

A STUDY OF DEFENCE MATERIAL EXPORT IN INDIA –AN EXAMPLE TO SUSTAINABLE BUSINESS THROUGH IMPORT SUBSTITUTION

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Abstract

Integration into the global economy has proven to be a powerful means for countries to promote economic growth, development and poverty reduction. Over the past 20 years, world trade has grown at an average of 6% a year, twice the rate of world production. Trade is considered as an engine of economic growth. When the General Agreement on Tariffs and Trade (GATT) was established, the world trading system has benefited from eight rounds of multilateral trade liberalization, as well as unilateral liberalization. The creation of the World Trade Organization helped to manage the growing number of trade agreements. The integration of the global economy has raised living standards of the people worldwide. Most developing countries have shared this prosperity. In some places, income has increased significantly. The developing countries have become much more important in world trade – they now account for one third of world trade in services compared to traditional goods exports, manufactured goods account for 80% of developing country exports. Furthermore, trade between developing countries has increased rapidly, with 40% of their exports now going to other developing countries. More liberalization, in both industrialized and developing countries, will be needed to realize the potential of trade as an engine of economic growth and development. The efforts of industrialized countries, and the wider international community, should be intensified to remove the trade barriers faced by developing countries, especially the poorest. The quotas under the multi-fibre agreement phased out in 2005 led to faster liberalization of textiles and agriculture. Similarly, the elimination of tariff peaks and tariff escalation in agriculture and manufacturing should also be pursued. In turn, developing countries will strengthen their own economies (and those of their trading partners) if they make sustained efforts to further reduce their own trade barriers.

India's defence exports hit a record increase in 2021-22, and the achievement was the result of government policies to promote the export of military equipment to friendly countries. Defence minister Mr. Rajnath Singh said that India registered defence exports worth Rs 8,000 crore in the last six months of the current fiscal year and aims to achieve the target of outbound shipments of Rs 35,000 crore by 2025. With the vision of the "Aatmanirbhar Bharat" India has entered the mainstream manufacturing industry. The government is focusing on increasing the participation of the private sector for their development as well as that of the nation and invites the foreign companies to join the public sector defence units. To promote 'Build in India, Build for the World' government opened 310 other defence-related categories to private players. India's defence exports grew almost sixfold between 2017 and 2021, growing from 1,520 crore to 8,435 crore during the period (Rs 12,815 crore) in the financial year 2021-22. In addition, the Indian government has set a target of \$22 billion (175 trillion rupees), by the financial year 2024-2025. [11]

The Make in India initiative places a strong emphasis on import substitution to lessen the significant reliance on imports of large foreign armaments. The government has announced a list of more than 400 defence products that would be gradually indigenized over the next years to replace imports. The nation also wants to improve its ability to export defense-related parts, pieces, and equipment and

multilateral trade relations. Defense exports increased significantly, according to Ministry of defence data.

Keywords: Integration, defence exports, Aatmanirbhar Bharat, Ministry of Defense, import substitution.

I. INTRODUCTION

India has become the fifth largest economy and joined the ranks of the world's "Magic Five" economies, with a GDP of \$3.5 trillion. Moreover, India is expected to become the third largest economy after the United States and China by 2027. India's aerospace and defense industry is estimated at \$9.7 billion (80,000 crore rupees) in 2019-2020, with the private sector contributing up to \$2.05 billion (17,000 crore rupees). India's defense sector has witnessed significant growth in recent years, attracting long-term opportunities, partnerships and leveraging synergies in the defense and space sectors, thanks to major localization efforts by the government. To support the country's defence sector, the Department of Defense has undertaken major reforms, cutting overseas defense procurement spending from 46% to 36% over the past four years during 2018-21. In the Union budget for 2022-2023, the total capital allocation has been increased to USD 18.65 million (Rs 152 trillion) (approximately 68%) to promote local manufacturing infrastructure supported by the R&D ecosystem. The government's continued efforts to boost India's defense exports are gradually shifting India from its 'Make in India' vision to 'Make for the world'. Currently, India exports defense equipment to more than 75 countries across the world. Defense exports have grown by 334% over the past five years to a staggering record of \$1.55 billion at a CAGR of 32% from FY17 to FY22, with a growing private sector contribution. Thus, many private players today stand an excellent chance to contribute to the Indian defence manufacturing growth story. In this research paper, the researcher reviews the recent achievements of Indian economy in Defence material export by studying policy initiatives and India's multilateral trade relations.

