# Make in India, Make for the World

***This editorial is based on "Making in India for the world" which was published in The Hindu on 17/02/2025. The article highlights India's transformation from post-colonial scarcity to a global manufacturing hub, driven by policy reforms, a skilled workforce, and technological advancements.***

**For Prelims: Make in India, Production-Linked Incentive (PLI) scheme, India-UAE CEPA, Gati Shakti National Master Plan, PM MITRA Mega Textile Parks, Dedicated Freight Corridors, National Green Hydrogen Mission, Faster Adoption and Manufacturing of Electric Vehicles, China+1 strategy, Economic Survey 2022-23, Red Sea Crisis.**

**For Mains:** Key Factors Driving India as a Global Manufacturing Hub, Key Challenges Hindering India's Emergence as a Global Manufacturing Hub.

India's journey from post-colonial scarcity to a **global manufacturing hub** reflects its **economic resilience** **and policy-driven growth**. With a skilled workforce, technological advancements, and pro-business reforms, the country offers a thriving ecosystem for industries. Initiatives like the **National Manufacturing Mission** are boosting infrastructure, workforce development, and MSME growth. As India strengthens its manufacturing base, it is poised to **serve both domestic and global markets efficiently**-**Make in India, Make for the World!**

## What are the Key Factors Driving India as a Global Manufacturing Hub?

- **Policy Reforms and Ease of Doing Business:** The Indian government has introduced several policy reforms to enhance manufacturing competitiveness.
  - The **Production-Linked Incentive (PLI) scheme across 14 sectors**, reduction in **corporate tax rates (15% for new manufacturing units.),** and streamlined regulatory processes have created a business-friendly environment.
  - Additionally, India's proactive approach in trade agreements, such as **India-UAE CEPA and India-Australia ECTA,** has improved market access.
  - As a result India jumped to **63rd in Ease of Doing Business (World Bank's 2020 report).**
- **Infrastructure Development and Logistics Advancements:** India is aggressively upgrading its infrastructure to support industrial expansion and supply chain efficiency.
  - The **Gati Shakti National Master Plan** aims to integrate **road, rail, air, and port connectivity** to enhance logistics.
  - Initiatives like the **PM MITRA Mega Textile Parks** and the **Dedicated Freight Corridors (DFC)** are strengthening industrial clusters.
  - The **Budget 2025-26**, aligned with the **Viksit Bharat @ 2047 vision**, allocates **₹11.21 lakh crore to the infrastructure sector.**

- **Technological Adoption and Industry 4.0:** India is embracing automation, **AI, IoT, and robotics** to modernize manufacturing and improve global competitiveness.
    - The **National Quantum Mission** and investment in semiconductor fabrication (e.g., **semiconductor plant in Dholera)** signal a shift towards high-tech manufacturing.
    - The **PLI scheme for IT hardware and electronics** is also bolstering the electronics and semiconductor industry, attracting global players like Foxconn and Micron.
    - India is projected to become a **$300 billion electronics manufacturing hub by 2026** and the Semicon India Program has earmarked **₹76,000 crore ($9 billion)** to develop chip manufacturing.
- **Growth of Green and Sustainable Manufacturing:** With increasing global demand for sustainable production, India is positioning itself as a green manufacturing hub.
    - The **National Green Hydrogen Mission** and incentives for renewable energy industries are attracting investments.
    - Policies like **Faster Adoption and Manufacturing of Electric Vehicles (FAME II)** and the **solar PLI scheme** promote clean energy adoption in industries
        - India targets **50% of energy from non-fossil fuels by 2030** and aims to produce **5 MMT of green hydrogen annually by 2030,** making it an attractive exporter.
- **Geopolitical Realignment and China+1 Strategy: The global supply chain restructuring, driven by the U.S.-China tensions** and **Covid-19 disruptions**, has led to increased investments in India.
    - Companies are diversifying their manufacturing bases, and India is benefiting from the **China+1 strategy.**
        - Major firms like **Apple, Tesla, and Samsung** are expanding Indian production facilities to reduce dependence on China.
        - Apple's iPhone exports from India surged nearly four times on year to cross **$5 billion (more than Rs 40,000 crore) in FY23**
    - **India’s CEA V. Anantha Nageswaran** suggests that India can boost manufacturing by **strategically replacing certain imports with Chinese investments,** aligning with the **China Plus One strategy** to integrate into global **supply chains.**

