

Cluster Initiatives in a Transition Economy: The Pot-Pourri of Indian Economy

Dr. V. N. Laturkar, SCMS, SRTMUN
Gajanan Bellale, Research Student SRTMUN
Dr. G. B. Katalakute, FAO, SRTMUN

Abstract

The purpose of this paper is to provide an overview of the practice of competitiveness through cluster development approach. We begin by looking at some of the roots of the practice and how it has evolved to become a significant force in the way many organizations and many countries now pursue economic development. We then provide an overview of the practice of competitiveness, looking specifically at how cluster-based initiatives have been developed in the context of multilateral and regional organizations such as the UNIDO, the World Bank, the Inter- American Development Bank, USAID, and in industrialized countries. This theme paper captures the key paradigms that will shape future cluster initiatives in the context of developing countries. It is not intended to provide any prescriptions or policy recommendations here but provide a list of key paradigms that need to be focused for discussions in the conference. It is expected that the speakers, participants and moderators will either provide some of the answers or add to the list of contemporary challenges thus increasing the knowledge base about the gaps. The lion's share of production in most of the developed countries is accounted for by the small and medium enterprises. India is gearing up to raise output from this sector significantly to those levels.

Clusters in MSMEs (Micro, Small and Medium Enterprises Sector):

MSME sector have played an important role in our country's economy & significantly contribute towards growth, manufacturing, services, industrial production, export, creation of employment opportunities, etc. MSMEs are the single largest employer after agriculture, contributing 8 % of GDP, 45% of manufacturing output & 40% of exports of the country.

Often Micro, Small and Medium Enterprises (MSMEs) producing a range of similar or same products co-exist in typical geographical locations for decades and even for centuries in many countries. This phenomenon is referred to as clustering of MSMEs. Such clusters are found in plenty, both in developed and transition economies. A cluster can be categorised based on its primary product, performance and thematic challenges as explained below:

a) Product: Product wise, a cluster can be micro (including handicraft and handloom), traditional manufacturing, mostly MSMEs and few large firms (plastics, leather, food processing) and high-tech (bi-technology, software, etc.).

b) Performance: Performance wise a cluster can be overachiever (performing) or underachiever (non-performing) or "wannabe" (latent).

c) Thematic Challenges: Based on thematic challenges, a cluster can have the following variants, energy intensive (scope for energy savings like Castings & Forging, Steel re-rolling, Foundry, Ceramics, Brick), pollution intensive (scope for reducing pollution like Leather, Dyes, Chemicals, Plastics, Electroplating, Fly Ash, Glass, Detergents, Dry Cells), location based disadvantages (need for relocation like Textiles, Chemicals, Leather), quality challenged (need for quality up-gradation like Agro-processing, Pharmaceuticals), financially weak (requiring innovative financing products), socially not responsible (needs for CSR like Safety Matches, Textiles, Leather), etc. For certain clusters, there can be multiple needs, although for some certain needs are overwhelming as compared to others.

With a contribution of 40 per cent to the country's industrial output and 35 per cent to direct exports, India's SME sector is the key driver in the nation's economic growth. In terms of employment, this sector plays a very crucial role, being the second largest employer (some 20 million persons) after agriculture. This is important in a country where a significant portion of the population is below 25 years of age and the annual addition to the labour force is humongous. One of the peculiar characteristics of this sector is the existence and persistence of clusters.

Rational behind cluster development:

There is no rule either regarding the generality of the product, or largeness of the area that a cluster covers. *For example, in Austria, a successful wood cluster exists with less than a dozen firms, whereas the knitwear cluster of Prato in Italy had 9000 firms at one point of time. (MSME: 2006). Italy is probably the only country in the world that has a national law for promotion of clusters, yet different regions within Italy have their own criteria for classifying areas as clusters, reflecting the need for diversity under the conceptual framework.*

Cluster approach is a drive to scale up the infrastructural and production chain at MSME clusters which have remained unorganized and have not kept pace with the modernization and development that have been taking place so far. This sector defines the fate of industrial development in true sense. The prospects are optimistic and the facts are that fate of industries in many countries of this sector lies in infrastructural