II. RESEARCH METHODOLOGY

This research study is based on secondary data collected from website of Defence ministry of India and other published research papers and articles.

III. OBJECTIVES

1. To understand the trend in India's Defence material exports.
2. To study the policy regulations introduced for promoting defence material export.
3. To review India's multilateral trade relations since 2015.

IV. RESEARCH GAP

The researcher studied many published research articles and reviewed statistical data of growing trends of defence manufacturing sector but the specific analysis on defence material manufacturing and its exports is not available. The emerging trade practices followed by India to strengthen the defence manufacturing sector and the impact of the new policy initiatives on defence material exports are not studied. The improvement of Indian economy in defence export, new policies like Make in India, Atmanirbhar Bharat also studied in this paper.

V. REVIEW OF LITERATURE

In November 2021, the Defense Acquisition Board (DAC) accepted capital acquisition proposals worth Rs. 79.65 billion (\$1.07 billion) – for modernization and the operational needs of the armed forces. The government has formulated the "Defence Production and Export Promotion Policy 2020" to foster the self-reliance of the defense manufacturing industry under the "Aatmanirbhar Bharat" program. (kumar & Shahi, 2022)

The WTO Trade Facilitation Agreement – to which India is now a signatory and which has now been approved by Cabinet – appears to provide the guiding framework within which the necessary steps can be taken. India must develop a roadmap on a war basis to ensure that its goods and services meet

the highest standards of technical barriers to trade; sanitary/phytosanitary rules; labelling, packaging, customs, clearance and freight procedures; best or second best environmental and lab or regulations. (Singh Puri, 2017)

The armed forces have made clear their intention to continue supporting indigenization efforts and exporting defense products to friendly countries. While the Defense Export Strategy provides a framework to encourage the domestic defense industry to manufacture and export defense products, several proposed measures, if adopted and implemented, will help and give the much-needed impetus for indigenization, strengthening India's defense industrial base and at the same time increasing defense exports in the coming years. (Chander (CLAWS), 2019)

India's USP lies in its dynamic defense market, while Israel has proven to be a reliable strategic partner with its advanced technology and willingness to transfer that technology. Thus, defense cooperation will continue to further strengthen the Indo-Israeli defense relationship. (Singh, 2022)

VI. BACKGROUND OF INDIA'S EXPORTS

The Department of Commerce, through the Bureau of Foreign Trade, works with states and territories to channel the potential and diverse identities of our country's regions as export hubs. The regions as export hubs aim to facilitate exports, manufacturing and job creation at the local level by making the states and territories as important stakeholders and active players in making India a global powerhouse. Export promotion thus contributing to the achievement of AtmaNirbhar's mission and Make in India's vision. Go global and expand in India by increasing manufacturing in urban areas while focusing on generating interest and economic activity in the country's rural hinterland and small towns helps to maintain equal development. A greater focus on exports by targeting the region as a potential export hub could also bring India closer to global value chains, through agriculture, marine, textiles, pharmaceuticals, chemicals and a whole series of engineering products. Following this objective, export hubs formed for products/services with export potential including GI products, agricultural clusters, toy clusters, etc. Export Promotion Committees (DEPC) at district level were created in all regions of the country to support the promotion of exports and sort out bottlenecks in the growth of regional exports. The primary function of the DEPC is to prepare and implement a District Specific Export Action Plan (DEAP) in collaboration with all relevant Central, State and Territory stakeholders. District Specific Export Action Plans identifying specific actions needed to assist local exporters/manufacturers to produce sufficient quantity and quality of exportable products and to reach potential buyers outside India, these programs have been governed by the DEPC and the Directorate General of Foreign Trade (DGFT) in 242 districts. The action report has been finalized and is currently in the consultation phase of the 338 districts.

