



# Defence mobility

**Opportunities for the  
Indian automotive sector**



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# List of abbreviations

Sr. No.	Abbreviation	Expansion
1.	APC	Armoured personnel carrier
2.	ASEAN	Association of Southeast Asian Nations
3.	DPM	Defence Procurement Manual
4.	DPP	Defence Procurement Procedure
5.	DPSU	Defence Public Sector Unit
6.	FAT	Field artillery tractor
7.	HMV	High mobility vehicle
8.	ICV	Infantry carrier vehicle
9.	IDDM	Indigenously Designed, Developed and Manufactured
10.	LAMEA	Latin America, Middle East and Africa
11.	LHD	Left-hand-drive
12.	LoC	Line of credit
13.	MBRL	Multi barrel rocket-launcher
14.	MoU	Memorandum of understanding
15.	MPV	Mine protected vehicle
16.	MRO	Maintenance, repair and overhaul
17.	MSME	Micro small and medium enterprise
18.	OEM	Original equipment manufacturer
19.	OFB	Ordnance Factory Board
20.	RFI	Request for information
21.	RFP	Request for proposal
22.	SAARC	South Asian Association for Regional Cooperation
23.	SAGAR	Security and Growth for All in the Region
24.	TLD	Tracked light dozer
25.	TPCR	Technology Perspective and Capability Roadmap



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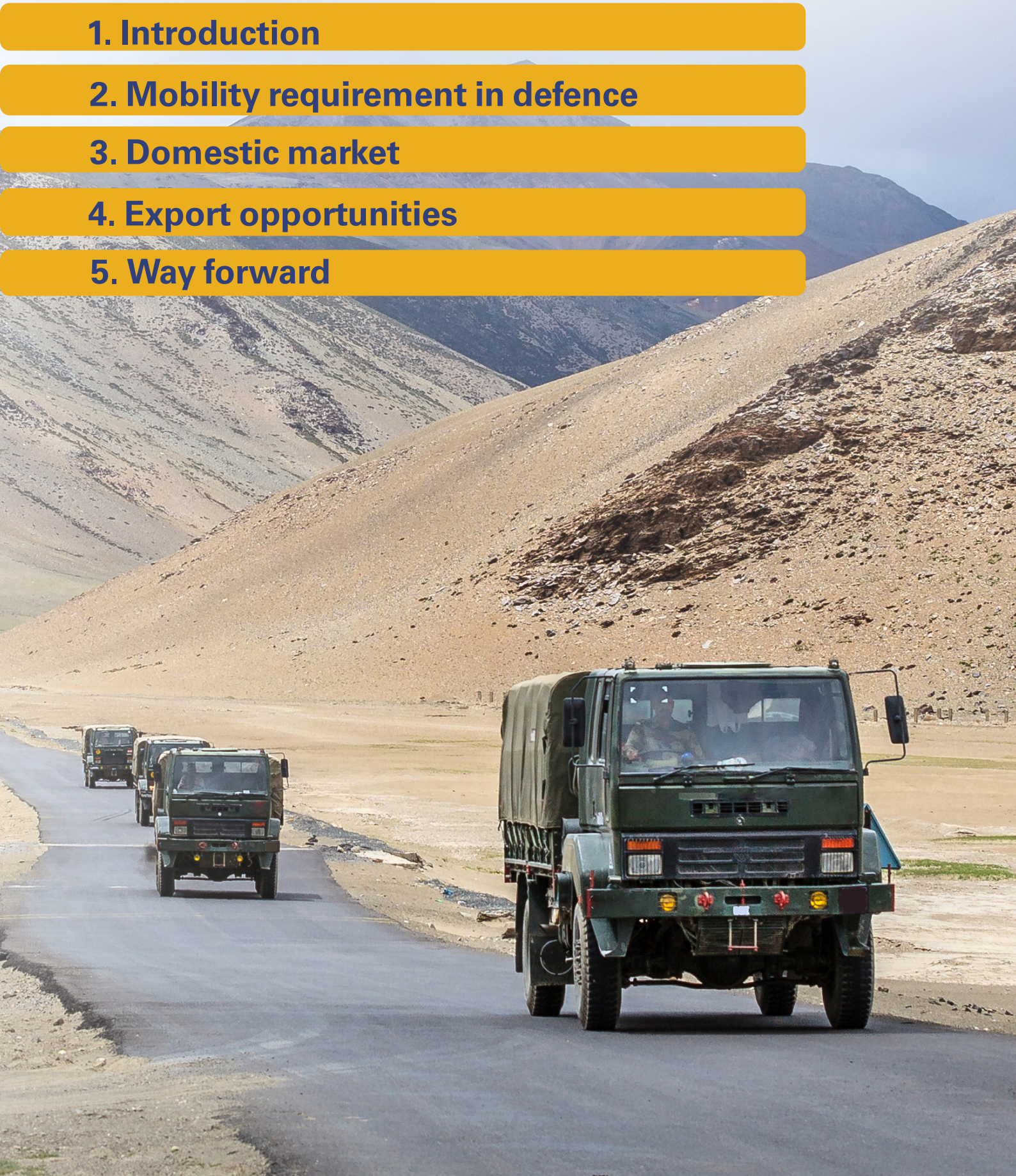
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# 1. Introduction

