

## Uttar Pradesh: A Comprehensive Overview of India's Defence Production Hub

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### Abstract

India's persistent reliance on defence imports has historically created strategic, economic, and technological vulnerabilities for its national security framework. To address these concerns, the Government of India has undertaken comprehensive reforms to promote indigenous defence manufacturing, aligned with the broader vision of *Atmanirbhar Bharat*. In this transforming defence industrial ecosystem, Uttar Pradesh has emerged as a significant centre and is increasingly being acknowledged as a major defence manufacturing hub in the country. The development of the Uttar Pradesh Defence Industrial Corridor (UPDIC), along with supportive state policies, improved infrastructure, and growing participation from the private sector, has played a crucial role in reshaping the state's industrial landscape. This paper explores the rise of Uttar Pradesh as a defence manufacturing hub by examining its institutional structure, industrial base, involvement of public and private stakeholders, and its broader economic and strategic importance. Adopting a qualitative and descriptive research methodology, the study outlines major accomplishments, identifies existing challenges, and evaluates future opportunities. It contends that the expanding role of Uttar Pradesh in defence production is vital not only for strengthening India's national security but also for fostering industrial development and enhancing its position in the global defence market. Furthermore, the paper assesses future trajectories and provides policy recommendations to reinforce Uttar Pradesh's role within India's defence industrial framework.

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### **Introduction**

Defence manufacturing constitutes a critical pillar of national power, encompassing not only military preparedness but also technological advancement, industrial capacity and strategic autonomy. For decades, India remained heavily reliant on imports to meet its defence requirements, making it one of the world's largest arms importers. Such dependence exposed the country to vulnerabilities related to supply disruptions, geopolitical pressures and high procurement costs. In response to these challenges, India has pursued a strategic shift toward indigenous defence production. Initiatives such as *Make in India*, reforms in defence procurement procedures and the *Atmanirbhar Bharat* mission have sought to create a robust domestic defence industrial base. State governments have been encouraged to play a proactive role in this transformation by developing industrial ecosystems, attracting private investment and facilitating infrastructure development. India has traditionally been one of the world's largest importers of defence equipment, a dependency that has raised concerns regarding strategic autonomy, foreign exchange outflows and supply chain vulnerabilities. In response, the Government of India has prioritised indigenous defence production through initiatives such as *Make in India* and *Atmanirbhar Bharat*. Within this framework, states have been encouraged to develop region-specific defence manufacturing ecosystems. Uttar Pradesh, India's most populous state, has rapidly emerged as a key player in this transformation. With the establishment of the Uttar Pradesh Defence Industrial Corridor in 2018, the state has positioned itself as a focal point for defence and aerospace manufacturing.

Within this national framework, Uttar Pradesh has emerged as a leading state in defence manufacturing. Traditionally known for agriculture and labour intensive industries, the state has repositioned itself as a major hub for high-technology defence production.

### **Historical Evolution of Defence Manufacturing in Uttar Pradesh**

Defence manufacturing is a fundamental component of national strength, contributing not only to military readiness but also to technological progress, industrial development, and strategic independence. For many years, India depended heavily on imports to fulfil its defence needs, ranking among the largest arms importers globally. This reliance created multiple challenges, including risks of supply disruptions, exposure to geopolitical pressures, and significant financial burdens due to high procurement costs. To overcome these constraints, India has undertaken a strategic transition toward self-reliant defence production. Initiatives such as *Make in India*, reforms in defence

procurement policies, and the *Atmanirbhar Bharat* mission have been introduced to build a strong domestic defence industrial base. In this process, state governments have been encouraged to take an active role by fostering industrial ecosystems, attracting private investment, and strengthening infrastructure. Historically, India's dependence on imported defence equipment also raised concerns related to strategic autonomy, foreign exchange expenditure, and supply chain vulnerabilities. Addressing these issues, the Government of India has increasingly prioritised indigenous manufacturing, promoting region-specific defence ecosystems across different states. Within this broader national strategy, Uttar Pradesh—India's most populous state has rapidly emerged as a significant contributor. The establishment of the Uttar Pradesh Defence Industrial Corridor in 2018 has positioned the state as a major centre for defence and aerospace production. Once primarily associated with agriculture and labour-intensive sectors, Uttar Pradesh has successfully reoriented its industrial identity toward becoming a hub for advanced, high-technology defence manufacturing.