1. STATUS OF INDIA'S DEFENCE MANUFACTURING SECTOR

The Indian Armed Forces is one of the strongest armed forces in the world and consists of three services: Indian Army, Indian Navy and Indian Air Force. The annual Global Firepower Defense (GFP) rating ranks countries based on 50 different factors, including manpower, air force, army, navy, natural resources, logistics, finance and geography. At the start of 2022, India ranked fourth in the Power Index with a score of 0.0979. India has an active military force of 145,000 armed men. As of January 2022, the country had 2,182 fixed-wing and rotary-wing aircraft. The country also has about 4,614 tanks and 12,000 armoured vehicles. However, India has become one of the largest arms importers in the world, accounting for 11% of total global arms sales. Alternatively, India realizes that it needs to rely less on defense imports and put more emphasis on exports. In recent years, India is the only major country in the world to have significantly reduced its dependence on import of defence equipment. The country's imports fell 21% in 2017-21 compared to 2012-16. This is due to the growing importance given to the indigenous design and manufacture of defense equipment by the private sector and various public companies.

According to the Ministry of Defence, since 2014, the country's arms exports have increased six-fold to Rs. 116.07 billion (\$1.5 billion) in the fiscal year 2021-2022. This astronomical increase is attributed to various reforms proposed by the government to increase defense exports and improve the ease of doing business. It has signed a major \$375 million (Rs 27.7 crore) export deal with the

Philippines for the BrahMos supersonic cruise missile. The deal is likely to open the door for India to export defense products to various Asian countries such as Indonesia and Vietnam. India is also in talks with some Middle Eastern countries such as the United Arab Emirates and Saudi Arabia for the export of BrahMos and Akash air defense missiles. (2)

2. INDIAN DEFENCE INDUSTRY ECOSYSTEM

While India's imports have increased from \$19.432 billion to \$15.356 billion, the government has been trying to reduce defense imports and boost domestic industry export of defense items over the past five years. The government has introduced several defense measures and reforms aimed at increasing domestic manufacturing capabilities while encouraging the use of new technologies. In the early 2000s, the government allowed 100% private sector participation in defense production, with foreign direct investment (FDI) capped at 26%. However, these incentives have not facilitated the affordability of defense contracts, as the Ministry of Defense (MoD) and defence procurement process does not have sufficient functionality to encourage private industry participation. The list of major defense items exported are Personal Protective Items, Maritime Patrol Vessels, ALH Helicopters, SU Aviation, Bharati Radios, Coast Guard Systems, Transmitters and FCS Kavach MoD II, Radar Parts, electronic systems and light industrial machinery parts, etc.

3. THE WAY FORWARD

Revamping the defense manufacturing ecosystem is a step towards "Make in India", a promising direction for the defense industry, and it goes hand in hand with the broader goal of making India defense equipment exporter that can compete with the products from other countries, its current international competitors. Acknowledgments include streamlining the defense equipment procurement process, allowing the government to fund up to 70% of development costs and the passage of automatic routes. From the early days of aftermarket manufacturing to today, liberalized private sector players have grown from local manufacturing.

VII. EXPORT REGULATIONS- POLICY REGULATIONS INTRODUCED FOR DEFENCE MATERIAL EXPORT

The export items in Category 6 of the Export of Special Chemicals, Organisms, Materials, Equipment and Technologies (SCOMET) Ammunition List, excluding those covered by Notes 2 and 3 of the SCOMET Products Mark, is governed by the standard operating procedure (Current (2018) SOP) released by the Department of Defense Production. (NOTE: Unless restricted, exports of products on the Ammunition List are permissible under Department of Defense Production Authorization). Standard operating procedures mention specific steps to be taken for a variety of purposes, such as actual export, export for testing and assessment, participation in exhibitions, looking for international commercial possibilities, and transferring technology or software. Under Section 10 of the Arms Act of 1959, the Ministry of Home Affairs (MHA) has delegated authority and duty to the Ministry of Defense Production to export the weapons and ammunition mentioned in the Schedule.

