

## **Sustainable Development in Manufacturing Sector in India**

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### *Abstract*

*Eleventh Plan has targeted growth in manufacturing at 10.0-11.0 per cent but actual Performance will be only about 7.7 percentages has not shared in the dynamism of the economy not just in the Eleventh Plan, but even in preceding Plan periods which resulted, the share of the manufacturing sector in GDP is only 15.0 per cent in India, compared with 34.0 per cent in China and 40.0 per cent in Thailand. The slow pace of growth in the manufacturing sector at this stage of India's development is not an acceptable outcome. Manufacturing must provide a large portion of the additional employment opportunities as opposed to agriculture for India's increasing number of youth. On the contrary it should be releasing labour which has very low productivity in agriculture to be absorbed in other sectors. While the services sector has been growing fast, it alone cannot absorb the 250 million additional income-seekers that are expected to join the workforce in the next 15 years. Manufacturing has to become an engine of growth, providing at least 100 million additional decent jobs, it will insights into the sources of competitive advantage for Indian manufacturing which could be developed into a broader strategy applicable to larger parts of the manufacturing sector. Also, a comparison of the policy approaches is taken by other countries that have grown their manufacturing sectors much faster than India (such as Korea and China), as well as those that continue to maintain very strong manufacturing sectors (such as Germany and Japan).*

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**Keywords:** Global Network, Skilled Workforce, Policy, Model, Strategies, Framework etc.

## **1. Introduction**

The application of computers and telecommunications has dramatically changed the shape of global manufacturing supply chain. Manufacturing has been ‘de-constructed’. Cost advantage used to be obtained through ‘scale’ in large factories – a well-known example of the paradigm being large integrated auto plants in Detroit. Now activities in the value chain can be dispersed across the world to combine the best with the best – such as back-end engineering services in India and Japan, component production in China and India, and assembly in many countries. Moreover, producers of manufactured products must respond more rapidly to changing market needs. Product life cycles are reducing and the variety of options manufacturers must provide to their customers is proliferating. Therefore, the ability to engineer products quickly and at low cost is becoming an increasing source of competitive advantage. The proof of this is in the success stories of Indian auto manufacturers, auto parts producers, pharmaceutical companies, and its IT-enabled services industry. Taking advantage of domain knowledge built in their enterprises over many decades (which they were compelled to by India’s lack of foreign exchange to allow imports in the 1970s and 1980s) and using high quality and low cost engineers from India’s IITs and other engineering schools, such firms are considered amongst world leaders in ‘frugal innovation and frugal manufacturing’.

Raw material security is vital for manufacturing sector. The targeted growth level of the manufacturing sector of 12.0-14.0 per cent over medium to long term will exert a lot of pressure on raw material requirement. Some of the raw materials such as the coking coal are not available locally or not available in adequate quantity. Therefore, arrangements for assured supply of such raw materials through acquisition of sources of those raw materials overseas need to be put in place. In principle, export of raw material assets particularly which are not available in abundance should be discouraged while encouraging export of value added products. Mining sector can play a significant role in providing raw material security for the country. Not only steel and aluminium, but also energy critical metals and technology metals like Germanium, Gallium, Osmium, Indium, Selenium, Cobalt, Niobium, Beryllium, Tantalum, Wolfram, Bismuth, etc. and rare earth metals, which have a wide application in electronics industry are emerging as critical inputs. Suitable strategies and funds for stepping up exploration, mining and extraction and recycling of these metals as well as for acquisition of global raw material assets for supplementing long term strategic need.

## **2. Analysis**

### **2.1 Integrating into Global Networks**

Building protective walls for shielding Indian manufacturers is neither an appropriate nor a feasible strategy in a world where trade is open. India’s manufacturing strategy must build

upon its competitive advantages in a changing global manufacturing landscape. Abilities to work within networks (and also to design and engineer rapidly) have become critical sources of competitive advantage. Scale remains an advantage no doubt. But in many industries, scale can be obtained by growing networks rather than building massive factories. In fact, the smallness and nimbleness of Indian manufacturers, supported by software, can be their sources of strategic advantage in the new world of manufacturing, where competitiveness is in the 'scope' of a networked enterprise, not the 'scale' of its units.

## **2.2 Improving Physical Infrastructure**

A significant part of the supportive framework to enable manufacturing to expand rapidly in line with both domestic and overseas demand is the rolling out of adequate physical infrastructure support including electric power, railways, roads and ports. Poor infrastructure, especially power, is a major constraint on competitiveness especially of SMEs who cannot afford to build their own infrastructure.