## What are the Key Challenges Hindering India’s Emergence as a Global Manufacturing Hub?

- **High Logistics and Supply Chain Costs:** India’s logistics costs remain significantly higher than global benchmarks, **reducing export competitiveness.**
    - The **Economic Survey 2022-23** pointed out that logistics costs in India have been in the range of **14-18% of GDP** against the global benchmark of **8%**
    - Inefficiencies in **transport networks, port congestion, and last-mile connectivity** delays increase operational costs for manufacturers.
    - Without streamlined logistics**, India struggles to match China and Vietnam** in cost-effectiveness for large-scale manufacturing.
- **Rigid Labor Laws and Skill Gaps:** Despite **labor code reforms,** bureaucratic hurdles and compliance burdens persist, discouraging large-scale labor-intensive industries.
    - Additionally, **skill gaps in advanced manufacturing, AI-driven production, and semiconductor fabrication** limit India’s ability to compete in high-tech industries.
        - India will need **30 million digitally skilled professionals by 2026,** and **50% of the current workforce** will need to re-skill themselves
    - The shift from India’s predominantly unorganized workforce **(90%)** to a globally competitive labor pool remains slow.
- **Weak MSME Ecosystem and Credit Constraints:** **MSMEs**, which form the backbone of Indian manufacturing, face severe credit shortages and limited access to technology.
    - Delays in **availing loans, high-interest rates, and collateral requirements** restrict their growth potential.
    - According to **CRISIL estimates**, **only 20% of India's MSMEs have access to formal credit.**
        - While the increase in CGTMSE guarantees has provided some relief, **only 2.5 crore out of 6.3 crore MSMEs** have availed formal credit, underscoring a significant

gap.

- **Infrastructure Gaps and Power Reliability Issues:** Despite improvements, **inconsistent power supply, inadequate industrial land, and poor urban planning hinder manufacturing expansion.**
    - Frequent electricity disruptions in industrial zones increase production costs and deter foreign investors.
        - The overall impact on the GDP due to power shortage is expected to be a fall of about **1-1.9%.**
    - Additionally, **delays in land acquisition and complex regulatory approvals** slow down the setup of new manufacturing units, particularly in high-growth sectors like semiconductors and EVs.
        - The lack of a **plug-and-play industrial ecosystem** remains a critical bottleneck.
- **Dependence on China for Critical Components and Raw Materials:** Despite India's push for self-reliance, **its heavy dependence on China for raw materials, electronics, and critical inputs** weakens its supply chain resilience.
    - Key industries like **pharmaceuticals ( 70% of Active Pharmaceutical Indicators ), electronics, and renewable energy (semiconductor wafers)** rely on Chinese imports, making India vulnerable to geopolitical disruptions.
    - While initiatives like the PLI scheme aim to localize production, the transition to domestic sourcing remains slow and costly.
        - **India imports 70% of its API (Active Pharmaceutical Ingredients)** from China. After India removed curbs on using imported solar modules in 2023, imports of Chinese solar components rose **400% in less than a year.**
- **Slow Adoption of High-Tech Manufacturing and R&D Weakness:** India lags in **advanced manufacturing capabilities**, particularly in AI, robotics, and semiconductor fabrication.
    - While the **Semicon India Program** aims to establish chip manufacturing plants, execution delays and lack of a robust R&D ecosystem pose challenges.
    - India spends only **0.65% of GDP on R&D**, compared to **2.4% in China and 4.8% in South Korea**.
- **Global Trade Uncertainties and Geopolitical Risks:** India's trade competitiveness faces challenges due to **global economic uncertainties, protectionist policies, and geopolitical tensions**.
    - India is **yet to finalize crucial trade agreements with the EU, UK, and Canada,** which limits its export potential.
    - Additionally, the **US-China trade war** and disruptions in global supply chains (like the **Red Sea Crisis**) affect India's raw material sourcing and export markets.
    - Without stronger trade alliances, India risks missing opportunities in global value chains.
    - India's exports declined by 2.38% to $36.43 billion in January 2025 due to low demand while imports surged by 10.28% to $59.42 billion.

## What Measures can India Adopt to Advance Towards Make in India, Make for the World?

- **Enhancing Logistics and Supply Chain Efficiency:** India must lower logistics costs by fast-tracking the **Gati Shakti National Master Plan,** optimizing **multi-modal transport networks, and integrating Dedicated Freight Corridors (DFC)** with industrial clusters.
    - Strengthening port modernization, warehousing infrastructure, and inland waterways will reduce transit delays and improve global trade competitiveness.
    - **Streamlining customs clearance, single-window approvals, and leveraging blockchain** for supply chain transparency will enhance efficiency.
        - A focus on regional trade hubs and free trade zones can further position India as a global manufacturing hub.
- **Labor Law Reforms and Workforce Skilling:** Full implementation of the four labor codes is crucial for easing compliance and promoting labor-intensive industries.
    - Introducing **flexible hiring policies, gig economy integration, and sector-specific wage policies** will enhance employment generation.
    - Expanding Skill India, PMKVY, and apprenticeship programs **aligned with Industry 4.0, AI, robotics, and semiconductors** will create a future-ready workforce.

