Explore The Legal Challenges Associated With Military Modernization In India

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I. Abstract

The Indian military has always been in great need of modernization and better weapons. India has always been dependent on foreign countries for its military supplies. From the Russian T-90s to Sukhoi and from artillery to engines, India is completely dependent on imports. India tried to make progress with its first '**Marut**' aircraft which flew in the Bangalore skies under the leadership of WWII Luftwaffe aircraft designer Kurt Tank[1]. but with regular engine failures, the plan to make it India's legendary aircraft was dropped and Mig-21 was acquired instead. India has been among the top-ranking arms-importing countries for decades by holding 9.8 per cent of total global arms imports. The current Narendra Modi government has made it an agenda to reduce defence imports and achieve self-reliance in the sector. In 2023-24, the annual defence production hit a record high of 1.27 lakh crores. **The defence exports also showed an increase of 32.5 percent to ₹21,083 crores.** Defense Minister Rajnath singh also promised to increase the exports to 50,000 crores by 2028-29[2]. This paper looking at the development highlights the framework which the services follow for procurement and modernization. The procurement of weapons, its procedure and the challenges faced by the military or created by them are all highlighted. With the biggest problem being India's dependence on foreign technology, a glance at the problems regarding the sanctions faced by India and why the industrial capacity doesn't all complete technology transfer. Following the government's Atmanirbhar Bharat plans, the paper looks at India's ambitions, plans and the dilemma between indigenisation and foreign import. Bureaucracy which controls the military has been a point of problem as it creates delays in the process. The military also faces the growing cyber security threats with the increased dependency on technology. This paper looks at the problems with a case study. Solutions and recommendations like quarterly reports, specialised committees and steps to make India's defence industry have also been looked at to resolve them.

II. Literature Review

A Book, 'India's Military Modernization: Challenges and Prospects[3]' sheds light on the theory of civil-military relations and how the bureaucracy controls the military. He also talks about the absence of dialogue in the current structure of the military. Talking about the achievements and changes, the report mentioned the old problems with still remain and continue to negatively affect the military but

[1] ceto, Guy. "Kurt Tank's Indian Storm." HistoryNet. Last modified March 6, 2019. https://www.historynet.com/kurt-tanks-indian-storm/.

[2] "India Gradually Emerging As Global Hub in Defence Manufacturing, Says PM Modi in His Independence Day Speech." The Economic Times. Last modified August 15, 2024. https://economictimes.indiatimes.com/news/defence/india-gradually-emerging-as-global-hub-in-defence-manufacturing-says-pm-modi-in-his-independence-day-speech/articleshow/112543134.cms?from=mdr.

[3] Basrur, Rajesh M., Ajaya K. Das, and Manjeet S. Pardesi. India's Military Modernization: Challenges and Prospects, 1-21. Oxford International Relations, 2014. - (Online ISBN: 9780199082674) published on Oxford Scholarship Online

failed to show the complete picture of challenges in procurement, contracts, technological transfers and indigenisation progress.

An Article, 'Risks in Defence Procurement: India in the 21st Century', ISSN: 1024-2694 (Print) 1476-8267 (Online), by Oishee Kundu was published in the Defence and Peace Economics Journal in 2019. This article discusses the risk in contracts and the reason for delays of several projects. The article also deals with the technological risks that the Indian Military has to deal with and the problems faced during International Procurement. This article fails to show our progress in the field and why we fail. It also doesn't shed light on the international laws and relationships with countries which affect our modernization.

An Article, 'Indian Defense Policy at a Crossroads', written by Harsh V Pant was published in the Asia-Pacific Review, Vol. 17, No. 1, 2010 talking about our history and path towards military modernization. It analysed India's relationship with Russia, Israel and the West and how it is growing. The article highlights the problems faced by the military like the inability to use power and lack of institutional capacity. This article fails to highlight the legal challenges hindering the relations and neither does it provide any ways to solve it.

This is a widely covered topic with many papers and articles written on including topics like the advancement in the military, how NPT is affecting us, the failure and the comeback of 'Arjun' MBT, bureaucratic hurdles, the Army vs Navy issue and the Indigenisation progress. This paper tries to look into the nuances of the issue and explain how project failure and delays are associated with more than one problem. This paper will also explain the hurdles created by the forces themselves hindering modernization. The main aim of this paper is to bridge the gap between the scattered information and to present an informative paper on the legal challenges for the Military.

III. Introduction

The Indian subcontinent has been facing a growing threat of dominance in recent years. China has started to flex its muscles in the South China Sea, starting the path to claiming the seas. The Chinese have also engaged in several agreements with India's neighbours to station their military in their country. The growing threat of China's dumping in several countries and their resistance to free and fair trade has raised concerns around the world. After the Galwan incident, the tensions between India and China had been high prompting India to increasingly grow its military capabilities. The Indian Government has tried making its own string of pearls around Chinese bases in the Indian Ocean to combat the Chinese growing presence, also called the '**necklace of diamonds**'.

Table 7.3 Major Projects (with time and cost overruns) Completed (1996–2006)

No.	Project	Date of Sanction	Projected Date of Completion (Original)	Projected Date of Completion (Revised)	Cost original in Crores	Cost revised in Crores	Date of Closure	Time overrun (in years)	Cost overrun in Crores and Percentage
1.	Light Combat Aircraft (LCA) Ph-I	August 1983	August 1993	March 2004	560	2,188	July 2005	12	1628 (390 per cent)
2.	Lakshya (Target Drone)	September 1980	September 1987	July 1994	17	30	July 1998	11	13 (176 per cent)
3.	Nishant UAV (Unmanned Aerial Vehicle)	October 1991	April 1995	March 2003	34	60.83	October 2005	10	26 (178 per cent)
4.	Pinaka (MBRL)	December 1986	December 1992	December 2000	26.47	55.33	February 2005	13	29 (212 per cent)
5.	Main Battle Tank (MBT) Arjun	May 1974	May 1984	May 1995	15.50	305.6	September 2000	16	290 (1971 per cent)
6.	Panchendriya (Naval Electronic Warfare)	November 1987	November 1993	December 1998	31.22	31.23	February 2000	7	0
7.	Sagardhwani (Naval sensors)	October 1987	June 1991	March 1999	44.90	80.01	December 2000	9	35 (178 per cent)
8.	AET	September 1987	August 1992	October 1999	12.51	24.43	May 2002	10	12 (195 per cent)
9.	Sarvatra (Bridging)	December 1992	December 1999	December 2000	17.58	22.80	December 2001	2	5 (130 per cent)

Note: Where MBRL stands for Multibarrel Rocket Launcher; AET for Advanced Experimental Torpedo

Source: Standing Committee on Defence, 14th Report: Defence Research and Development Organization.