Up-gradation, modernization of the machinery and product diversification. Innovative manufacturing as well as designing know-how, furthered by brand building of the native products hold the key to creating a niche market for the products manufactured by the clusters. The cluster programme is expected to support the Up-gradation of infrastructural facilities coupled with market linkages and product diversification. Keeping in view the fact that the export value realization of MSME products is quite high, integrated infrastructure development has been the policy focus in recent times. The multiplicity in production in tiny units along with geographical wide spread base has resulted into higher level of levies marring the competitiveness in international market. Thus, addressing the problem of infrastructure bottlenecks by suggesting continuation of the sector specific infrastructure schemes has been the focus of attention. The objective is to maintain "social equilibrium" through raising the living standards of millions of poor artisans located in far flung areas of the country as well as employment generation. There has been a paradigm shift vis-à-vis this largely household industry and efforts are now being made to tap its potential with an integrated approach while appreciating the very factors that differentiate the sector from large, medium or even the small scale industry.

Trans-disciplinary relevance:

One of the peculiar characteristics of this sector is the existence and persistence of clusters. The term 'cluster' indicates a sectoral and geographical concentration of enterprises, which produce and sell a range of related products and are, thus, faced with common challenges and opportunities. These clusters have been in existence for decades and sometimes even centuries. There are several types of clusters. For example, there are clusters based on a common resource such as the marble cutting and polishing industries around Makrana in Rajasthan based on the marble deposits in that area or the block printing cluster of units in Sanganer near Jaipur, which rely on the peculiar composition of the water in that area or the machine tool industry in Bangalore, which taps the engineering talent pool in the city. Examples of induced clusters would be the auto component industry at Gurgaon, triggered by the setting up of the Maruti Udyog car manufacturing factory there or the petro-chemical based units, which have come up at Vadodra consequent to the establishment of IPCL. Clusters could also develop in the form of similar enterprises, springing up near each other in a "me-too" fashion, such as

cotton knitwear units at Tirupur in Tamilnadu. SMEs operating in such clusters derive a clear competitive advantage from:

- ❖ The proximity to sources of raw materials.
- ❖ The availability of suitable business development services.
- ❖ The abundance of customers/buyers attracted by the cluster tradition in that industry.
- ❖ The presence of a skilled labour force.

SME clustering can be observed in a wide range of countries and sectors. In Italy SME clusters that have reached high levels of growth and leadership in profitable niches of world markets (e.g. leather goods, textile, jewellery, ceramic tiles, and spectacle frames). Similar examples exist from other developed countries such as Taiwan, China, Hong Kong, Thailand, Germany, the US and Japan. India has 388 documented industrial clusters, around 400 handloom clusters, about 3,000 handicraft clusters and 2,800 micro-enterprise clusters that contribute significantly to its economy, and provide employment to more than 20 million people. According to one estimate, clusters account for 77 per cent units, 72 per cent employment, 61 percent investment, 59 per cent output and 76 per cent exports of small scale industries. Among the larger clusters, it is worth mentioning those of:

- ❖ Panipat accounting for 75 per cent of the total blankets produced in the country.
- ❖ Tirupur, which is responsible for 80 per cent of the country's cotton hosiery exports.
- ❖ Agra with 800 registered and 6,000 unregistered small scale units making about 150,000 pairs of shoes per day with a daily production value of \$1.3 million and exports worth \$60 million per year.
- ❖ Ludhiana, a city that is well known as the Manchester of India, which alone contributes 95 per cent of the country's woolen knitwear, 85 per cent of the country's sewing machines and 60 per cent of the nation's bicycle and bicycle parts.
- ❖ Bangalore, which accounts for over 50 per cent of the output of machine tools in the country.
- ❖ Surat, which cuts and polishes three-quarters of the world's diamonds in several hundred "factories" employing over 300,000 cutters.

