade

Based on our mapping of the supply chain stack, policy, and procurement cycles for attack drones, we at Argan believe the following six themes are critical areas for investment. Our framework for examining this sector focuses on categories where demand is contractually visible, capital deployment windows are open, and the competitive landscape is not so mature as to preclude venture- and growth-stage entry. The themes **we have mentioned require patient capital, as some of the themes to be played would require five to seven years.**

Theme-1: Critical Subsystems and Component Sovereignty

We believe this is the steepest moat in the entire sector. With the majority of flight controllers, EO/IR payloads currently imported, a single qualified domestic supplier in any of these categories becomes a near monopoly for three to five years under the July 2025 no-Chinese components mandate.

Subsystem revenue is structurally captive across multiple OEM customers, helping it capture volume and margin that individual OEMs cannot capture. Additionally, subsystems scale internationally more easily than complete drones. Unlike complete platforms, which require export-control clearance and end-user verification at every sale, qualified subsystems can be exported without ITAR friction. This export flexibility alone justifies higher entry valuations than those supported by domestic TAM alone.

We acknowledge that the capital expenditure (capex) intensity in this business is significant, as highlighted by current volume challenges in India, which do not justify heavy investment. To address this, we are focusing on companies pursuing a strategy that targets both defense and commercial drones to better amortize the capex base.

[23] " China expands rare earths restrictions, targets defense and chips users" , Reuters, https://www.reuters.com/world/china/china-tightens-rare-earth-export-controls-2025-10-09/

Some of the sub-segments that we are actively looking at:

- Flight controllers & autopilots
- BLDC motors & propulsion
- EO/IR payloads & sensors
- Precision tooling & magnetic steel processing

Theme-2: Full-Stack Indigenous Attack Drone OEMs

This theme represents the most visible aspect of India's drone investment story, with investors keen to invest in companies within this space. While there are many companies operating here, at Argan we apply the below screening criteria along with the expertise of our CXO council—who have been involved in procurement cycles from both sides to support companies that are genuinely manufacturing indigenous attack drones and possess a competitive advantage to scale rapidly.

Argan's Screening Criteria:

- ≥75% indigenous content with credible audit trail (not self-claim)
- EW resilience designed into the platform: jamming, GPS denial, and spoofing tolerance
- NDAA-compliant, or with a clear path to compliance (preserves export optionality)
- Existing government contracts or Emergency Procurement Route deliveries
- Vertical depth into at least one critical subsystem

Theme-3: AI, Autonomy & Swarm Software

With any other sector, we believe AI will play an integral role in warfare going forward. We believe the following three applications appear decisive:

Swarm coordination: AI enables dozens or hundreds of low-cost drones to operate as a single distributed weapon, autonomously dividing reconnaissance and strike roles, re-routing around losses, and saturating air defenses through volume.

Autonomous strike: where computer vision and onboard target recognition allow drones to identify, classify, and engage targets without operator input in GPS-denied or EW-contested environments

Counter-drone AI: where machine learning models trained on radar, RF, and acoustic signatures detect, classify, and prioritize incoming drone threats in real time at a scale no human operator can match.

The use of AI transforms cost economics in favor of the attacker for the first two, and in favor of the defender for the third, making it the single highest-leverage layer in the entire drone ecosystem.

Israel is the operational proof point. The IDF's deployment of AI-assisted targeting systems in Palestine and Lebanon pairing computer vision drones with autonomous strike loops has compressed the kill chain from hours to minutes and has produced strike volumes that no

equivalent manned air operation could sustain. The April 2026 Army Technology Roadmap's [24]emphasis even further the need for such technology in India making this an AI use case that may not exist in this form again.

Theme-4: Loitering Munitions and Tactical Warheads

Loitering munitions sit on the most visible procurement pipeline as seen in the above sections of any drone category in India today. No other drone sub-category in India offers this combination of confirmed orders, oligopolistic supplier consolidation, listed-equity access, and export-ready cost competitiveness. For an investment thesis built on demand visibility rather than market projection, this is the most fundable category in the framework.

Theme: 5 — Counter-UAS & Electronic Warfare

Operation Sindoor's defensive lesson was as consequential as its offensive one. The post-Sindoor DAC approved ₹3,000 crore+ in counter-UAS procurements end-2025 with a substantial multi-year pipeline behind it, and the operational mathematics confirm that every drone India procures creates parallel demand for a counter-drone system making the global C-UAS market roughly equal in size to the drone market itself. The investable sub-systems within this category are technologically and economically distinct: RF detection and jamming systems (highest near-term procurement velocity, with electromagnetic spectrum management as the binding battlefield capability), electro-optical and acoustic detection arrays (essential for low-altitude FPV interception where radar fails), and integrated multi-sensor command-and-control software (the layer that fuses detection inputs into engagement decisions and where AI/ML differentiation matters most).

Theme:6- Naval and Maritime Unmanned Systems

Naval and maritime drones are the most nascent theme in the framework and precisely for that reason, the most asymmetric for early-mover capital. The maritime drone capability in India is structurally underbuilt against a threat environment that extends well beyond conventional naval contest. India's 7,516 km coastline, 12 major ports, and dependence on sea lanes for over 90% of trade volume create a defensive requirement that ranges from anti-submarine warfare and harbor security to offshore oil and gas platform protection and subsea cable surveillance — a fast-emerging strategic concern as India's digital economy increasingly depends on undersea fiber cables. The defining feature of this theme is the absence of competition, there is no listed pure-play, white space across underwater acoustic communications, autonomous navigation, and naval-grade EO/IR sensor integration.

The convergence of policy mandate, post-Sindoor procurement velocity and a doctrinally awakened military make this the most exciting moment in Indian defense-tech in a generation. The categories we have laid out across this report are not future opportunities. They are

[24] Official Indian Army Technology Roadmap

present-tense investment windows, opening in 12-to-24-month increments, into a sector that will define how India fights, defends, and exports for the next decade. If you are building in this space, raising capital, or simply want to exchange notes on where this sector is going, we would welcome the conversation. Reach out at **usingh@argan.global**.