

“The Defence Industrial Corridor of UP: A Baby Step in World of Defence Markets”

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Abstract

The defence Industry sector has a significant role in Indian Territory. With more than 14.4 million active personnel, it comprises one of the strongest and largest armed forces. The lack of Defence Industries has increased India's dependency on other nations. It is the dream of Prime Minister to create an atmosphere that encourages new and creative entrepreneurship in the defence manufacturing sector. Our current priorities include strengthening domestic manufacturing under the “Make in India” initiative as well as expanding the defence industry. This will enable us to retain our armed forces outfitted with cutting-edge technology and to establish the required domestic industrial environment; we must operate with a sense of mission. UP is the third largest economy among all the states of India. So, for the manufacturing defence equipments and products, Govt. of India has announced to establish two corridors. Among these one will be in UP and another in Tamilnadu. It will contribute more in U.P and India's economy as well. For the purpose of the study, we have reviewed various published sources. The purpose of this study is to analyze the defence corridor, its implications on UP and its Economy, India's Position in the defence markets and the top Importers of Defence Equipments from India in the world. Authors have also tried to find out what kind of challenges could be faced by defence industries in UP.

Keywords: Defence Industries, Make in India, UP, Defence Equipments and Defence Corridor

Introduction

“It is our responsibility to make India of Sardar Patel's dreams and to make a self-reliant India. And the UP Defence Industrial Corridor in Bundelkhand is going to play a pivotal role in this campaign. Bundelkhand, which was once known for India's valour and courage, will now be recognized as a major center of India's strategic strength.” – **Prime Minister Narendra Modi.**



Fig.1: Source: <https://www.financialexpress.com/defence>

The Indian defence sector is undergoing a rapid transformation as the country looks to increase indigenous manufacturing initiative in addition to focusing on expanding the defence market. To ensure national security, the country shall have strong armed forces with its own superior arms and defence equipments. The most recent wars that have taken place around the world have shown that innovative defence techniques and its superiority are essential to fighting in the 21st century due to its quick response time, long range, precision targeting capabilities, ability to transport resources where they are needed, and flexibility and adaptability to changing circumstances (Kenchappa, L. R., 2019). India is currently one of the countries that import the most conventional defence gear. Government reports show that imports satisfy about 60% of India's defence needs. With appropriate government efforts, India has the potential to become a leading global hub for offsets, supply chain sourcing, software development, and defence research and production (Dash, J. P., & Kumar, D., 2018). Also,

because the Indian Armed Forces are the second-largest in the world, a significant amount of money is spent on defence and aerospace technology. Despite having a sizable domestic defence industry, India relies significantly on imports to supply its armed forces with the weapon systems and platforms they need (Das, S. P., 2019). With a share of 9.5% in global imports between 2014 and 2018, it is one of the biggest importers of armaments. A total of \$47.47 billion (excluding Defense pension) has been allotted for defence in the Union Budget 2020–21, of which a third is set aside specifically for capital expenditures. The Defence Industry of India is very critical from strategic point. Indian Military forces are one of the largest in the world with active troops of 1.44 million (14.4 Lakh) and the number of troops in volunteer military is 5.1 million (51 Lakh) is largest in world. U.P is Country's 4th largest state and 3rd largest economy of the country. It is home for 16.5% of India's population. Amongst the top 5 manufacturing state U.P has 2nd highest number of SMEs in India. The Exports are growing at rate of CAGR of 13.26% in U.P. It is the aim of India's Prime Minister Narendra Modi to create an ecosystem that would support new and creative entrepreneurship in the defence manufacturing industry working with a feeling of purpose is to make our defence forces capable and equipped and also to make a place in global defence markets. Our country is currently looking at ways to improve domestic production under the "Make in India" programme in addition to expanding the defence industry. The Finance Minister has stated that two Defence Industrial Corridors (DICs) would be established throughout the nation in the Union Budget (2018-19). Two Defence Industrial Corridors were subsequently selected to be established in Tamil Nadu and Uttar Pradesh. These corridors will make use of and strengthen the already-existing defence industry ecosystems in these areas. It will act as catalysts for the nation's defence industry to expand and develop economically and encourage the domestic manufacture of defence and aerospace-related goods, reducing our dependency on imports and encouraging export of these goods to other nations. With the emergence of private domestic producer, Micro, Small and Average Businesses (MSMEs), and Start-ups, India will be able to fulfill its aim of being self-sufficient in the defence sector. The strategic alliance for imports of defence equipments with Russia and US are increasing. The current international security and threat perceptions, the defence industry trends and challenges,