India has continued to view China as a threat along with Pakistan and has changed its procurements and military plans keeping in view the two sides' threat on the borders. The government has come up with several programs to indigenous military production and become self-reliant as military autonomy is crucial for our strategic autonomy and operational readiness. The Indian government has been increasingly signing agreements with foreign nations to better our military production capabilities. The BrahMos Missile made together with Russia has been the recent hallmark of success for DRDO. But these recent victories have come at a price paid for years. The projects run by the Indian government have failed to meet time and budget deadlines. **The majority of projects are exceeding the time limit by 8-16 years and in some cases, the budget has exceeded more than 1600 crores [4].** The government has come up with several rules and procedures to improve Indian capabilities but some legal challenges still need to be rectified or at least surpassed to reach our goals.

The challenges not only extend to production but also technology because the DRDO has. The military still relies on other countries to provide better technologyand the negotiating termsoften include IP rights, licencing agreements and compliance with countries and international laws and

[4] Basrur, Rajesh M., Ajaya K. Das, and Manjeet S. Pardesi. India's Military Modernization: Challenges and Prospects, 1-21. Oxford International Relations, 2014.

regulations. This paper thus delves into all the challenges that India is facing related to military modernization and tries to provide to solution that can help us combat the growing problem.

IV. India's Military Modernization & its Legal Framework

The Indian military follows the normal theory of Civil-Military relations as coined by Samuel Huntington in his classic The Soldier and the State. The theory established that there are two ways of control - objective and subjective. India follows the '**objective control**' which honours the distinction between the two institutions - civil and military roles. It allows the military complete autonomy over its management and plans to accomplish the goals as decided by the civilian authorities. This is control to the 'subjective control' that the United States of America follows where the lines between the military and civilian roles are blurred and the military becomes another arm of the government.

Following the objective control, the Indian government has given a lot of powers for procurement and demands to the military. The Military follows the **Defense Procurement Procedure (DPP)**[5] for the procurement of arms from other nations. The DPP, first formulated in 1992 has undergone a lot of changes and lays down the procedure to be followed for procurement. DPP mentions four categories in a preferential manner namely Buy (Indian – Indigenously Designed, Developed and Manufactured), Buy (Indian), Buy and Make (Indian), Make (Indian), Buy and Make, and Buy (Global). The military services are required to give reasons for not choosing a higher category, thus keeping focus on indigenisation. The Military also drafts the General Staff Qualitative Requirements (GSQR), which includes the technical specifications of the weapons on the basis of which they are evaluated. Though the GSQR has been heavily criticised, it remains be main brochure for the services needs.

V. Military procurement and challenges

The defence procurement in India always happens keeping in mind our adversaries - China and Pakistan. The growing arsenal of our enemies has prompted the Indian Government to keep the number in check and import better and more equipment. The forces are free to procure the weapons which it deems fit. , the forces still have procured many indigenised goods like the Agni missiles, Arjun Tank, INDRA (radars), Tejas Aircrafts, Pinaka Rocket Launchers, etc.

The military follows strict rules and guidelines prescribed by the DPP. The forces give the Request for Proposal (RFP) document calling for vendors to supply the goods as mentioned in the Service Qualitative requirement. The SQRs are approved at three stages- the Services Capital Acquisition Plan

[5] (Manohar Parrikar). DEFENCE PROCUREMENT PROCEDURE 2016 CAPITAL PROCUREMENT. GOVERNMENT OF INDIA, MINISTRY OF DEFENCE, 2016.

Categorisation Committee, the Services Capital Acquisition Higher Categorisation Committee and the Defence Acquisition Council (DAC). the acquisition is done by the acquisition wing and after the technical evaluation, the contract is finalised with the Contract Negotiation Committee. The main procurement within India is done by the ordnance factories and PSUs.

The growing support for the private sector and better procurement procedures hasn't done any good and turned out to be a curse instead of a boon. The private sector finds it difficult to make it into the defence sector because of the high costs of technology and research. The government's 'Make in India' initiative is commendable, but challenges have arisen in aligning defense procurement with evolving needs. The Indian Army's recent demands for a new tank, including specifications like a 55-tonne weight and 800 mm RHA frontal armor, are ambitious and may not be practical based on current global standards. The request for multiple loading systems and a fourth crew member further complicates the design. Similarly, the Futuristic Infantry Combat Vehicles (FICV) program has seen delays due to shifting requirements, which can hinder timely delivery. The Arjun tank's development, despite its value today, faced setbacks with engine and fire control systems, as well as transportation limitations. These challenges highlight the need for better coordination and streamlined processes to ensure efficient defense procurement. While public sector undertakings (PSUs) play a key role, improving communication and planning will be essential to meet the army's needs and deliver on time.

The procurement of equipment from International vendors has also seen delays mainly due to non-compliance with the terms of the contract and the difficulty faced in the enforcement of the contract. The problem with an agreement on the deadline between both parties and challenges in negotiation has also been seen as one of the problems causing delays. The production of Kolkata-class destroyer and Shivalik-class frigate is the prime example of this problem. The audit report shows the absence of agreed timelines as a major problem. Even though the services are proactive in solving the problem, contractual problems remain to hinder the procurement of military equipment[6].

The **Countering Americas Adversaries Through Sanctions Act (CAATSA)** was introduced in 2017 by President Donald Trump. This Act was introduced to sanction any country making an arms deal with Russia. During the S-400 deal with Russia, India faced a threat of sanctions from the American Government. CAATSA sanctions were also imposed on China when they purchased the S-400 system and Sukhoi- 35S. Similarly, Turkey was also penalised and thrown out of the F-35 program when they signed a US$2.5 billion to purchase S-400. This was done even though Turkey

[6] Kundu, Oishee. "Risks in Defence Procurement: India in the 21stCentury." Defence and Peace Economics 32, no. 3 (2019), 343-361.

funded the F-35 program[7]. This threat keeps India away from Russian equipment, considering Russia is India's biggest defence partner.