## **2.3 The Role of SMEs**

SMEs provide the foundation for the manufacturing sector in all large manufacturing countries, whether Germany, Japan, the USA, or China. Even in India, SMEs have been a major contributor to generation of employment within the manufacturing sector, and even to its exports. India has rightly abandoned the approach of reserving sectors for its SMEs and in its place it has adopted the more sustainable approach of nurturing competitive SMEs. SMEs absorb technologies and improve their productivity most effectively within industrial clusters around larger enterprises, preferably linked with technology institutes. A strategy for growing innovative and competitive manufacturing enterprises, small as well as large ones in India must stimulate the growth of dynamic clusters. Difficulties of acquiring land and poor infrastructure are serious handicaps for Indian manufacturing enterprises. The clustering of enterprises, along transport corridors and adjacent to ports, also enables the provision of good infrastructure to them.

## **2.4 Skilled Workforce**

Skilled human resources are necessary for competitive manufacturing enterprises. India has a large pool of people to be employed, a dynamic skill development process linking industry needs with training processes, can give Indian manufacturing a huge competitive advantage. Skilled workers, good manufacturing supervisors and managers all form part of the human resource pool. They are essential for the competitiveness of manufacturing enterprises. Indeed, they are the key to the coordination and continuous improvements that are required for productivity. The best of India's engineering graduates no longer work in factories. They work in IT service industries and many, going through management schools,

end up working in the financial, consulting, and other service industries. Manufacturing must be made, once again, an attractive career for India's talent.

## **2.5 The Cost of Doing Business**

Two other challenges that beset manufacturers in India illustrate the nature of solutions required to attract more investments into manufacturing. The 'cost of doing business' is much higher in India than in other countries due to the plethora of forms and inspections that manufacturers have to comply with, some of them arising out of legislations long pending review, such as the Factories Act. Another challenge is to provide more flexibility to employers to adjust employment levels along with more fairness and security to employees. The solution cannot be restricted merely to modifying laws such as the Industrial Disputes Act to permit hire and fire. New institutional arrangements are required to provide security for employees before existing legal safe-guards for them can be reduced or altered. The evolution of such institutions, as well as development of employee-employer contracts founded on new principles, requires wider stakeholder involvement and consensus. At the national and state levels, unions and employers' associations must engage in a well-conducted constructive dialogue to build trust and find new institutional solutions. Such solutions can take the forms of unemployment insurance and staffing companies. Institutionalised processes of consultation between managers and workers within manufacturing units, as exist in several enterprises, must be widely applied in all units. The quality and conduct of representation institutions on both employers' side and employees' side must be strengthened too. In short, the solution to the fairness-flexibility conundrum is not only in changes in laws but also in building and strengthening institutions.

## **3. A New Policy Model - Application**

The insistent failure of India's manufacturing sector to meet expectations suggests that a radical change in the policy approach is needed. The 'coordination' challenge in growing the manufacturing sector is complex. The range of inputs required for manufacturing enterprises is larger than for enterprises in other sectors. The linkages within the manufacturing sector are many too: between raw material producers, capital goods' producers, component producers, and assemblers. Policies that favour one segment may harm another. With rapid changes of technologies in various industries and open international trade environment within which domestic manufacturers must compete, response by producers and policy makers must be dynamic. Recent studies of the manufacturing strengths of countries reveal that, while the industries they focussed on and the policies they adopted differed, all the successful countries had one thing in common. They had a very good process for consultation between producers and policy makers and for establishing coordination amongst the policy-makers. Thus, the paradigm of policy planning in manufacturing must shift from 'planning as allocations' to

‘planning as learning’; and from budgets and controls towards improving processes for consultation and coordination.

The design of processes of consultation, coordination, and learning, must fit a country’s political and economic structures. China’s policy approach fits its political economy, as do Japan’s, Korea’s and Germany’s. The development of a good architecture for a consultative policy making process, and facilitation of its conduct, is what ‘planning’ for manufacturing growth has to be about.

#### **4. Challenges**

The challenges to developing and implementing a cohesive manufacturing strategy in democratic India are many:

- There is a multiplicity of ministries dealing with different aspects of industry e.g. commerce, labour, environment, science, finance, etc.
- The states have a major role in facilitating the growth of manufacturing in terms of provision of infrastructure, management of various local regulations, and managing labour related law
- Industry associations lobbying for their members’ (often conflicting) interests are important stakeholders
- Other stakeholder groups who must be involved in the consultations in a more systematic and productive way are: unions, land owners, etc.
- There are many over-sight bodies and committees, perhaps too many: there is need to sharpen their roles and improve co-ordination amongst them.