The Indian automotive sector is going through turbulent times with a persistent decline in demand for most of the previous financial year. Any hope of recovery in the current financial year has been impacted due to the ongoing COVID-19 pandemic and the resulting economic downturn. This has had a significant impact on the cash inflow of OEMs and component suppliers, putting their entire business sustainability at risk. Due to this unprecedented crisis, the situation calls for exploring revenue diversification opportunities in adjacent sectors.

This point of view aims to present the opportunities for automotive OEMs and component manufacturers in the defence sector, specifically in the mobility requirements of the Indian armed forces. It looks at the current fleet of mobility vehicles with the armed forces, analyses future requirements and opportunities in both new purchases and aftermarket components and spares. The document also looks at avenues available for manufacturers to participate in the domestic procurement, which is mostly done through a competitive tendering process as well as exploring potential export markets available to them.

The Indian automotive industry has made a mark globally and is now being recognised for its capability, quality and efficiency. This document aims to introduce the defence mobility landscape and provide a glimpse into the opportunities available that can be exploited to attain additional revenue streams with existing manufacturing capabilities/competencies.



## 2. Mobility requirement in defence

The armed forces have always required high mobility vehicles for logistical and transportation needs for different terrains and theatres such as counter-insurgency, border protection and personnel carriers. This chapter further explores this requirement of the armed forces in India.

### 2.1 Mobility vehicles

The current operational set of such platforms includes APCs, ICVs and, MPVs. These mobility platforms are widely used by the army across different units and operations. With plans to modernize the army, these components need to be routinely updated with better technology and mobility to make them combat-ready while also fulfil the logistical requirement for the newly acquired platforms.

Some of the major vehicle types used by the army and those that are planned to be inducted in its fleet for its mobility requirements are as follows.

Vehicle Type	Description /Usage
<b>High Mobility Vehicles (HMT) 10x10, 12x12</b>	Used for carrying and transporting heavy loads such as the Multi-Barrel Rocket Launcher (MBRL)
<b>High Mobility Vehicles (HMT) 4x4, 6x6, 8x8</b>	High mobility multi-axle trucks used as load carriers, troop carriers and tippers basis specific requirements
<b>Field Artillery Tractor (FAT) 6x6</b>	Multi-axle, multi-role trucks used for towing artillery guns, gun crews and ammunition
<b>Medium Bullet Proof Vehicle (MBPV) 4x4</b>	Used for easy manoeuvrability, operability and maintainability
<b>Heavy duty Trucks 4x4, 6x6</b>	Used for high mobility, off-road tactical capabilities and protection as a troop carrier
<b>Auxiliary Power Vehicles</b>	Used as an alternate source of power for the fire control system of the tank and ancillaries
<b>Mine Protected Vehicle</b>	Used in counter insurgency and handling terrorist operations
<b>General Purpose Vehicle 4x4</b>	Hard/soft top off-road vehicle used for transporting troops. Also used as an ambulance vehicle and for carrying payloads