1. EXPORT PROFILE OF INDIAN DEFENCE INDUSTRY

In the fiscal year 2017–18, the export value of the Defense Public Sector Enterprises (DPSU), Ordnance Factory Board (OFB), and Private Defense Industry was 4,682 crore rupees (based on licences issued). Exports of defence goods are facilitated by about 50 private Indian enterprises. Italy, the Maldives, Sri Lanka, Russia, France, Nepal, Mauritius, Israel, Egypt, United Arab Emirates, Bhutan, Ethiopia, Saudi Arabia, the Philippines, Poland, Spain, and Chile are the countries India exported defence goods. Personal protective equipment, maritime patrol boats, ALH helicopters, American avionics, Bharati radios, coastal surveillance systems, Kavach MoD II and FCS transmitters, radar parts, systems electronics, light industrial machinery parts, etc. are among the primary defence items exported. (13)

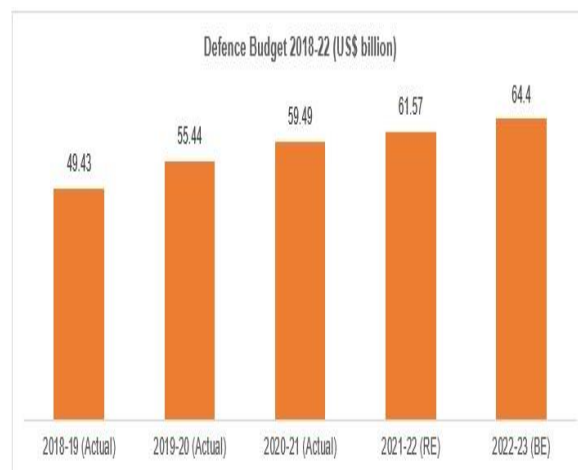
MAJOR PLAYERS IN DEFENCE MATERIAL MANUFACTURING

The Aerospace and Defense sector has 16 Central Defense Public Sector Units (DPSU) under the Ministry of Defence, which manufacture equipment and platforms for the Defense Forces and internal security. Hindustan Aeronautics Limited (HAL) is the largest DPSU and part of the Indian Ministry of Defence, Department of Defence Production (DDP). The Ordnance Factory Board (OFB), consisting of 41 Indian artillery factories, is being reorganized into seven DPSUs under the Indian Ministry of Defence, DDP. Private sector players include original equipment manufacturers (OEMs) and foreign original equipment manufacturers (FOEMs) with expertise and years of excellence. India's supply chain base comprises over 12,000 micro, small and medium enterprises (MSMEs) and 194 new defense technology solutions. The public sector (i.e., DPSU and OFB) has the largest share, accounting for 71% of the manufacturing space. while private sector companies contribute 21%. Additionally, other PSUs or joint ventures may be private or public corporations or joint ventures.

2. INDIAN DEFENCE BUDGET

Notably, the upward trend in Indian defence budget adds \$2.83 billion, or 3.54%, between fiscal years 2021-22 and 2022-23. The budget of organizations such as Indian Coast Guard (ICG), Border Roads Organization (BRO) and Directorate General of Defense Industries (DGDE) has increased by 55.60%. Opened research and development opportunities provided for industry, start-ups and universities to initiate the allocation of 25% of the defense budget in fiscal year 2022-23.

The graph below illustrates the increase in the budget allocated to the defense sector to promote localization and local manufacturing, which is pushing the private sector to boost defense exports, making India a hub for armed equipment.