the convergence of geo-economic and geo-strategic interests between India and the US have strengthened the defence industry collaborations between them. The strategic/security cooperation, in which the defence sector links would be a fundamental component of the ongoing "US-India strategic partnership," has been supported by the confidence and trust that have been created in recent years between the US and India in the entire bilateral relationship (Sharma, A., 2013). What must be recognised is that the goal of all these actions is to ensure the local businesses thrive. By enabling foreign business engagement, they may benefit from knowledge transfer and greater market access. Such a strategy is seen in the government's actions to raise the limit on foreign direct investment (FDI) from 26 to 49 percent (Mehrotra, A., & Gupta, D. B., 2022).

Review of Literature:

We looked over a wide range of published sources for this article, including papers, news releases, and official websites. According to Dash, J.P. & Kumar, D., "Challenges of Setting up Defence Corridor for Make in India" there are several challenges that could be faced in setting up of these corridors. They explained what mechanism should be adopted to integrate industry and defence, interaction of SEZs which will lead to goal of Industry 4.0. The first challenge that could be faced is related with up gradation of technology, Second related to composition of material that is to be used, Third is related to need of talented Engineers, and so on. The draft policy of 2020 for Defence production focused on achieving more turnovers as compared to prior target. According to Pandit, R., "Draft Policy seeks self-reliance for India in defence production" the overall policy and draft of Defence production and Export Promotion Policy (DPEPP 2020) have stated objective of achieving turnover of \$25 Billion which include export of \$5 Billion in aerospace and defence goods & services by 2025. Author also discussed that a similar policy was earlier framed in 2018 but nothing came out as result. The main motive for setting of these corridors is to make India self-reliant in defence sector. According to Verma, S. (Retd. Lt. Gen.), "Ensuring Progress of Defence Corridors" the role of self reliance in defence industries is crucial and how India is recovering from the pandemic. The DIC is result of decision taken during revival from pandemic.

According to Singh, V., “UP Defence Corridor set to realize Rs 50,000 cr. investment potential” there should be collaboration with private sector. Author mentioned the statement of former Air Chief Marshall R.KS Bhadauria, who said that for the success of Corridor MOU of Rs. 12000 cr. have been signed with private companies and institutions. And it requires proper structuring of the policy. According to Manjul, T., “UP’s Defence Industrial Corridor Propelling the AatmaNirbhar India Mission” there is pivotal role of self-reliant defence sector after Russia-Ukraine conflict. Author discussed the detailed plan of defence corridor. According to Adhana, D. & Saxena, M., “Foreign direct investment in defence sector: Security concern or strengthening India's defence” increase in foreign direct investment (FDI) up to 100% allows new original equipment manufacturers (OEMs) to access our domestic defence markets without working with indigenous firms. Previously, accessing the Indian market meant forming a joint venture with a domestic company.

Objectives of Study:

- To know UP’s DIC in detail.
- To identify the total area to be included in Defence Corridor.
- To identify the MOUs for investments in UP’s DIC.
- To find out the total spending on Defence in relation to GDP.
- To know the trends of Export and Import of Defence Equipments in India and its current position globally.

To know UP’s DIC in detail:

India’s dream of Self-reliance in Defence sector is rooted in early independence stage. For fulfilling this dream Hindustan Aeronautics Limited (HAL) was established in 1940 in Bangalore. With this industrial base in place, self-sufficiency got a further boost following the 1954 US-Pakistan strategic partnership, and the border tension with China which intensified in the late 1950s. Responding to the unfolding security scenario, the government expanded the

defence industrial infrastructure. In 1954, a defence electronic company, India Electronics, was set up with French assistance. The government also acquired two shipyards—Mazagon Dock Ltd and Garden Reach Shipyard— and placed them under the control of MoD for undertaking naval construction (Behera, L. K., 2016). On February 21, 2018, the Prime Minister opened the UP-Investment Summit in Lucknow and announced the creation of a Defense Industrial Corridor in Uttar Pradesh. The Uttar Pradesh Expressways Industrial Development Authority is constructing the Uttar Pradesh Defense Industrial Corridor (UPEIDA). Agra, Aligarh, Chitrakoot, Jhansi, Kanpur, and Lucknow are among the six nodes that have been identified in the Uttar Pradesh Defence Corridor. Every UPDIC node's land purchase has already been started by the state government. In order to encourage Research & Development and the expansion of Micro, Small, and Average-Sized Businesses (MSMEs) in U.P, the Union Government and the State Government are working closely together. The Potential investment to be received is worth **Rs 12,139 cr.**

Why Uttar Pradesh has been chosen for the Defence Industrial Corridor?