### **Strategic Importance of Uttar Pradesh**

Uttar Pradesh's rise as a defence manufacturing hub is underpinned by several strategic advantages. Geographically, the state occupies a central position in northern India, offering excellent connectivity through highways, rail networks and air transport. Its proximity to the National Capital Region (NCR) facilitates coordination with defence headquarters, research institutions and policy-making bodies. The state also hosts several military establishments, training centres and logistics bases, which create demand for defence equipment and maintenance services. Additionally, Uttar Pradesh's large workforce provides a steady supply of skilled and semi-skilled labour, an essential requirement for large scale manufacturing. From a strategic perspective, dispersing defence manufacturing across multiple regions enhances supply chain resilience and reduces vulnerability to regional disruptions. Uttar Pradesh's inclusion in India's defence-industrial map contributes to this objective by complementing existing hubs in southern and western India.

### **Uttar Pradesh Defence Industrial Corridor (UPDIC)**

#### **The key objectives of UPDIC include:**

The Uttar Pradesh Defence Industrial Corridor was announced in 2018 as part of a national strategy to promote indigenous defence manufacturing. The corridor aims to create an integrated ecosystem that supports design, development, production, testing, and maintenance of defence equipment.

- Attracting domestic and foreign investment in defence manufacturing
- Promoting indigenisation and technology transfer

- Generating employment and skill development
- Strengthening supply chains and ancillary industries
- Supporting exports of defence products

**The corridor comprises six strategically selected nodes:**

- **Lucknow:** Missile systems, avionics and advanced electronics
- **Kanpur:** Small arms, ammunition and traditional ordnance manufacturing
- **Agra:** Aerospace components and maintenance services
- **Aligarh:** Precision manufacturing and hardware components
- **Jhansi:** Armoured vehicles, engineering systems and heavy manufacturing
- **Chitrakoot:** Ancillary units and emerging defence technologies

Each node has been developed with a focus on specific defence manufacturing segments, enabling specialisation and economies of scale.

**Role of Public Sector, Private Sector Participation and MSME Ecosystem**

Public sector undertakings and research organisations continue to play a crucial role in Uttar Pradesh's defence manufacturing ecosystem. Ordnance factories and PSUs provide foundational capabilities, while DRDO supports research, development and testing activities. Collaboration between public institutions and private firms has emerged as a key feature of the new defence industrial model. Such partnerships facilitate technology transfer, reduce development timelines and enhance production efficiency. The entry of private companies marks a significant transformation in Uttar Pradesh's defence manufacturing landscape. Large defence firms, startups and MSMEs have invested in the corridor, contributing to innovation and competitiveness.

The establishment of the BrahMos missile manufacturing facility in Lucknow represents a landmark achievement, symbolising the state's capability to host high-end defence production. MSMEs play a critical role as suppliers of components, sub-systems, and services, strengthening the overall industrial ecosystem.

**Role in Strengthening National Security and Strategic Independence**

Uttar Pradesh's rise as a prominent defence manufacturing hub represents an important transformation in India's national security framework and its broader quest for strategic independence. The rapid expansion of the state's defence industrial ecosystem has strengthened indigenous production capabilities, reduced reliance on foreign suppliers, and improved operational readiness

and resilience of the Indian Armed Forces. In line with national initiatives such as *Make in India*, *Atmanirbhar Bharat*, and reforms under the Defence Acquisition Procedure (DAP), Uttar Pradesh plays a vital role in safeguarding India's long-term strategic and security interests. In addition to fulfilling domestic defence needs, Uttar Pradesh also supports India's goal of emerging as a global exporter of defence equipment. Manufacturing units within the state are increasingly engaged in producing export-oriented items such as ammunition, light weapons, aerospace components, and unmanned systems. These exports enhance India's strategic outreach by strengthening defence partnerships with friendly countries and establishing the credibility of Indian defence technologies in the global market. Moreover, export growth indirectly contributes to national security by achieving economies of scale, lowering costs for the armed forces, and enabling reinvestment of revenues into research and development.

