# Indian Economy · GS - III

**Dependence on imported critical machinery can create vulnerabilities in India's infrastructure development. Discuss the challenges and suggest measures to strengthen domestic manufacturing and supply-chain resilience.**

| EXAM YEAR | PAPER | SUBJECT |
|---|---|---|
| DAILY PRACTICE 20/10/2026 | GS - III | Indian Economy |

| MARKS | WORD LIMIT |
|---|---|
| 10 | ~150 words |

## Answer Hint

**Import dependence, Tunnel Boring Machines, infrastructure delays, geopolitical tensions, supply-chain resilience, Make in India, Atmanirbhar Bharat, research and development, technology transfer, public-private partnerships, skilled workforce, strategic diversification.**

## Model Answer

### Introduction

Critical machinery such as Tunnel Boring Machines (TBMs) is essential for India's metro, railway, highway and water infrastructure projects. Excessive dependence on imported equipment can expose these projects to external supply disruptions and geopolitical risks.

### Main Body

**Major challenges**

1. Project delays: Export restrictions and delivery disruptions can delay infrastructure construction.
2. Cost escalation: Limited availability of machinery and imported components can increase project costs.
3. Technological dependence: Reliance on foreign suppliers may restrict domestic capabilities in manufacturing, maintenance and innovation.
4. Geopolitical risks: Trade tensions and export controls can threaten the continuity of critical infrastructure projects.

**Measures to strengthen resilience**

1. Promote domestic manufacturing: Encourage Indian firms to develop and manufacture TBMs and critical components.
2. Increase R&D investment: Strengthen collaboration among industry, IITs and research institutions.
3. Facilitate technology transfer: Promote joint ventures and partnerships with established international manufacturers.
4. Diversify imports: Develop multiple reliable suppliers to reduce dependence on a single country.
5. Build skilled manpower: Expand specialised training in precision engineering, robotics and tunnel construction.

## Conclusion

India should combine domestic technological development with diversified international partnerships. A competitive manufacturing ecosystem can reduce external vulnerabilities, improve infrastructure resilience and advance the objectives of Make in India and Atmanirbhar Bharat.