Addressing the defexpo2020, the defence minister Rajnath Singh said “UP stands for unlimited potential” (Minister, D., 2020). This is because it has shown rapid growth in recent years. It has been selected for defence corridor because of following reasons: -

- It is among the top five exporting and manufacturing states in India.
- It is India's third vast economy and contributes nearly eight per cent to GDP.
- There is already a substantial defence industrial base in place, including three Hindustan Aeronautics Limited (HAL) production facilities and nine Indian Ordnance factories that produce steel castings, small arms, parachutes, field guns, and other items.
- The Eastern and Western Dedicated Freight Corridor are well connected to it.
- It has a strong ancillary base and the most MSMEs in India (14.2 per cent).
- It has a huge human resource base because 56% of UP's 230 million population are of working age.

- It has the largest railway network in the nation, increased air traffic capacity for both passengers and cargo, and a robust logistics infrastructure.

Achievements related to UP's DIC:

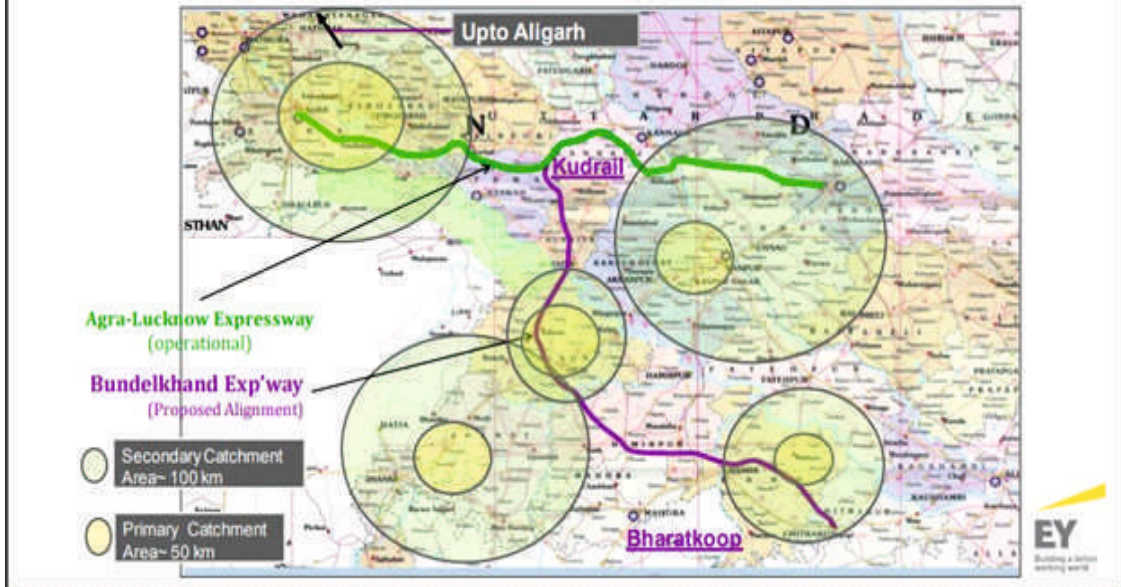
- The Government of Uttar Pradesh has approved IIT Kanpur and IIT Banaras Hindu University Varanasi to create Centers of Excellence related to the Defense Industrial Corridor and has allocated them a total of Rs. 2.00 cr. and Rs. 69.00 cr. respectively, for the fiscal year 2018–19. The work of technical institutes for CoE has begun.
- Creation of Uttar Pradesh Defence and Aerospace Unit and Employment Promotion Policy (First Amendment) 2019 for attracting investments.
- The Department of Industrial Development Government of Uttar Pradesh has received a proposal to develop the Defence Park as a joint venture of UPEIDA and IIT, Kanpur on 30 Acres of land proposed in Shivli close to the IIT Kanpur.
- It is being proposed to establish a CFC in Lucknow to do prototyping, designing, skill development, and incubation, among other activities.