VI. Legal Challenges to Technology Transfer

A. Laws and sanctions

The expansion of Indian defence capabilities and industrial cooperation started with the US giving India the status of a 'Friendly Foreign Country'. The FFC status opened the gates of defence engagement and industrial cooperation between both countries. During Hilary Clinton's visit to India, the Indian Government signed the **End-Use Monitoring Agreement (EUMA)**[8]. The main goal of the agreement was to monitor the defence equipment exported to India and to ensure that they were only used for the 'end-use' for which they were imported. This gives the US the right to inspect the equipment to ensure the agreement is followed. This restricts India from working with Russia with several equipment integrations. The Russians disapprove of any such integration because of the threat of American spying on their equipment and technology. This can hinder defence technology integration and cooperation between both countries.

The Treaty on Non-Proliferation of Nuclear Weapons (NPT) endorsed control of the spread of Nuclear weapons around the world, hindering countries from procurement of nuclear weapons and materials. It designated countries which had detonated nuclear weapons before 1967 as 'nuclear-weapon states'. Other countries who agreed to not pursue their nuclear weapon ambitions were designated as 'non-nuclear weapon states'. Countries were given access to peaceful nuclear technology as part of the treaty. India chose to not be a part of this treaty because the treaty gives some countries the right to hold nuclear weapons while forcing others to give up. This severely restricts India's capabilities of getting nuclear technology and several technologies related to enhancing nuclear capabilities. This treaty also restricts high-grade nuclear fuel from being exported to India which is the reason why during Indira Gandhi's reign, an agreement had to be reached with the US for the export of low-grade uranium fuel to India from France while not violating the provisions of International Atomic Energy Agency(IAEA). In 1978, the United States Congress passed the Nuclear Non-proliferation Act to show the US's commitment to non-proliferation[9]. Before the enforcement of such a treaty, India was advancing in its nuclear ambitions to become a nuclear state. In 1955, Canada agreed to supply India with a 40-megawatt

[7] Shaza Arif. "India's Acquisition of the S-400 Air Defense System Implications and Options for Pakistan." JOURNAL OF INDO-PACIFIC AFFAIRS 🐚 FALL 2021. Accessed August 13, 2024.

[8] Pant, Harsh V. "Indian Defense Policy at a Crossroads." Asia-Pacific Review 17, no. 1 (2010), 124-144.

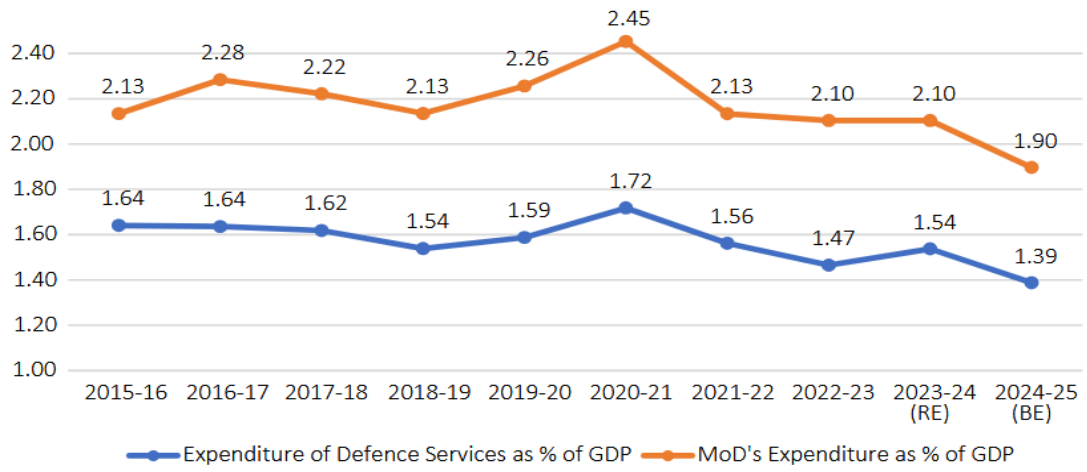
[9] Ghosh, Arundhati. "India and the Non-Proliferation Regime: Consistency or Change?" Indian Foreign Affairs Journal 1, no. 1 (2006): 32–44.

Canada-India reactor (CIR) followed by the US supplying 21 tonnes of heavy water for the reactor. But after the 1974 nuclear tests, the Nuclear Supply Group (NSG) stopped the supply of nuclear and civilian dual-use technology for the next 30 years[10]. This treaty has been restrictive and continues to hinder military development and modernisation. Even today military nuclear development in India is threatened by sanctions from the US and restricted by the NPT.

B. Indian Infrastructure Capacity

During the 1999 Kargil War, India suffered a major setback and had to depend on foreign imported equipment, giving India a bitter taste of foreign dependence. The foreign nations also took full advantage of this tough situation and sold equipment at exploitative prices with many even sending refurbished items. This failure to achieve the infrastructural capacity to produce equipment on our own has always been there and no government has been able to completely resolve it looking at the geopolitical turmoil India is caught in.

Figure 4. Expenditure of Defence Services and MoD as % of GDP



Source: Union Budget and Economic Survey (various years).

The article 'Risks in Defence Procurement: India in the 21st Century' which was published in the year 2019 **analysed 39 contracts which faced technological risks. It was found that 19 cases of delay were due to lack of raw materials or infrastructural facilities. It also included 8 cases of initial teething problems with indigenisation efforts.** Lack of raw materials or difficulty in procurement could sound like illogical answers to why the military wasn't supplied

[10] Spring, Baker. "Nuclear India and the Non-Proliferation Treaty." The Heritage Foundation. Accessed August 5, 2024.

with essential defence equipment but it still occurs. The production of Aircraft carriers was a great example of it as it was delayed due to problems in the procurement of steel. The Parachutes(PARA) special forces battalion was also working without parachutes for a decade due to the inability of the Kanpur ordnance factories to procure fabric.