Source : KPMG in India research





## 2.2 Specialised vehicles

In addition to the mobility of personnel and equipment, a significant portion of the Indian armed forces vehicle fleet constitutes specialised vehicles. These vehicles assist in daily functioning and are used for peripheral and support services such as the recovery of damaged equipment from the battlefield, medical services and supply of essentials such as food, water and fuel.

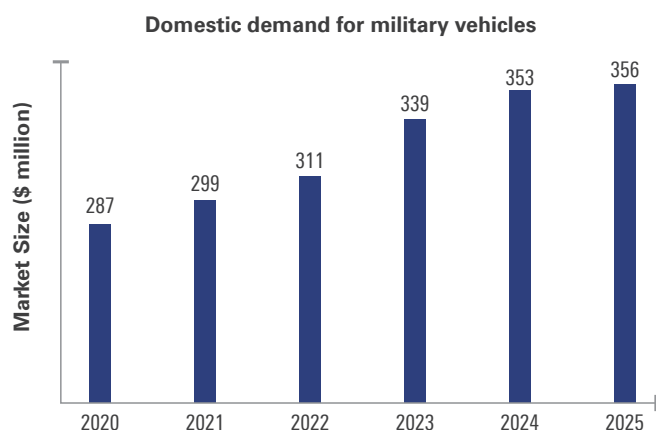
Vehicle Type	Description
<b>Armoured Recovery Vehicles</b>	To recover damaged Main Battle Tanks (MBTs), tracked armoured vehicles and heavy vehicles from the battlefield. Also used to carry out repairs
<b>Fuel Tanker 2KL/5KL</b>	For fuel loading facilities to the army stations with specific quality requirements
<b>Refrigerated Vehicles</b>	For providing milk and dairy supplies to the army at various locations
<b>Water Bowser 2KL/5KL</b>	For transporting fresh water to emergency situations, high altitudes or battlefield
<b>Ambulances 4x4</b>	For providing first aid and life-saving facilities to the casualties
<b>Ambulance Armoured Tracked Vehicles</b>	For providing life-saving facilities in the battlefield
<b>Fire vehicles</b>	To handle firefighting operations
<b>Armoured Amphibious</b>	For earth-moving capabilities across land and water obstacles
<b>Explosive Van</b>	To be used for carrying explosive content at high altitudes
<b>Tracked Light Dozer (TLD)</b>	To be employed in high-altitude regions for earth-moving tasks. Should be capable of rapid assembly / disassembly on field
<b>Tractor General Purpose</b>	To be used at high-altitudes for pulling capabilities
<b>Crane 5/10 Tonne</b>	To be used for lifting and construction activities at high terrains

Source : KPMG in India research



### 3. Domestic market

The Indian army is currently dependent on imported equipment and components from foreign manufacturers. Apart from the security implications, importing platforms poses challenges in terms of obsolescence management and operational readiness. As a result, there is a significant push for induction of Indigenously Designed, Developed and Manufactured (IDDM) platforms under the aegis of the 'Make in India' initiative. Under the Defence Procurement Procedure (DPP), impetus has been given to indigenously design and manufacture the equipment required for the modernization of the army. The Buy (Indian-IDDM) category in DPP 2016<sup>1</sup> and the proposed Buy (Global-Manufacture in India) category in the draft DPP 2020<sup>2</sup> have been accorded higher priorities to ensure the participation of Indian manufacturers in modernizing obsolete defence equipment.