Cohesion can be brought about through more effective coordination amongst agencies, and more effective consultation amongst stakeholders. The success of the Indian auto sector can be attributed significantly to the long term plan prepared a few years ago, collaboratively by the Society of Indian Automobile Manufacturers, the Association of Component Manufacturers of India, and the Ministry of Heavy Industry, involving other agencies too. Such plans are required in other sectors too.

There are also issues that cut across many industries, such as laws and institutions relating to labour and land, in which solutions must involve stakeholders.

#### **5. Research Methodology:**

Study is based and analysis is done on secondary data reports published in reputed Journals and websites.

##### **5.1 Hypothesis**

Manufacturing sector is facing deficiencies in accelerating economic growth. Sustainability can be achieved through cohesion between owners of factors of production,

skilled labours, investment policies and expertise and the governing bodies and comparing development policies of fast developing economies.

## **5.2 Objectives and Components of the manufacturing plan**

India's strategic objectives for the manufacturing sector in the next 15 years should be to bring about a quantitative and qualitative change through a set of policies and plans with the following five objectives:

a. Increase manufacturing sector growth to 12.0–14.0 per cent over the medium term to make it the engine of growth for the economy. The 2.0 to 4.0 per cent differential over the medium term growth rate of the overall economy will enable manufacturing to contribute at least 25.0 percent of GDP by 2025.

b. Increase the rate of job creation in manufacturing to create 100 million additional jobs by 2025.

Emphasis should be given to creation of appropriate skill sets among the rural migrant and urban poor to make growth inclusive.

c. Increase domestic value addition and technological 'depth' in manufacturing.

d. Enhance global competitiveness of Indian manufacturing through appropriate policy support.

e. Ensure sustainability of growth, particularly with regard to the environment.

## **6. Conclusion**

The National Manufacturing Plan must have three components:

i. Special focus on some sectors of manufacturing which will enable the country to rapidly achieve its goals for manufacturing and strengthen the overall manufacturing sectors to bridge the gap between the goals for the sector and the current reality and a 'keep/stop/start' analysis of initiatives/schemes to implement those strategies.

ii. An identification of the constraints that cut across manufacturing sectors; implement policies to relieve these constraints; and build capabilities.

iii. Active attention to improving the processes of implementation. Consultations between policy makers and producers are required within each of the policy-areas. Since many stakeholders are involved, and various ministries in government too, a nodal agency must be accountable for coordinate the evolution of industrial policy and for managing its progress within the overall Plan framework.

### **6.1 Priority Sectors**

1. Sectors that will create large employment

- Textiles and Garments
- Leather and Footwear
- Gems and Jewellery

- Food Processing Industries
- Handlooms and Handicrafts
- 2. Sectors that will deepen technology capabilities in Manufacturing
  - Machine tools
  - IT Hardware and Electronics
- 3. Sectors that will provide Strategic Security
  - Telecommunication equipment
  - Aerospace
  - Shipping
  - Defence Equipment
- 4. Manufacturing-Technology sectors for Energy Security
  - Solar Energy
  - Clean Coal Technologies
  - Nuclear power generation
- 5. Capital equipment for India's Infrastructure Growth
  - Heavy electrical equipment
  - Heavy transport, earth moving and mining equipment
- 6. Sectors where India has competitive advantage
  - Automotive Sector
  - Pharmaceuticals and Medical Equipment
- 7. MSME sector—the base for the Manufacturing Sector—employment and enterprise generation

#### Overcoming Limitations and Building Competences (Advantages)

1. Clustering/Aggregation:
  - Relieve infrastructure constraints
  - Strengthen industry-university linkages
  - Large, green-field industry-urban conglomeration: SEZs, Mumbai-Delhi Rail Corridor, NMIZs
2. Business Regulatory Framework
  - Competition Policy
  - Regulatory Infrastructure
  - Business Responsibility for Environment and Society
3. Human Resource Management
  - Skill Development
  - Industrial Relations—Fairness/Flexibility
  - Manufacturing Managers

4. Strengthen Technology

- R&D
- IPR policies
- Trade and fiscal measures
- Standards

5. Reform role of PSEs

- Focus on R&D
- High capital/high risk areas
- Professional management

6. Boost Exports

- Reducing administrative costs
- Branding/marketing
- Logistics

7. Land and Water

- Governance
- Stakeholder consultation processes
- Rehabilitation and Compensation policies

8. Energy Availability and Environmental Sustainability

- Efficiency
- Emissions
- Renewable/Recycling: 'Green Manufacturing'

9. Enabling Institutions for MSMEs

- Access to capital and credit
- Technology and productivity
- Marketing and production inputs
- Clusters

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