- **To identify the total area to be included in Defence Corridor:**

The total area which is acquired for this corridor is around 5071.19 Hectares of land divided as 3025 Hectares in Jhansi, 1000 Hectares in Kanpur, 500 Hectares in Chitrakoot, 300 Hectares in Agra, 200 Hectares in Lucknow, 45.89 Hectares in Aligarh. Figure 1 shows the nodes in which defence corridor has been envisioned:



DEFENCE INDUSTRIAL CORRIDOR – UP Catchment Area



We can observe from fig. 1 that 6 major district has been selected for this Corridor who are being connected with Expressways and National Highways. These Expressways include Yamuna Expressway, Agra – Lucknow Expressway, Purvanchal Expressway, Bundelkhand Expressway, Gorakhpur Link Expressway and Ganga Expressway. It also connects to the Golden Quadrilateral linking Delhi-Kolkata with various Expressways. The following table 1 shows the connectivity of these districts with various crucial regions:

Table1- Source: <https://upeida.up.gov.in/article/en/up-defence-corridor>

Agra Node	<u>Aligarh Node</u>	<u>Jhansi Node</u>	<u>Lucknow/ Jalaun/ Unnao Node</u>	<u>Chitrakoot Node</u>	<u>Kanpur Node</u>
Air: Operational Airport at Agra.	Air: Operational Airport at Kanpur ~125 Kms.	Air: Operational Airport at Gwalior ~100 Kms.	Air: Operational Airport at Kanpur ~125 Kms.	Air: Operational Airport at Khajuraho ~200 Kms.	Air: Operational Airport at Kanpur ~125 Kms.
Rail: Connected directly to National Network, ~50 Kms from EDFC (Tundla).	Rail: Connected directly to National Network, ~50 Kms from EDFC (Bhaupur).	Rail: Connected directly to National Network, ~250 Kms from EDFC (Prempur).	Rail: Connected directly to National Network, ~50 Kms from EDFC (Bhaupur).	Rail: Connected directly to National Network, ~180 Kms from EDFC (Prempur).	Rail: Connected directly to National Network, ~50 Kms from EDFC (Bhaupur).
Road: Connected via Prayagraj-Lucknow Expressway & National Highway.	Road: Connected via National Highway & Bundelkhand Expressway	Road: Connected via National Highway & ~50 Kms from Bundelkhand Expressway.	Road: Connected via National Highway & Bundelkhand Expressway.	Road: Connected via National Highway & Bundelkhand Expressway.	Road: Connected via National Highway & Bundelkhand Expressway.

- To identify the MOUs for investments in UP's DIC: - Govt. of India have signed several MOUs with different concerns who are ready to invest in this corridor:

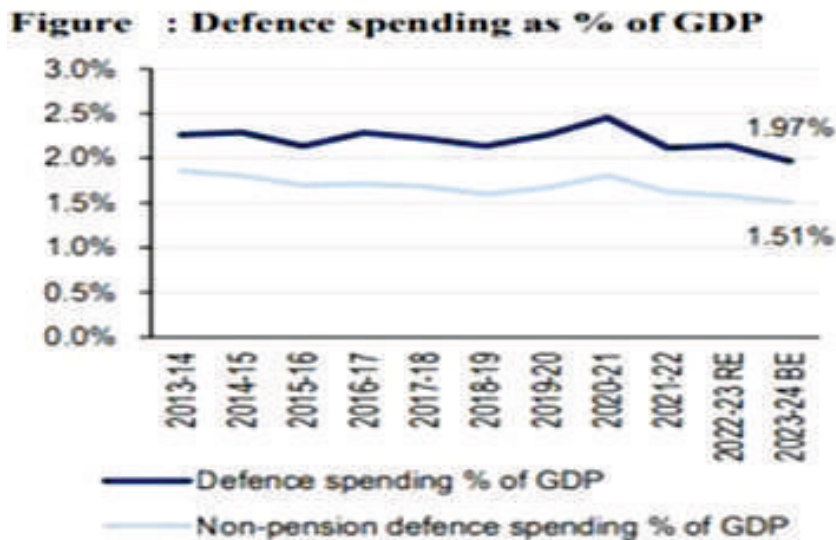
Table 2: Source: <https://upeida.up.gov.in/site/>