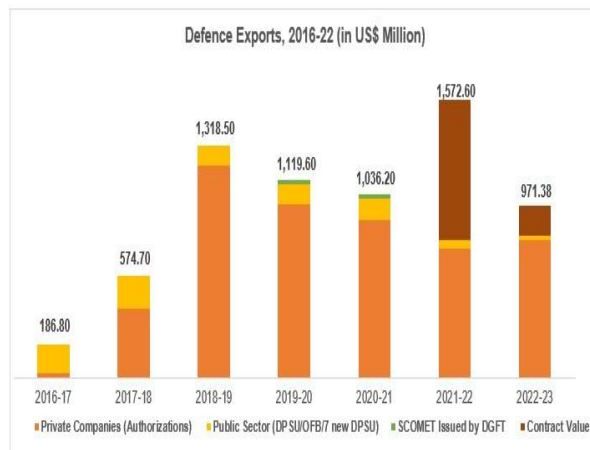
Source: Ministry of Defence (Department of Defence Production (DDPD))

Note: Values of FY22-23 are budget estimates 1 INR= 0.01227 USD

3. INDIA’S DEFENCE EXPORT STATUS

Indian defence exports have not been impacted by the COVID-19 epidemic, declining only 7.5% from the industry boom in 2019, reflecting the development of India's private sector capabilities. 47% of the \$732 million in exports for the fiscal year 2021–2022 were the result of "export licences" given by the government to these businesses. In the third quarter of the fiscal year 2022–2023, the private sector received export licences worth \$780 million. Moreover, in 2021–2022 defence exports reached a record high of \$1,572.6.

Indian defence exports between FY2016-17 to FY2022-23:



Source: Department of Defence Production (DDPD) Dashboard

4. GOVERNMENT INITIATIVES: DEFENCE ACQUISITION PROCEDURE (DAP)- 2020

The Defense Acquisition Process (DAP)-2020 supports indigenous design and production of defence goods and takes "Aatmanirbhar Bharat Abhiyan's guiding principles into account. Using the following channels, the "manufacturing" initiative seeks to give domestic design and production more consideration:

Make-I (Government Funded): Platforms, systems, and gadgets with significant industrial design and development. Up to Rs. 70 lakhs, or up to 70% of the prototype development cost, Rs 2.5 billion was given by the Development Agency (DA).

Make-II (Commercial Funding): This initiative features design and development work from Indian suppliers as well as innovative solutions. Government financing is not provided for these initiatives, but if a viable prototype has been developed, access is assured.

Make-III (locally funded): The equipment might not have been created locally, but it might have been produced in India in partnership with or in a joint venture.

By 2024, a total of \$2.4 billion (Rs 200 billion) is expected to be invested in Tamil Nadu and Uttar Pradesh's defence corridors. Introduction of the Srijan portal in August 2020 will make it easier to find DPSU, OFB, and help for private players. Indigenous Content (IC) guidelines were created by the Defense Procurement Program (DPP) to aid Indian producers of parts, systems, and equipment in breaking into the global defence supply chain. Purchasing from an Indian supplier with at least 50% Indigenous Content is known as "Buy Indian" or "IDDM" (Indigenous Design, Development, and Manufacturing) (IC). Purchase only from Indian vendors when it is possible. 60% if a minimum of IC is required, or at least 50% if the designed design is considered as indigenous.

Global Acquisitions - The category of Government to Government (G2G)/Intergovernmental Agreement (IGA) covers acquisitions of capital bought from international or Indian providers. The IC requirement is nil for overseas vendors, but it is at least 30% for Indian sellers. Purchase of capital goods from an international vendor in a fully formed (FF) state, followed by indigenous manufacture by an Indian production establishment, involving the transfer of technology (ToT). 50% of indigenous content is necessary as a minimum.

5. OTHER INITIATIVES

Government of India aims to promote investment in vital technologies and technology transfer (ToT) for the Indian military sector. The Defense Research and Development Organization (DRDO) established the Technological Development Fund (TDF) to expedite application processing, improve process efficiency, accountability, and transparency, and facilitate online audit claims for compensation, among other things. The Indigenization Checklist is made to assist start-ups, SMEs, and lone innovators in developing prototypes and solutions to issue statements that have been developed for pertinent defence stakeholders. Under the Mark II category, three platforms—the "Land Tactical Communication System," the "Light Tank," and the "Light, Medium and Heavy Armoured Combat Vehicles and/or Mine Protected Infantry Vehicles"—will be built. The Department of

Défense's Active Indigenization List, one of three lists containing 780 defense-related technologies, encourages SMEs and start-ups to create innovative technologies.