The Defence Sector Public Undertakings (DPSUs) continue to face significant challenges in areas such as exports, labour productivity, and innovation. Despite substantial investments in infrastructure, several projects have been abruptly halted, leading to concerns about resource allocation and efficiency. **For instance, a recent report noted that it took 12 years to build an air-conditioned facility for a project, which was unfortunately terminated shortly thereafter, raising concerns over resource management.**

Additionally, labour productivity within the DPSUs has been observed to be below optimal levels, reportedly less than one-fifth of global benchmarks. A notable setback for India was the discontinuation of the indigenous production of Rafale aircraft. Dassault Aviation, the French manufacturer, declined to proceed with the deal due to concerns over the higher labour hours quoted by Hindustan Aeronautics Limited (HAL) for producing 108 Rafale aircraft under the transfer of technology arrangement. HAL's estimated 31.2 million man-hours—2.7 times the total French requirement—raised questions about productivity and manufacturing efficiency.

While some may attribute this development to broader strategic or political factors, the productivity challenges and limited production capacity within certain DPSUs cannot be overlooked. As of the latest data, the total personnel strength, including scientists, stands at 24,000 against a sanctioned strength of 34,000 (including 8,700 scientists). Former Defence Minister A.K. Antony also expressed concern about the sector's cautious approach towards research and development[11].

VII. India's growing Indigenous development

A. Make in India Program

The Indian Government has been continuously trying to make the defence industry self-reliant while working together with Foreign governments to improve our technology and capabilities of our weapons. India has advanced further in several areas like the missiles and tanks in the last few years. Missiles like Agni-V and Brahmos are among the best long-range and nuclear-capable missiles

[11] Laxman Kumar Behera. (2023, October 26). The state of India's public sector defence industry. orfonline.org. https://www.orfonline.org/research/the-state-of-indias-public-sector-defence-industry

and the Arjun tank has been considered the best tank that India has despite being a heavy tank like the others. The **Arjun tank** has surpassed several Russian and American tanks to become the best tank with better equipment and fighting capacities. The tank also uses 'Kanchan' composite armour to protect the tank. Many experts who saw Arjun in the DEFEXPO 2004 said that it is "much stronger that that of T-72 or T- 90S." The indigenously developed hydro-pneumatic suspension in the tanks provided comfort that prevents fatigue during extended runs. The **Agni-V** has been the result of constant growth and work by the DRDO. the mission started with the Agni-I missile which was a single-stage short-range missile with a payload capacity of up to 1000 kg. The range was expected to reach targets within 700-900 km. This missile was continuously upgraded and today after Agni-II, Agni-III, and Agni-IV, we have Agni-V which is reported to have a range of 5000 km and is a three-stage solid-propelled ballistic missile[12]. The missile has the capability to perform nuclear strikes with targets reaching Beijing and Shanghai. India has restricted the range to 5000 km but the range can be extended for a longer range. This is a strong step towards nuclear deterrence in a war-like situation. The Arjun tank is considered the best tank that India has, even better than the Russian T-90. The Arjun MBT is heavier than the T-90 but has better max road speed. Arjun has better firepower, high mobility and excellent production. It has a 1400 hp engine compared to the T-90's 950 hp engine. With up to 93 modifications with the MBT, it has mine plough, automatic target tracking and up to 90 per cent hit probability of fire control system[13]. Even though the tank is considered more expensive than the Russian substitute, the cost can be significantly reduced with better procurement planning and industrial line setup.

The Indian defence Industry has grown exponentially in recent years with the exports touching a record ₹21,083 crores in the financial year 2023-24. When compared to the previous decade, the exports have grown 21 times from ₹4,312 crores in 2004-05 to 2013-14 to ₹88,319 crores in 2014-15 to 2023-24[14]. This growth in exports and 'Make-in-India' production has skyrocketed the defence company and PSUs stocks. This growth has seen a collaborative effort between both the public and the private sector with both contributing 60 per cent and 40 per cent respectively. The government has made strong policy decisions for the defence sector. First, the government has set a positive indigenisation list and second, marking 75 per cent of the capital acquisition budget for procurement of equipment from

[12] Debalina Ghoshal. "View of India's Agni Missile Systems: Strengthening India's Nuclear Deterrence." Artha - Journal of Social Sciences 2018, Vol. 1 7 , No. 4 , 5 3 - 69 ISSN 0975 - 329X, CHRIST (Deemed to Be University) Journals. Accessed August 11, 2024.

[13] Vikas. "MBT Arjun is a formidable tank, but can it replace Russian made T-90?" OneIndia. Last modified January 29, 2018.

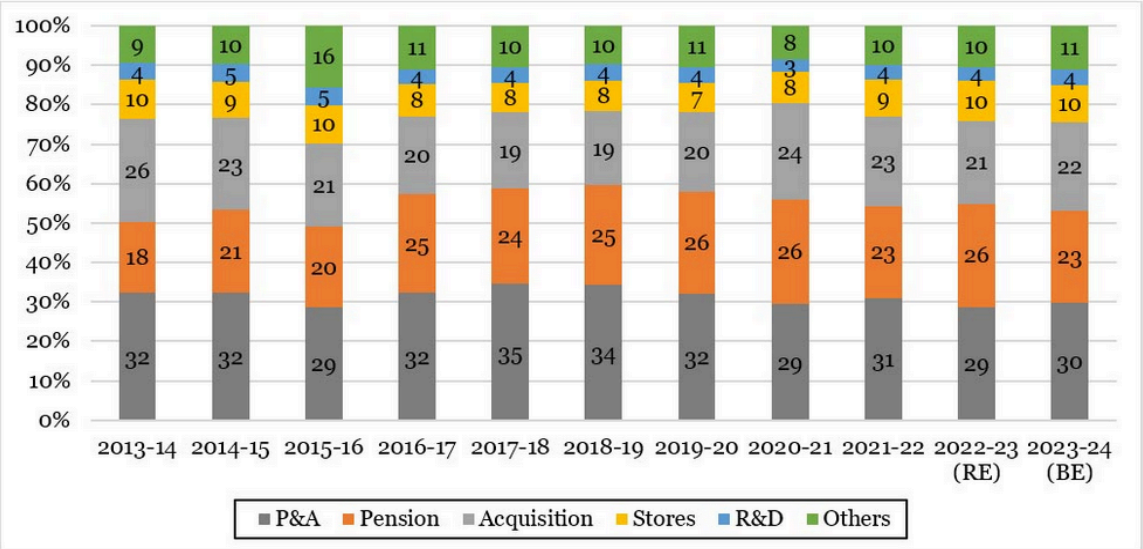
[14] "Guns N' Growth: Inside Defence Sector's Explosive Make-In-India Story." The Economic Times. Last modified April 3, 2024.

local manufacturers. The government has given approval to nearly 45 companies/joint ventures operating in the defence sector with foreign OEMs (Original Equipment Manufacturers), along with the Innovation for Defence Excellence (iDEX) scheme to create an ecosystem of innovation and tech in the defence industry by engaging R&D institutes, academia, industries, start-ups and even individual innovators.