Name of the company	Product	Tentative Location
Titan Aviation & Aerospace India Ltd (TAAIL)	Maintenance, Repair & Overhaul(MRO), Simulators, Manufacturing of components & engine air frames	Jhansi 6000acres
Ancor Research Labs LLP	High precision comprehensive manufacturing testing complex for Defence & Aerospace Systems for example design and development of drones, swarms and AUVs, Electronic Warfare systems	Aligarh 25acres
Sri Hans Energy Systems(P)Ltd	Smart technology for securing of Weapons	Kanpur 5-10acre
Tata Technologies Ltd	Common Facility Center	Lucknow/Kanpur 15-20acre
Dimensions NXG Private Ltd	Smart Augmented Reality display connected to military helmet for tank navigation	Location not fixed
MSK Business Solutions India Pvt. Ltd	Joint venture with Russian OEMJSCK ret-Avionics, Radar	Agra/Greater Noida 5acres
P2 Logitech Pvt. Ltd	Joint venture with Russian OEMM/s AEC(Aero Equipment Corporation) avionics, radars, electronic warfare systems & communication equipment	Agra/Kanpur 5acres
Spice Jet Technic Private Ltd	Niche technology services in product, process and integration-MRO, Precision manufacturing, Advanced	NCR/Greater Noida 20

In addition, the Public Private cooperation (PPP) model might be an additional workable option for establishing a cooperation between the public and private sectors. PPP has been widely imitated in both the civil and defence sectors due to its widespread success on a global scale. In order to see true growth in the aerospace and defence industries, the tendency of having a contract in place between public and private organisations to use the resources needs to be encouraged (Panneerselvam, P., 2016).

- **To find out the total spending on Defence in relation to GDP:**

Although India is still one of the top spending countries for its military, the Ministry's percentage of total central government spending has been progressively declining over time. Defence expenditures made up 17.8% of all central governments' spending in 2016–17, but according to budget projections for 2023–24, they will drop to 13.2%. While central government spending is projected to grow at an annual rate of 11% between 2013–14 and 2023–24. In order to ensure that the armed forces are adequately prepared, the Standing Committee on Defence (2018) suggested that the Ministry of Defence be given a fixed budget of roughly 3% of GDP. India has regularly spent less on defence over the past ten years than is advised. It is anticipated that the Ministry will receive slightly less than 2% of GDP in 2023–2024. It is shown in following:



Note: BE is budget estimate and RE is revised estimate
 Sources: Union Budget Documents (various years); MoSPI; PRS.

- To know the trends of Export and Import of Defence Equipments in India and its current position globally:

Import Trends:

Despite an 11% reduction in arms acquisitions between 2013–17 and 2018–22, India remains the world's top importer of military equipment, according to a research report in 2023 by the Stockholm International Peace Research Institute (SIPRI). The research is being presented at a time when India has stepped up its attempts to become self-sufficient in the defence manufacturing industry. Around Rs 1 lakh cr. was allocated for domestic purchases in the defence budget this year in comparison to Rs 84,598 cr., Rs 70,221 cr., and Rs 51,000 cr. in the three years before. As per the report, in the past five years India imported the biggest percentage of ammunition which comprises 11% of global percentage followed by Saudi Arabia (9.6%), Qatar (6.4%), Australia (4.7%), and China (4.6%). It is presented in the following Fig. 4:

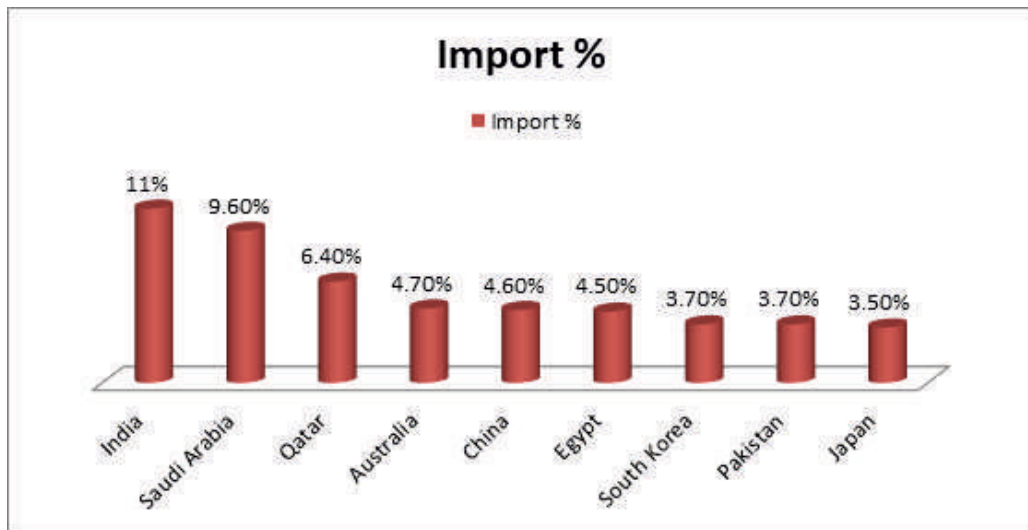


Fig.4: Sources: data taken from SIPRI

Although the import percentage of our country was biggest in world but there is a reduction of 21% in between 2012-16 and 2017-21 in the imports of arms, still we are the largest importers. The decline in India's imports was a result of a laborious procurement procedure and initiatives to replace imported goods with domestic ones which is a positive sign for our Defence industry.