6. DEFENCE PRODUCTION AND EXPORT PROMOTION POLICY 2020 (DPEPP 2020):

The DPEPP 2020 is envisioned as a comprehensive road map to give the nation's defence production capabilities a focused, organised, and major push for exports and self-reliance. Moves in Many Directions Toward a Self-Reliant Defense Sector. Progressive improvements have been made with the aim of empowering the private sector. Introduced Indian IDDM (Indigenously Designed, Developed, and Made), a new category in the DPP 2016. Indian IDDM was given advantage over all other categories if any Indian companies chose it.

STRATEGIC COLLABORATION:

A strategic partnership approach enables Indian businesses to work with foreign original equipment manufacturers (OEMs) and obtain technology transfer, the capacity to build and produce in India, and the ability to sustain those projects in India. The first conventional submarine Request for proposal (RFP) is currently operational.

7. POSITIVE INDIGENOUS DEVELOPMENT

The government is forbidding itself from importing anything for the first time to support local business. There are two positive indigenization lists with 101 and 108 items each, covering a wide range of products from platforms to weaponry to sensors to the full spectrum. In short, the Government has taken several policy initiatives in the past few years and brought in reforms to encourage indigenous design, development, and manufacture of defence equipment, thereby promoting self-reliance in defence manufacturing & technology in the country.

These initiatives include:

Procurement of capital items falling in Buy Indian (IDDM) Category from domestic sources under Defence Acquisition Procedure (DAP)-2020

Notification of four 'Positive Indigenization Lists' of total 411 items of Services and three 'Positive Indigenization Lists' of total 3,738 items of Defence Public Sector Undertakings (DPSUs), for which there would be an embargo on the import beyond the timelines indicated against them.

Simplification of Industrial licensing process with longer validity period.

Rationalised Defence Product List which required Industry License

Liberalization of Foreign Direct Investment (FDI) policy allowing 74% FDI under automatic route

Simplification of Make Procedure

Launch of Mission DefSpace - to develop innovative solutions for the three Services (Indian airforce, Navy and Army)

Launch of Innovations for Defence Excellence (iDEX) scheme involving Start-ups & Micro, Small and Medium Enterprises (MSMEs)

Implementation of Public Procurement (Preference to Make in India) Order 2017

Launch of an indigenization portal namely SRIJAN to facilitate indigenisation by Indian Industry including MSMEs.

Reforms in Offset policy with thrust on attracting investment and Transfer of Technology for Defence manufacturing by assigning higher multipliers.

Establishment of two Defence Industrial Corridors, one each in Uttar Pradesh and Tamil Nadu.

Earmarking of 25% defence R&D Budget for industry led R&D.

Progressive increase in allocation of Defence Budget of military modernization for procurement from domestic sources.

An end-to-end online admission and consent portal for processing export authorizations has been developed. Applications submitted on this portal are digitally signed and authorizations are issued digitally at a faster rate.

For repeat orders of the same product from the same unit, no inquiry is required. Consultations previously held with all stakeholders on repeat orders of the same product to different entities are now limited to the Ministry of External Affairs.

The government notified the Open General Export License (OGEL) - a single export license that allows industry to export specified items to specified destinations listed in the OGEL without having to apply for a license export. Export during OGEL validity period. OGEL is integrated with an end-to-end online portal.

Defense Export Facilitation Program has been notified to provide potential exporters with the opportunity to have their products government certified and provide access to Department of Defense testing infrastructure for initial validation and testing in the product area later. Potential exporters can present this certificate to properly market their products on the world market.

The Department of Defense Production has established a separate group to coordinate and track import and export related actions, including requests received from different countries, share leads with private sector companies and facilitate exports.