It was informed by the Defense Ministry that during the last five years (2017-2022) and in the financial year 2022 up to December, 90 capital acquisition contracts were signed for procurement of capital defence equipment. **Out of these 90, 62 contracts were worth 84 per cent of the total value and these were signed with Indian vendors.**

The figure below illustrates the relatively modest expenditure on research and development. This trend of limited investment in R&D has persisted over the years, and despite the promises and ambitious goals, appreciable levels of investment in the sector have yet to be realized.

Figure 3. Distribution of MoD's Expenditure



Source: *Author's own, based on Defence Services Estimates (relevant years) and Union Budget (relevant years)*

B. Public VS Private

To overcome the bureaucratic and productivity constraints of the defence sector, the government brought in policies, like the Mission Gyan Shakti, encouraging the involvement of private companies in the industry. With India's first policy of procurement, Indian Private defence vendors become the first choice in the military's choice. The revised DPP, which all forces have to follow, mentions several categories with India being on top like the new Buy (Indian – Indigenously Designed, Developed and Manufactured) category, focusing more on Indian products. Private

players have the potential to significantly contribute to research and development, innovation, and collaboration, thereby enhancing defense sector growth. While Public Sector Undertakings (PSUs) have the expertise and industrial capacity for production, private entities often lack the necessary resources and funds for large-scale defense investments. A well-structured **Public-Private Partnership (PPP)** can provide private players with a platform to expand while ensuring that the military receives advanced, cost-effective weapons within specified timelines. Although PPPs offer substantial benefits, challenges remain that can hinder their success, despite the increased productivity they generate. A key consideration is the potential increase in costs when involving the private sector, as businesses are driven by profit motives. These increased costs often include insurance premiums for assets, flight and ground risk insurance for maintenance, and other expenses. Currently, Indian businesses lack the efficiency and capacity to produce military equipment at the required scale, as evidenced by the challenges faced in the Rafale deal, where the French opted not to produce the aircraft in India.

While public sector undertakings (PSUs) possess the capacity for production, they often lack access to advanced designs, technology, and equipment development. In contrast, countries like the UK, France, and Germany have effectively implemented the Public-Private Partnership (PPP) model in various defense-related areas, such as simulators, satellite communications, and major contracts like the Future Strategic Tanker Aircraft (FSTA) for the Royal Air Force. These countries also rely on PPP for training programmes involving helicopters, fighter jets, and weapons systems for their armed forces. In India, the private sector can play a significant role in areas like research, development, and leasing units for standardized production. This collaboration could lead to the creation of more efficient and higher-quality products, while the PSUs focus on areas where they excel.

The partnership between the government and the private sector, though recommended, has not been fully realized due to security concerns. **Approximately, 30-35 per cent of the Buy (Indian) capital acquisitions of the ₹52,700 crore were based based on nominations of government enterprises**[15], reflecting a perception that private companies are driven mainly by profit motives. This has also delayed the implementation of policies like the MSME Act, which mandates 20% procurement from MSEs.

[15] Sushil Chander. "Public-Private Partnerships (PPPs) and the Road to Self- Reliance in Defence: a Perspective." Journal article // CLAWS Journal . Accessed August 13, 2024.

Despite this, the private sector has proven effective in key defence projects like the Pinaka Rocket System and the Akash Air Defence System, developed in collaboration with the DRDO and private firms such as Tata Power and Larsen & Toubro.

C. Dilemma of Indigenisation

The '**Make in India**' program has faced ongoing challenges in meeting the military's needs, despite efforts to enhance defence indigenisation through Public-Private Partnerships (PPP) and domestic procurement. While there has been progress in building capacity, much like how the iPhone is labeled "Made in China" but only assembled there, India's defence indigenisation often involves delays and inefficiencies.

India's indigenisation programs have consistently faced delays, resulting in the military choosing alternative weapons, and by the time indigenous projects are completed, the equipment often becomes outdated. For instance, after the 1971 war, India sought to reduce its dependence on foreign arms by developing an Armoured Personnel Carrier (APC), but the project was never inducted. Similarly, the development of the Arjun tank, initiated in 1972, was hampered by procurement issues[16]. The Combat Vehicle Research and Development Establishment (CVRDE) initially sought foreign engines, and when that failed, attempted to build an indigenous engine. However, ongoing changes in the Army's General Staff Qualitative Requirements (GSQR) further complicated the project, leading to reliance on foreign engines.

The Arjun tank, powered by the German-made MTU engine, faced supply chain disruptions when the manufacturer closed its production line due to limited orders from the Army. This resulted in a significant delay in production and difficulties in obtaining spare parts, **with reports in 2015 indicating that 75 percent of the Arjun fleet was grounded due to shortages of engine components, transmission parts, and targeting system**, illustrating the risks of foreign dependency.[17]

While India has completed several indigenous defence projects, dependence on foreign components persists. In today's interconnected global defence market, complete self-reliance may not be practical or desirable, as it limits access to advanced technologies. However, issues like the

[16] Chattopadhyay, Sankalan. "Arjun: The Journey of India's MBT." ProQuest | Better Research, Better Learning, Better Insights. Accessed August 5, 2024.

[17] Shrotryia, Ujjwal. "Arjun Tank Project Could Suffer Another Devastating Delay, Thanks To Army's Decades-Long Reluctance To Back It." Swarajya by Kovai Media Private Limited. Last modified February 16, 2024.