Exports Trends:

According to recent SIPRI data, the US exported 40% of all military goods globally during the past five years, followed by Russia (16%), France (11%), China (5.2%), and Germany (4.2%). From 2013–17 and 2018–22, American exports of armaments increased 14%, while Russian exports dropped 31%. Russia's exports to India declined by 37%. As per statement given on DEFEXPO 2022 by India's Defence Minister, "India, which used to be considered the biggest importer, is today in queue among the top 25 countries exporting defence products."

In November 2009, India and Vietnam signed a Memorandum of Understanding (MoU) on defence cooperation, making Vietnam one of India's top strategic priorities. Even while the MoU's specifics have been kept a closely guarded secret, several strategic experts claim that it contains a significant naval component. In actuality, India's "Look East" strategy in the region predates the defence collaboration with Vietnam (Jha, P. K., 2011). Currently more than 42 countries are importing defence equipments from us and the exports have reached to Rs. 8000 cr. in the first half of 2022-23. These countries are Myanmar, Sri Lanka, Maldives, Mauritius, Nepal, France, Sri Lanka, Egypt, Israel, Bhutan, UAE, Saudi Arabia, Ethiopia, Philippines, Poland, Spain and Chile. These equipments includes BrahMos missiles, Pinaka rocket launcher, Advanced light helicopter, High-speed guard boats, Weapons locating radars, etc. The following fig.5 shows the trend of defence exports in past five years:



Fig.5: Source: <https://ddpdashboard.gov.in>

It can be inferred from fig. 5 that exports of defence equipments has been rising and it is at 13,500 cr. in 2022-23. India’s target is to achieve Rs. 35000 cr. export till FY2025. The recent Rs 2,800 cr. agreement with the Philippines to export BrahMos supersonic cruise missiles gave India's export of defence platforms a significant boost, further sparked interest among other ASEAN nations, including Indonesia and Vietnam. The BrahMos missile, developed and produced by BrahMos Aerospace, a joint venture between the DRDO of India and Mashinostroyeniya of Russia, is seen as a game-changer in terms of defence capacity. The Sukhoi Su-30MKI fighter jet and the BrahMos missile together. In addition to the BrahMos missile, Saudi Arabia and the United Arab Emirates have shown a strong interest in India's Akash air defence systems. The Department of Defence Production issued a coffee table book that lists 84 nations that accept India weapons like advanced light helicopters, offshore patrol vessels, coastal surveillance systems, launchers, and electronic systems. This approach shows that target for FY 2025 can be achieved easily.

Conclusion:

India accounted for 11% of the worldwide market share for major armaments between 2017 and 21 and is one of the top importers in the world. India's imports have dropped from US\$ 19,432 million to US\$ 15,356 million during the previous five years, but the government is

working to cut back on these purchases and encourage the export of goods created in India. In order to increase local manufacturing

capacity and promote the use of modern technologies, the government has initiated a number of initiatives and reforms in the field of defence. The Uttar Pradesh Defence Industrial Corridor (UP DIC) is an ambitious initiative that aims to lessen India's aerospace and defence industry's reliance on imports. In addition to this the role of finance from FDI is also important in these corridors. These corridors require huge investments and it can be achieved through FDI. The prior policies have the restriction of 26 & 49 percent which doesn't have any significant impact. So there was a need of 100% FDI. Increase in percentage of FDI up to 100% has facilitated new original equipment manufacturers (OEMs) to enter directly in our domestic defence markets without collaborating with domestic companies.

Suggestion:

1. Defense modernization and capability development must be increased.
2. Defence spending in support of long-term investments and R&D should be increased.
3. Presence of strategic planning for the military's future requirements.
4. Delays in production and supplies of defence equipment should be avoided.
5. Balanced and fragmented decision-making.
6. Organization of more programs like defexpo to spread awareness for this corridor.
7. Acquisition of land should be done more quickly.
8. More linkage between SMEs and the private defence industries.
9. Ensure Public-Private partnerships.

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