Source: KPMG in India analysis

The domestic market for mobility requirements for defence forces is primarily driven by the replacement of obsolete platforms in the existing fleet of Indian armed forces vehicles and induction of new platforms in the fleet. Apart from these, there are significant opportunities to be explored in aftermarket spares and indigenization opportunities.



1. Defence Procurement Procedure 2016, Ministry of Defence, July 2016  
 2. Draft DPP 2020, Ministry of Defence, March 2020

### 3.1 Capital procurement

Some of the key platforms that are planned to be inducted in the next 10 years as per the Technology Perspective and Capability Roadmap (TPCR)<sup>3</sup> 2018 are as follows.

Vehicle Type	Quantity	Service Life
Explosive Van	350	10 years
Armoured Amphibious Dozer	100	20 years
Helicopterable Module Dozer	150	20 years
Light Bullet Proof Vehicles	300+	15 years
General Purpose Tractor	2000	10 years
Cranes	200	15 years
Vehicle-Based Mine Scattering Systems	150	15 years

Apart from the direct capital procurement of mobility platforms and specialised vehicles, HMVs, LMVs and recovery vehicles form an integral part of capital purchases of other platforms such as missiles, mounted guns, artillery and tanks. Interestingly, although core platforms are bought from foreign vendors, the mobility platform used for transportation of these weapons is mandated to be bought from Indian vendors.

### 3.2 Revenue procurement

Apart from the procurements under the capital budget of the Ministry of Defence, a significant amount of procurement happens under the revenue budget. The procurement under the revenue budget is governed by the Defence Procurement Manual (DPM)<sup>4</sup> and is related to replacement of vehicles that are declared unfit for use, procurement of spares, service contracts for maintenance, etc. This avenue has significant opportunity for Indian automotive manufacturers, especially Tier I and II suppliers.

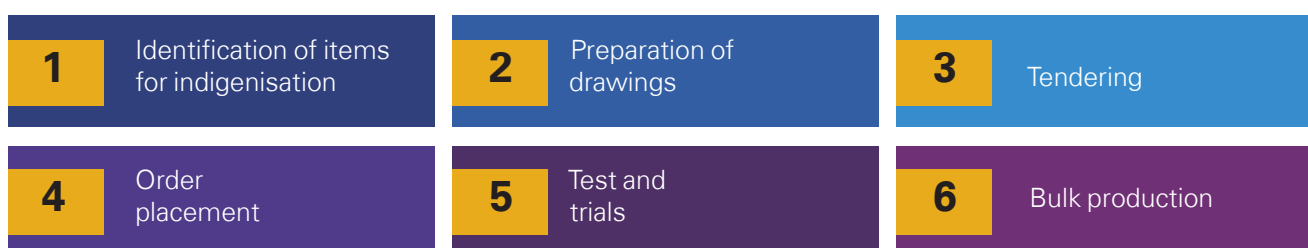
Most vehicles in the fleet of the armed forces have a service life ranging from 10 to 35 years. This implies that every year many vehicles are declared unfit for use and procurement of new vehicles happens through an annual competitive tendering process.

Moreover, as per KPMG in India's analysis, the market size for aftermarket components and spares is estimated to be eight to 10 times the market size for new purchases, making it an excellent opportunity for MSMEs in the sector. However, companies should regularly scout for RFIs/RFPs for these spares as well as leverage the Government e-Marketplace (GeM) platform.

### 3.3 Indigenization

All the armed forces as well as Defence Public Sector Units (DPSUs) and Ordinance Factory Boards (OFBs) have been mandated to reduce import dependencies and identify products and components that can be indigenously developed as well as mass produced.

In light of this, the Army, Navy and Airforce have each established a Directorate for Indigenization and the DPSUs and OFBs have published the list of spares that are eligible for indigenous manufacturing. The typical process followed for these programmes is as follows.