Army's preference for the Russian T-90 over the Arjun tank indicate that decision-making processes may also hinder the success of indigenisation efforts.

Another issue arises from the offset policy, which mandates foreign firms to reinvest a portion of their contracts into India's defence sector. However, **a 2012 audit by the Comptroller and Auditor General (CAG) revealed that many US companies, such as Boeing and Lockheed Martin, fulfilled offset obligations through non-munitions sectors, including training simulators and lab facilities.** Only Lockheed Martin's joint venture with Tata (TLMAL) on C-130J aircraft parts represented genuine defence-related reinvestment.[18] This highlights a flaw in India's offset policy, as it does not mandate investment in critical defence projects, limiting the policy's potential to strengthen domestic capabilities.

VIII. FDI in Indian military

The government has increased investment in the Defence industry and has aimed to increase Foreign Direct Investment (FDI) in the same. The Indian government opened up the defence sector to foreign participation in may 2001. The policy decision allowed FDI upto 26 percent and a three-year lock in period for defence equity inflows. In 2020, FDI policy was changed and now it involves investment by three woutes - "prohibited", "the government route" and "the automatic route". Foreign investment upto 74 percent can come in through the "automatic route" but anything above 75 percent requires "the government route"[19]. Many such provisions in the policy have been made to increase investment.

[18] Behera, Laxman K., and G. Balachandran. "Indo-US Defence Industry Cooperation: A Prognosis." India Quarterly: A Journal of International Affairs 74, no. 3 (2018), 337-342.

[19] Shivpriya Nanda, Zain Pandit. "Foreign Investment Legal Landscape in India | Chambers Expert Focus." Chambers and Partners | Showcasing the Best Legal Talent. Accessed August 25, 2024. https://chambers.com/legal-trends/approval-of-indias-foreign-direct-investment-in-the-defence-sector.

Exhibit – 1: FDI Limit in Indian Defence Sector

Phase	FDI permissible	Nature of Route
Phase – I (1992)	26% FDI, subject to licensing	Automatic Route
	Above 26%, up to 49%	Government Approval Route
Phase – II (2018)	49% FDI	Automatic Route
	Any FDI above 49%	Government Approval Route
Phase – III (2020)	74% FDI	Automatic Route
	Any FDI above 74%	Government Approval Route

In a press release by the Ministry of defence, it was informed that ₹5,077 worth of FDI was reported by companies in the defence sector[20]**.** The FDI inflows have increased 20 times between 2000-01 to 2023-24. According to the Department for Promotion of Industry and Internal Trade (DPIIT), the cumulative FDI inflow stood at $990.97 billion, while the total FDI inflow into India from April 2023 to March 2024 stood at $70.95 billion and FDI equity inflow for the same period stood at $44.42 billion. This aim of making India self-reliant also comes with the collaboration of Indian firms with other firms. This FDI also comes in through the collaboration of domestic defence companies with other foreign companies. The government has created a **Defence Investor Cell** in the ministry to provide all necessary information. The GOI has also set up the **Technology Development Fund (TDF)** to encourage public-private participation through grants to create an ecosystem to enhance cutting-edge technology development. To increase FDI and cooperation, the offset policy of the government encourages changes in Indian Offset partners and offset components, even in signed contracts[21].

A significant concern with India's FDI policy in the defense sector is the potential threat it poses to national security. Foreign investments in this industry require approval from the Ministry of Home Affairs, following the guidelines set by the Ministry of Defence. However, this policy appears

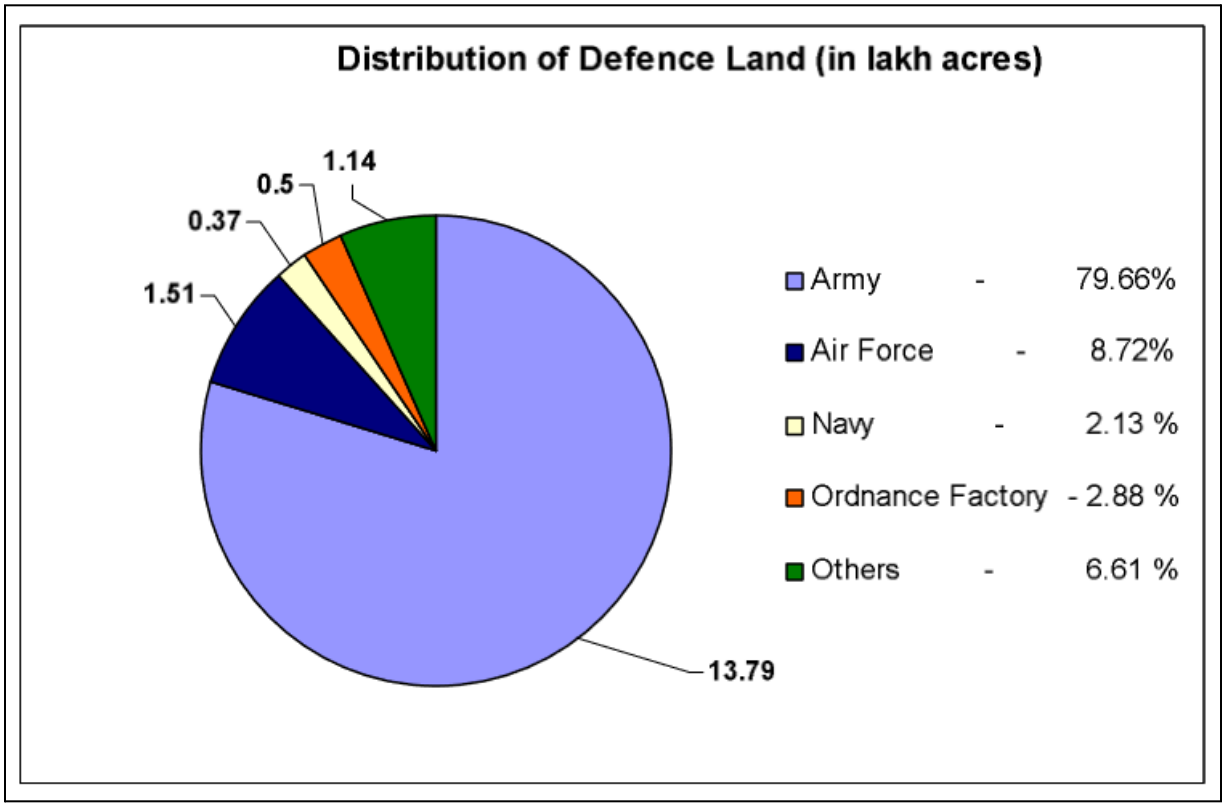
[20] Ministry of Defence. "FDI IN DEFENCE SECTOR." Press Information Bureau. Last modified February 9, 2024. https://pib.gov.in/PressReleasePage.aspx?PRID=2004475.