Few extreme challenges encountered by various entities are mentioned below: Cyber Security since indigenization programme is intensively IoT dependant Data capturing, Telemetry and Data Analytics are techno intensive hence requires required infrastructure and experts for handling systems, Adequate dedicated funding, Uses of Predictive & Prescriptive Maintenance to keep functioning Plants, Machineries and Specialist Equipment meant for indigenization, Participative Management to share ideas & smooth functioning, Adequate professional affiliation with standard bodies, Academia & R & D institutions, Continuous Upgradation & Reskilling to match with competitors, Development of in lieu materials to reduce cost and making ease of functioning. Introduction of Alternative fuels and non-Conventional energy source during indigenization process to adhere green technology requirements and eco balance.

VIII. ACCEPTANCE OF MAKE IN INDIA

Israeli defense companies have been the most agile foreign companies in adapting to the "Make in India" priorities of the Narendra Modi government. Today, more than 100 national defense companies rely on Israeli companies for raw materials, subsystems, niche military technologies and systems for various Made in India defense programs. Some of them are joint production or joint development, others are off-the-shelf components and systems that now have an Indian company involved in their manufacture or assembly. In general, this has become an almost parallel economy of the India Israel Defense Corporation, separate from the sale of all or part of the weapon systems to the armed forces.

Indian public and private defense companies currently produce \$12 billion worth of armaments a year, with the Israel Defense Company being the largest supplier of nuclear technology and systems. As the "Make in India" policy becomes more ambitious, Israel is leading the charge with foreign partners by proposing a new G2G defense mechanism. The most ambitious example is Israel's offer to supply Phalcon AWACS and Tactical UAV under the Make in India policy, all these complex platforms will be integrated, assembled, and manufactured in India in cooperation with local companies. Israel has offered the integration of two Phalcon AWACS aircraft for \$800 million and IAI (Israel Aerospace Industries) in partnership with state-owned HAL (Hindustan Aeronautics Limited) for \$750 million to jointly produce 20 Heron tactical drones. (SIAL, n.d.)

1. INDIA'S MULTILATERAL TRADE RELATIONS SINCE 2015

Defence relationship has emerged as a major pillar of India-U.S. strategic partnership with the signing of 'New Framework for India-U.S. Defense Relations' in 2005 and the resulting intensification in defence trade, joint exercises, personnel exchanges, collaboration and cooperation in maritime security and counter-piracy, and exchanges between each of the three services. The Defence Framework Agreement was updated and renewed for another 10 years in June 2015. The two countries now conduct more bilateral exercises with each other than they do with any other country. India participated in Rim of the Pacific (RIMPAC) exercise in July-August 2016 for the second time with an Indian Naval Frigate. Bilateral dialogue mechanisms in the field of defence include Defence Policy Group (DPG), Defence Joint Working Group (DJWG), Defence Procurement and Production Group (DPPG), Senior Technology Security Group (STSG), Joint Technical Group (JTG), Military Cooperation Group (MCG), and Service-to-Service Executive Steering Groups (ESGs).

The agreements signed during the past one year include, Logistics Exchange Memorandum of Association (LEMOA) signed in August 2016, Fuel Exchange Agreement signed in November 2015, Technical Agreement (TA) on information sharing on White (merchant) shipping signed in May 2016 and the Information Exchange Annexe (IEA) on Aircraft Carrier Technologies signed in June 2016. Aggregate worth of defence acquisition from U.S. Defence has crossed over US\$ 13 billion. India and the United States have launched a Defence Technology and Trade Initiative (DTTI) aimed at simplifying technology transfer policies and exploring possibilities of co-development and co-production to invest the defence relationship with strategic value. The DTTI Working Group and its Task Force will expeditiously evaluate and decide on unique projects and technologies which would have a transformative impact on bilateral defence relations and enhance India's defence industry and military capabilities. During President Obama's visit in January 2015, the two sides agreed to start cooperation on 4 DTTI pathfinder projects and 2 pathfinder initiatives, which are currently at various stages of execution. In December 2015, the two sides also identified opportunities for bilateral cooperation in production and design of jet engine components. During Secretary Carter's visit in April 2014, two more G-2-G DTTI projects were added to the list. The DTTI meeting in Delhi in July 2016 decided to broaden its agenda by setting up five new Joint Working Groups on: Naval Systems; Air Systems, Intelligence, Surveillance and Reconnaissance; Chemical and Biological Protection; and Other Systems. During the visit of Prime Minister to the U.S. in June 2016, the U.S. recognised India as a "Major Defence Partner", which commits the U.S. to facilitate technology sharing with India to a level commensurate with that of its closest allies and partners, and industry collaboration for defence co-production and co-development.