3. Technology Perspective And Capability Roadmap (TPCR) – 2018, Ministry of Defence, Feb 2018

4. Defence Procurement Manual 2009, Ministry of Defence, Nov 2015

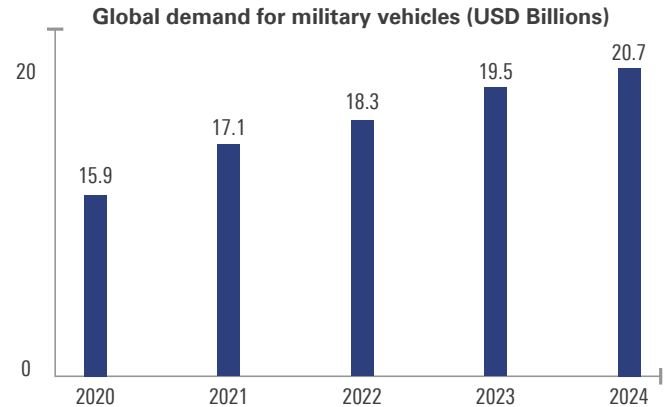


# 4. Export Opportunities

India is steadily moving up the value chain of defence exports and is likely to grow in the forthcoming years as it seeks new markets for its defence production.

## 4.1 Global demand

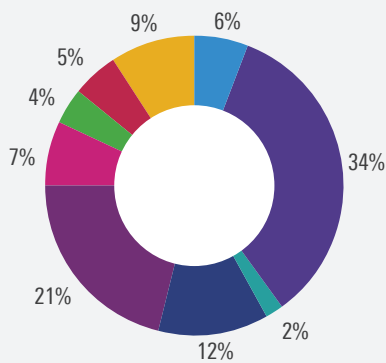
Globally, the demand for ground defence systems are primarily driven by an ageing fleet of ground vehicles and increase in peace-keeping requirements worldwide, ultimately leading to modernization programs. The global demand for ground defence vehicles, excluding combat vehicles, is projected to increase from USD 14.7 billion in 2019 to USD 20.7 billion by 2024 at a CAGR of 7 per cent<sup>1</sup>.



Source : KPMG in India research

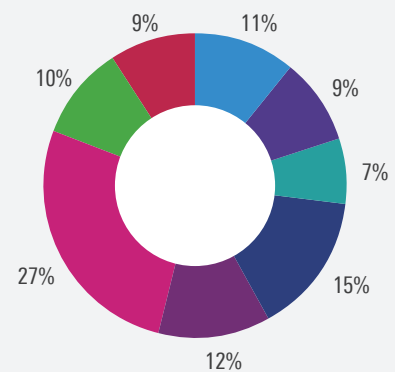
The typical break-up of the global market by vehicle type is given as follows

**Division of market by vehicle type**



■ Others ■ Armoured Personnel Carrier ■ Mine Resistant Vehicles  
■ Armoured Multi-Purpose Vehicle ■ Light Utility Vehicle ■ Trucks  
■ Military Engineering Vehicles ■ Amphibious Vehicle  
■ Unmanned Ground Vehicle

**Global Market break-up for subcomponents (2022)**



■ Others ■ Engine ■ Drive Systems ■ Navigation Systems  
■ Communication Systems ■ Fire Control Systems  
■ Observation and Display Systems ■ Command and Control Systems

The above figure also describes the market for subsystems/components that form a part of the MRO activities for defence vehicles and the component aftermarket opportunities for Tier I, II and III manufacturers.