[21] "Private Sector Investment in Defence Production." Press Information Bureau, Government of India, Ministry of Defence. Last modified July 22, 2019. https://pib.gov.in/Pressreleaseshare.aspx?PRID=1579736.

ambiguous. While India seeks to attract FDI in defense, it simultaneously prefers to procure products from domestic companies and public sector undertakings (PSUs). The influx of foreign investment could increase oversight by foreign entities, raising concerns over the possible leakage of sensitive information to foreign governments. This issue is evident in the recent case involving Dassault's acquisition of the Nagpur facility. Dassault has sought full ownership of Dassault Reliance Aerospace Ltd. (DRAL) in the MIHAN SEZ[22] in Nagpur. The Indian government remains cautious, fearing that such ownership could undermine local sourcing and strategic advantages for the Indian defense industry.

IX. Challenges with Defence Land Acquisition

The defence Ministry is the largest landholder in the government with 17.31 lakh acres of land. Out of all the land, approx. two lakh acres are inside 62 cantonments available across the country. Among the three services, the army occupies 13.79 lakh acres which amounts to 80 percent of total land.



[22] Raunak Kunde. "Dassault Seeks Full Ownership of Nagpur Facility, Indian MoD Remains Skeptic on Claims." Indian Defence Research Wing – Latest and In-depth Coverage, Analysis of Indian Defence News from 2006. Last modified August 22, 2024. https://idrw.org/dassault-seeks-full-ownership-of-nagpur-facility-indian-mod-remains-skeptic-on-claims/.

The Comptroller and Auditor General of India's Performance Audit report on Defence Estates[23] noted the problems in handling of the land by the services. Highlighting the discrepancies, the CAG found that in the 25 audited stations, the land area was either higher than by 12,769.86 acres in nine stations and lesser by 9,427.77 acres in the remaining stations. **A parliamentary standing committee on defence found that 58,529 acres of land was lying vacant.** Out of these, up to 49,831 acres of land was acquired between 1905 and 1990. Another legal problem was of encroachment over defence land but the **CAG Audit suggested was that no action was taken against preventing encroachment[24]. In the response of an unstarred question no.843[25], the minister of state in the ministry of Defence informed that a total of 286.1924 acres of vacant land belonging to the Defence Ministry was encroached in last five years before 2021. In a Press release, the PIB informed that as of 31st december, 2018, 9622.807 acres of defence land was reported to be encroached.** Other reasons for loss of defence land is delays in project completion. Like in North Campus area, a place was given to Delhi Metro for station construction at very low rates but was later sold to private player at rates much higher than procured for[26].

The government has approved the rules that allows equal value infrastructure (EVI) development for the armed forces in return for land procured from them for public projects. The value of the land would be determined by a committee headed by the local military authority. This action eases the norms in military land acquisition which was earlier prohibited to be acquired for non-military purposes. This decision was supported by the defence secretary as it would provide military with infrastructure in exchange for land.

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[23] "Performance Audit Report on Defence Estates Management." Comptroller and Auditor General of India. Last modified 2010. https://cag.gov.in/uploads/download_audit_report/2010/Union_Performance_Defence_Indigenous_Construction_Naval_Warships_35_2010_chapter_1.pdf.

[24] "Why New Defence Land Policy May Clean Up Decades of Poor Management of Military Real Estate." Firstpost. Last modified July 20, 2021. https://www.firstpost.com/india/why-new-defence-land-policy-may-clean-up-decades-of-poor-management-of-military-real-estate-9818991.html.

[25] MINISTER OF STATE IN THE MINISTRY OF DEFENCE, SHRI AJAY BHATT. "GOVERNMENT OF INDIA, MINISTRY OF DEFENCE, DEPARTMENT OF DEFENCE, RAJYA SABHA - UNSTARRED QUESTION NO.843 TO BE ANSWERED ON 6th DECEMBER, 2021." Digital Sansad. Last modified December 6, 2021. https://sansad.in/getFile/annex/255/AU843.pdf?source=pqars.

[26] Philip, Snehesh A. "Govt Eases Norms to Make Defence Land Acquisition for Public Projects Simpler." ThePrint. Last modified October 26, 2020. https://theprint.in/defence/govt-eases-norms-to-make-defence-land-acquisition-for-public-projects-simpler/531147/.

X. Bureaucracy, Corruption and military efficiency

The strength of Indian democracy lies in its peaceful transfer of power, free press, civilian control over the military, and strong institutional frameworks. Civilian oversight ensures that the military operates within the framework of democratic accountability. This civilian control has been instrumental in fostering professionalism and internal discipline within the military, which has historically remained apolitical. Unlike some neighboring countries that have experienced military coups or disruptions, India's robust democratic institutions have successfully maintained a clear separation between civil and military roles.

However, this strong civilian oversight has occasionally presented challenges for the military. There is a growing need for policymakers and bureaucrats to engage more deeply with the military's needs and operational challenges. While efforts are being made to appoint bureaucrats for longer tenures to develop expertise, the current system sometimes falls short in facilitating effective communication between civilian leadership and the military.

One example of this challenge is the unresolved issue of transferring helicopters to the Army Aviation Wing, which has been a point of contention with the Air Force[27]. The army's need for medium-lift helicopters to enhance troop mobility remains unmet due to bureaucratic delays. A more integrated approach that combines tactical, logistical, and operational considerations could optimize combat efficiency and address such gaps.

While the military enjoys operational autonomy, the absence of consistent dialogue between civilian and military institutions can lead to gaps in decision-making. Addressing this "absent dialogue" requires better integration of the armed forces in strategic decision-making, including representation in key policy forums like the Policy Planning and Review Committee and the Joint Intelligence Committee.