XI. FINDINGS

Even though there were no fixed targets for the export of military stores to other countries, India could achieve import substitution in defence material manufacturing.

Indian defence procurement process does not have sufficient functionality to encourage private industry participation.

India's supply chain base is very strong comprises over 12,000 micro, small and medium enterprises (MSMEs) and 194 new defense technology solutions.

Government has taken several policy initiatives in the past few years to encourage indigenous design, development, and manufacture of defence equipment to attain self-reliance.

Many challenges are created by those countries supplying defence items and few limitations are inherent in our system.

The economic challenges due to the Covid pandemic faced by potential customers of Indian defence equipment are also expected to pose a challenge. The Philippines, for instance, in November 2020, cited issues with funding to conclude a deal for Brahmos. In March 2021, however, in a significant development, both countries signed an Implementing Agreement, paving the way for the procurement of defence equipment from India. This does indicate that the Southeast Asian country's challenging security environment has trumped economic considerations in dictating its defence choices.

More than Rs 120,000 crore of DRDO technology-based systems have been inducted into the Indian armed forces in the last few years and over 400 Transfer-of-Technology (ToT) agreements have been concluded with the Indian defence industry. Still, more than 140 DRDO technologies are available for licensing by the Indian defence industry, across niche areas like mini-unmanned ground vehicles, active electronically scanned array (AESA) radars, chemical, biological, radiological, and nuclear suits, among others. It is up to the increasingly robust Indian defence industry to take advantages of such readily available technologies.

X. SUGGESTIONS

The products that India's military needs and imports from other nations should be considered as prospective exports.

India has to offer comprehensive defence solutions, which include involve technological know-how, spare parts, and training to operate the weapons, rather than just exporting defence products. This will facilitate India's recognition, particularly among less developed countries as well.

Continuous efforts should be made to strengthen government's recently introduced policy moves aimed at improving indigenous capabilities and luring FDI into the defence industry.

Ensure uniformity in policy and less onerous licencing requirements with private and foreign players be enticed to invest.

Strengthen Micro, small and medium enterprises (MSMEs) and 194 new defense technology solutions The Indo-Israeli defense relationship will continue to flourish as the two countries offer each other strategic Unique Selling Points (USPs).

The government must provide institutional support to facilitate the selling of goods that are "Made in India.". The sector should be closely coordinated by a full-fledged Directorate supported by Indian embassies worldwide. They should actively seek for prospects in other markets and encourage the sale of Indian defence equipment rather than only acting as intermediaries.

If India is able to provide policy stability, accurate item identification, comprehensive product solutions, and active institutional support for marketing of defence equipment, it will be able to achieve its goal of exporting US\$ 5 billion in the next five years and US\$ 10-15 billion in the following ten years.

CONCLUSIONS

India's defence indigenization push is expected to add value to the domestic defence industry and help boost their exports profile. Not just incremental but significant changes in institutional structures and policy framework have been initiated to facilitate defence exports, signifying an unmistakable intent and resolve on the part of the government. The defence eco-system, made up of DPSUs, ordnance factories, private industry, DRDO, Start-Ups, and the academia, is indeed becoming more dynamic as it strives to achieve the tough defense exports targets. In sum, while the traditional Indo-Israeli defense relationship has a long history, it is growing stronger as changing strategic realities increasingly demand indigenization. So far, both sides have been plagued by an increase in the arms trade and the modernization of weapon systems imported from elsewhere.

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