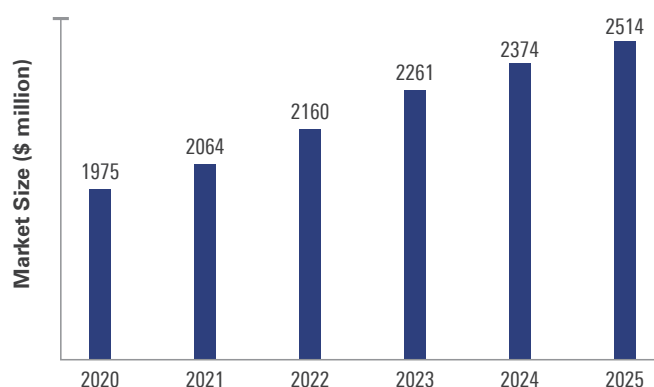
## 4.2 Target regions for exports

India has signed MoUs<sup>5</sup> with Bangladesh, Zimbabwe, Kenya among others to provide them with defence exports like mobility vehicles and armoured personnel carriers. Recently, India supplied ambulances to Kenya<sup>6</sup>, high-powered trucks to the Thai<sup>6</sup> army and armoured vehicles to the Guyana police force<sup>7</sup>.

These developments have also come along with the creation of the defence Line of Credit (LoC) by the GoI for certain countries to improve strategic relationships and ease defence exports. India, in the recent past, has given such lines of credit to Vietnam, Bangladesh and Kyrgyzstan, to name a few.

India's vision of SAGAR and contribution to UN peacekeeping missions have led to a creation of bilateral partnerships for defence exports, especially amongst the members of the African Union. Growth of Indian diplomacy, combined with an unambiguous policy for defence exports, has created a significant market for Indian manufacturers in areas of operation in peacekeeping theatres such as that of LAMEA. The expected market size for armoured mobility vehicles in these regions is projected to grow at a CAGR of 4.9 per cent. However, left-hand-drive (LHD) compliance is necessary to explore these markets and, hence, the necessary customization in the manufacturing process should be made by manufacturers.

**Growth of Armoured Mobility Vehicles (LAMEA)**



Furthermore, few auto OEMs have been successful in supplying specialist vehicles and light armoured multi-role vehicles for the UN Peacekeeping Mission in Mali and a range of specialised defence vehicles to SAARC, ASEAN and African regions<sup>8</sup>.



5. Multilateral Documents, Ministry of External Affairs, May 2020

6. Private sector drives Indian defence exports, Economic Times, Mar 2016

7. Indian arms sales to Latin America, IDSA, July 2016

8. Made-in-India vehicles for U.N. mission in Mali, The Hindu, March 2016



# 5. Way Forward

## Five-point approach for the auto industry

Understanding the underlying opportunities for automobile companies in the defence sector leads to a more vital question regarding a market-entry approach for those companies looking to diversify and foray into this growing market. This section provides a broad framework and suggestions that organisations can use to cement their position in the defence mobility domain.

### 1

#### Identification of platforms

OEMs should identify products/ platforms to target those that are closely linked to their existing capabilities and infrastructure.

Similarly, the TIER I, II and III suppliers should look for components/subcomponents used by OEMs and the requirements of the armed forces.

### 2

#### Identification of capability gaps

Based on the targeted platforms and the customised requirements of the forces, the technical capability gap and certification requirements need to be identified for OEMs and TIER I, II and III manufacturers alike.

### 3

#### Developing capabilities and appropriate certification

To fulfil defence requirements and extend design capabilities, the OEMs should identify ways to bridge the identified gaps. The following suggestions could be explored.

- Retrain the existing workforce to develop design capabilities in-house
- Hiring specialists to outsource specific capabilities to meet the requirements
- Entering into a partnership agreement with another manufacturer
- Creating into a joint venture (JV) company with a global OEM.

Manufacturers of armoured and blast-resistant vehicles and components must conform to internationally accepted ballistic and blast standards such as STANAG 4569 NATO standard, EN 1522/EN 1063 European standard, etc.

### 4

#### Winning orders

Most of the procurement happens through competitive bidding and, hence, constant tracking of domestic and international RFIs is necessary. The entire process requires robust bid process management to develop winning proposals and collaterals. Some vehicles might require field trials during the procurement process.

### 5

#### Moving up the value chain

Manufacturers should explore avenues to vertically integrate and capture more value for their products. This would enable OEMs to expand their product portfolio, Tier-I players to grow into OEMs and Tier II and III manufacturers to become system integrators.

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