**Strategic Autonomy:** understood as a nation's capacity to make independent decisions in defence and foreign policy, is closely linked to self-reliance in defence production. By promoting domestic innovation, manufacturing, and technological advancement, Uttar Pradesh enhances India's ability to act independently in both regional and global security matters. Overall, the state's defence manufacturing ecosystem contributes not only to immediate military strength but also to India's long-term security strategy. The development of a strong domestic industrial base ensures a sustainable defence framework that supports continuous modernization, indigenisation, and innovation. In this way, it aligns national security objectives with economic growth, providing a solid industrial foundation for India's future defence preparedness.

### **Future Prospects and Policy Recommendations**

Future growth will depend on strengthening R&D, promoting advanced technologies such as AI and drones, enhancing skill development and fostering international collaboration. Establishing innovation hubs and testing facilities will be critical to sustaining competitiveness.

### **Enhance Research & Development (R&D) Incentives**

- Boost fiscal incentives (tax credits/grants) for defence R&D to nurture innovation.
- Strengthen collaborations between industry, academia and defence research bodies (ex-DRDO).

### **Advanced Skill Development Initiatives**

- Scale up specialised training centres for advanced manufacturing technologies.

- Partner with international experts for curriculum development and certification frameworks.

#### **Improved Ease-of-Doing-Business Framework**

- Streamline land-acquisition, environmental clearances and procurement approvals through enhanced single-window mechanisms.
- Offer additional time-bound incentives for early operationalisation by manufacturers.

#### **Supply Chain & MSME Support**

- Establish dedicated supplier parks and logistics support hubs to integrate MSMEs into defence OEM ecosystems.
- Provide financial support for certification and quality compliance to help smaller firms meet global standards.

#### **Promote Exports and International Collaboration**

- Facilitate participation in global defence trade events and export financing mechanisms.
- Negotiate export-friendly agreements with partner countries to open new markets for UP-manufactured defence products.

#### **Sustainable and Resilient Manufacturing**

- Align defence manufacturing corridors with green and sustainable industrial practices as part of a broader state industrial strategy.

Uttar Pradesh's transformation into a **defence manufacturing hub** is not just about strategic infrastructure; it reflects a policy ecosystem designed for self-reliance, MSME empowerment, employment generation and global competitiveness. With continued focus on R&D, talent cultivation, supply chain depth and export promotion, UP is poised to be a major contributor to India's defence manufacturing ambitions in the decades ahead.

#### **Conclusion**

Uttar Pradesh's rise as a defence manufacturing hub marks a significant transformation in India's defence-industrial strategy. Supported by favourable policies, expanding infrastructure, and increasing private sector involvement, the state has established itself as a crucial contributor to India's pursuit of self-reliance in defence production. Continued policy focus and strategic investments are likely to further strengthen its role in enhancing both national security and economic development. The state has become a central pillar in India's evolving defence manufacturing ecosystem, reflecting the broader vision of strategic autonomy under the *Atmanirbhar Bharat* initiative. The creation of the Uttar Pradesh Defence Industrial Corridor has enabled the state

to capitalise on its strategic location, strong infrastructure base, and proactive governance, thereby attracting substantial investments from both public and private sectors. The growing presence of defence public sector undertakings, global original equipment manufacturers, and domestic micro, small, and medium enterprises has transformed Uttar Pradesh into a vibrant and integrated hub for defence production.

Emphasising indigenisation, innovation, and skill development, the state has strengthened supply chains and enhanced technological capabilities across land, air, and naval defence sectors. Furthermore, the alignment of state-level incentives with national procurement and offset policies has created a supportive environment for sustained industrial growth and increased export potential. These developments not only improve India's defence readiness but also contribute to regional economic progress through job creation, infrastructure development, and technological diffusion.

However, maintaining this growth trajectory will require consistent policy support, timely project implementation, greater investment in advanced research and development, and stronger collaboration among industry, academia, and the armed forces. Key challenges such as land acquisition, availability of skilled labour, and effective technology absorption must be addressed to ensure global competitiveness. In conclusion, Uttar Pradesh's transformation into a defence manufacturing hub represents a major milestone in India's defence industrial development. With continued commitment and strategic planning, the state is well placed to play a decisive role in strengthening national security, expanding defence exports, and establishing India as a credible force in the global defence manufacturing landscape.

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