        - Strengthening **industry-academia linkages, vocational education, and STEM learning** will drive innovation.
            - Encouraging women's workforce participation through **workplace safety measures** and incentives can boost productivity.
- **Strengthening MSME Ecosystem and Credit Access:** Streamlining credit disbursement through digital platforms**, increasing ECLGS (Emergency Credit Line Guarantee Scheme) coverage**, and lowering collateral requirements will enhance MSME growth.
    - Expanding **Mudra loans, SIDBI assistance**, and **factoring mechanisms** will improve liquidity for small manufacturers.
    - Encouraging MSME participation in global supply chains through **cluster-based development, technology adoption, and export incentives** will enhance competitiveness.
        - Supporting local component manufacturing under the **Atma Nirbhar Bharat initiative and One District One Product Initiative** will reduce import dependency.
- **Infrastructure Modernization and Industrial Corridors:** Accelerating industrial corridor projects such as **DMIC (Delhi-Mumbai Industrial Corridor), CBIC (Chennai-Bengaluru Industrial Corridor),** and **AKIC (Amritsar-Kolkata Industrial Corridor)** will boost manufacturing hubs.
    - Expanding plug-and-play industrial zones with ready infrastructure, uninterrupted power supply, and low-cost land acquisition policies will attract investments.
    - Strengthening **smart cities, urban logistics hubs, and green energy grids will ensure sustainable industrialization**.
    - Leveraging public-private partnerships (PPPs) in infrastructure financing will ease fiscal constraints.
        - **Integrating high-speed rail freight systems with major industrial zones** will improve supply chain resilience.
- **Reducing Import Dependence and Strengthening Domestic Manufacturing:** India must accelerate indigenization in critical sectors such as **semiconductors, electronics, pharmaceuticals, and defense manufacturing.**
    - **Expanding PLI (Production Linked Incentive) schemes and integrating R&D incentives** for high-value manufacturing will reduce foreign reliance.
    - Developing **special economic zones (SEZs) for electronic components and auto parts** can enhance import substitution.
    - Encouraging joint ventures, technology transfers, and domestic value chain integration will enhance self-reliance.
- **Boosting High-Tech Manufacturing and R&D Ecosystem:** India must scale up high-value manufacturing in **semiconductors, aerospace, electric vehicles (EVs), biotech, and deep-tech sectors** through targeted R&D funding.
    - Expanding **National Quantum Mission, AI innovation hubs, and startup incubation programs** will create a globally competitive tech-driven manufacturing ecosystem.
    - Strengthening **patent protection, technology transfer policies, and university research grants** will drive innovation.
    - Promoting **public-private partnerships (PPPs) in R&D** will enable faster commercialization of indigenous technologies.
- **Strengthening Global Trade Partnerships and Export Competitiveness:** India must aggressively **finalize pending FTAs with the EU, UK, and Canada** to expand market access for manufacturers.
    - Strengthening **participation in global value chains (GVCs) by integrating domestic industries with multinational supply networks** will drive exports.
    - Enhancing export credit facilities, **cross-border e-commerce integration, and global marketing support** will improve trade competitiveness.
    - Strengthening bilateral trade agreements in emerging markets (like **Africa**) will diversify export destinations.
- **Transitioning to Sustainable and Green Manufacturing:** Promoting **carbon-neutral industrial zones,** expanding Green Hydrogen Mission, and incentivizing solar and wind energy adoption will make India a leader in sustainable manufacturing.
    - Encouraging **circular economy practices, eco-friendly packaging, and zero-waste production models** will align industries with global ESG standards.

- Imposing **green regulations while offering tax incentives for sustainability investments** will drive eco-conscious manufacturing.
- Establishing **certification frameworks for carbon credits, green bonds, and renewable energy adoption** will attract global investors.

## Conclusion

India's manufacturing growth hinges on **policy reforms, infrastructure upgrades, and technological advancements** to enhance global competitiveness. By strengthening logistics, MSME support, high-tech R&D, and sustainable practices, the nation can solidify its position as a global manufacturing powerhouse. Embracing '**Vocal for Local, Local to Global'** will be key to making India a hub for world-class manufacturing.

***Drishti Mains Question:***

Discuss the significance of the 'Make in India, Make for the World' initiative in positioning India as a global manufacturing hub. What challenges hinder its success, and what strategic measures are needed to enhance its effectiveness?

## UPSC Civil Services Examination Previous Year Questions (PYQs)

### *Prelims*

**Q. What is/are the recent policy initiative(s)of Government of India to promote the growth of the manufacturing sector? (2012)**

1. Setting up of National Investment and Manufacturing Zones
2. Providing the benefit of 'single window clearance'
3. Establishing the Technology Acquisition and Development Fund

**Select the correct answer using the codes given below:**

(a) 1 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

**Ans: (d)**

### *Mains*

**Q.** "Success of 'Make in India' program depends on the success of 'Skill India' programme and radical labour reforms." Discuss with logical arguments. **(2019)**