The **National Security Council (NSC),** established in 1998, was envisioned as a professional body to address national security threats, coordinate security management, and plan strategically. While it has made strides in some areas, its effectiveness has been hampered by issues such as irregular meetings, information overload, and a lack of streamlined processes. The National Security Advisory Board (NSAB), which supports the NSC, has also faced challenges in having its recommendations taken seriously. For instance, the nuclear doctrine prepared by the NSAB, though critiqued for its shortcomings, did not see significant revisions or follow-up discussions. Strengthening the NSC's

[27] Pranay S. Ahluwalia. "Army Aviation: Does the Army Needs It Own Air Force?" Orfonline.org. Accessed August 5, 2024.

functioning, ensuring regular engagement, and fostering better coordination between civilian and military stakeholders are critical to enhancing India's national security framework.

India's military is widely regarded as professional and disciplined. However, like other institutions, it is not immune to challenges, including instances of corruption. **According to the Ministry of Defence, over 1,000 cases of alleged corruption involving armed forces personnel were reported between 2010 and 2020. The army reported the highest number of cases, followed by the air force and navy.**[28]

One prominent case was the **Sukna Land Scam**, where a senior military officer was found guilty of misusing his position to facilitate the transfer of land to a private developer. Although disciplinary action was taken against the involved parties, the incident underscores the need for robust safeguards and greater accountability to prevent similar occurrences.

A. Whistleblower policy

The Indian government enacted the **Whistle Blowers Protection Act, 2014**, to establish a framework for addressing complaints regarding corruption or the misuse of power. The Act also includes provisions for protecting whistleblowers against victimization. In 2015, amendments were introduced through the **Whistle Blowers Protection (Amendment) Bill, 2015**, to prohibit disclosures that could compromise national interests. This includes information related to trade secrets, sovereignty, scientific or economic interests, foreign relations, personal safety, and matters protected under the **Official Secrets Act, 1923**.

Despite the legislative framework, instances of whistleblowers facing adverse consequences, including unexplained deaths, have been reported, raising concerns about the effectiveness of these protections. In 2018, a whistleblower who was an army jawan was found deceased under mysterious circumstances in an abandoned barrack.[29] Reports suggested he had felt pressured and distressed after appearing in a video that brought attention to certain grievances. While the incident was investigated, the circumstances surrounding it remain unclear, highlighting the need for stronger institutional mechanisms to protect whistleblowers within sensitive organizations.

XI. Recommendations

A. **Integrate senior military representatives** into the National Security Council (NSC) and the Defence Ministers' Committee (DMC) as permanent members. Clearly define the committee

[28] PTI. "1,080 Corruption Cases Reported in Armed Forces Since 2010: Govt Data." ThePrint. Last modified March 14, 2022. https://theprint.in/india/1080-corruption-cases-reported-in-armed-forces-since-2010-govt-data/873145/.

[29] Raj Shekhar. "Whistleblower Army Sahayak Found Dead." The Economic Times. Last modified March 3, 2017.

structure, roles, and accountability measures to prevent overlap or delays in decision-making.

B. Form **specialized committees focusing on specific domains like equipment procurement, research and development, and domestic manufacturing.** These committees must include permanent military representatives, along with industry experts and policymakers, to balance operational needs with technical feasibility. Set clear timelines and objectives for each committee to avoid bureaucratic delays.

C. **Make quarterly performance reporting to the Ministry of Defence (MoD) mandatory for heads of departments.** Reports should highlight progress, challenges, and corrective actions taken. Establish an independent review body to audit these reports for accountability and transparency.

D. The military needs to be **more objective about their GSQR** and needs to keep it fixed instead of changing it again and again. The committees should review the GSQR to rectify any outrageous requirements.

E. Establish a **Defence Industry Oversight Department** to monitor private companies' adherence to quality standards, risk management, and collaboration with foreign entities. Conduct periodic audits and introduce penalties for non-compliance.

F. Introduce a **flexible budgeting framework** that accommodates cost fluctuations and ensures sufficient funding for critical projects. Allocate contingency reserves for unexpected procurement needs.

G. Prioritize the **standardization of weapons and ammunition** to improve operational efficiency and create economies of scale. Develop indigenous manufacturing capabilities to support standardized production.

H. Enforce **stronger offset agreements** that mandate foreign suppliers to invest in Indian defence industries. Focus on developing core industries such as metallurgy, avionics, and electronics to reduce dependence on imports.

I. Move away from the idea of complete indigenization and collaborate with foreign countries and companies for timely supply of advanced technology and equipment. Focus on **strategic indigenization**, where critical systems are domestically produced while non-critical components

are sourced internationally.

J. **A comprehensive legal framework tailored to the military should be developed under the Whistle Blowers Protection Act, 2014.** This framework must include secure, encrypted channels for anonymous reporting of misconduct and the establishment of an independent body dedicated to investigating whistleblower cases within the military. Anti-retaliation measures should be enforced through strict penalties and the provision of legal assistance to protect whistleblowers. To encourage credible disclosures, a reward system can be introduced alongside awareness programs to educate military personnel about their rights and the procedures for reporting. Additionally, safety provisions such as relocation and protection services should be made available to whistleblowers facing threats, ensuring their security and well-being.

XII. Conclusion

This journey of military modernisation in India is multifaceted and caught in legal challenges encompassing procurement, technology transfer and Indigenous development. The procurement laws and procedures aim to ensure transparency and to make sure that equipment is procured as per the legal standards mentioned. This often leads to delays and inefficiencies in the process. The problem of technology transfer with contracts, international laws and company reluctance has been brewing for a long and continues to restrict India's free and all modernization. The process is also impeded by regulatory bottlenecks, lack of R&D and lethargic bureaucrats. The military also has to deal with land grabbing problems and cyber security issues. This can impact their working if they infect the system.

To solve this issue, a holistic approach needs to be followed which includes hundreds of small changes to make a big change. A successful modernization can only be achieved by navigating through these problems and fostering an environment of defence indigenous development. India is continuously growing in its defence capabilities and this is the only way to maintain strategic autonomy.

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