Globalisation presents threats and opportunities to Indian industry. The bigger players can afford to put in large resources to counter the former and exploit the latter. SMEs are individually resource constrained to adopt this approach. The CDP is an ideal strategy for SMEs to overcome this handicap and meet the challenges of globalisation.

Societal Relevance:

Cluster development initiatives during 1990-2000 were primarily focused on technology intensive industries such as, medical devices, biopharmaceuticals, leather, auto components, etc. with broad objective of improving productivity and competitiveness of SMEs. However, during the period 2000-2010, many changes in terms of objectives have been witnessed. Cluster initiatives were subsequently applied for poverty alleviation, fostering business responsibility and inclusive growth by international agencies such as UNIDO and USAID while several countries developed focused interventions among Handlooms, Handicrafts and other rural enterprises in the informal sector. Innovation became focus of a number of European cluster initiatives across different sectors. In India, it is the Ministry of Science & Technology and National Innovation Council that initiated cluster initiatives with innovation focus. With a view to ensure cross learnings and promote commercial linkages across similar sectors in different countries, European Union and UNIDO supported select interventions across Italy, Vietnam, India and other European countries. With a view to support cluster branding, European Union and UNIDO undertook initiatives in Europe, Africa and Latin America to support a range of clusters across diverse sectors with unique products &

services to offer. A number of public schemes for cluster based development have also become operational with varying objectives, methodologies and scope, producing various results and lessons. However, there are few platforms and sources where evidence based learning of different cluster initiatives are readily available, particularly in the national context and more specifically in the developing country context. The cluster specific experiences and learnings from these initiatives is the least available. At international level, 'The Competitiveness Institute' (TCI) based in Barcelona has helped bridge this gap through its regular series of seminars and e-based learning platform.

Clusters in India: Relevance to National Missions / Priorities:

With an estimated over 6000 clusters mapped, India has the highest number of clusters compared to any other country across the globe. As per the 4th All India census on MSMEs, conducted by the Ministry of MSME (Govt. of India) in 2009, there are 26.1 million enterprises, employing 59.4 million people. The census estimate MSME sector contribution to national industrial output and industrial export at 45 per cent and 40 per cent respectively and is responsible for 9 per cent of the country's gross domestic product (GDP). The estimates provided by the Cluster Observatory (www.clusterobservatory.in) have taken into account only 1156 industrial clusters which include 694,379 enterprises, and a total of 15,692,736 employed persons. It is estimated that 77 percent of all industrial MSMEs with around 72 percent of employment, 61 percent investment, 59 percent output, and about 76 percent exports of the small scale industry sector exist in clusters in India. The following map illustrates the presence of industrial clusters in India.

(Source: www.clusterobservatory.in)

Cluster Development in India:

While many clusters have existed for centuries and have proven to be advantageous over enterprises outside clusters, cluster based development of MSMEs in India is not more than two decades old. The cluster development phenomenon hinges on the basic principles of promotion of joint action, including competition among buyers and suppliers of BDS, for value chain and productivity improvements.

Conscious policy and promotional support has been given by the Government of India to develop MSME sector in the country. Over the past 60 years of planned growth, there is hardly any aspect of intervention that has not been touched upon in the context of the promotion of MSMEs. Numerous schemes and programmes have been launched to address vital issues such as credit, technology up gradation, skill formation, marketing support, export promotion and infrastructure creation.

In late eighties to late nineties, cluster development in India was based on select thematic areas e.g. technology/quality up-gradation, etc. often termed as technology up-gradation (UPTECH) programmes and was initiated by financial institutions like SIDBI, State Bank of India and the then Ministry of SSI. It was in 1996 that UNIDO conducted a study and mapped 138 clusters in the country. In the same year, the Government appointed Abid Hussain Committee which underlined the importance of promoting MSEs through clusters and also the role that can be played by various stakeholders in that process. During the subsequent years, UNIDO also did implementation of cluster development programmes in 7 clusters with a special emphasis on social capital as a key strategy for cluster development. UNIDO also developed and propagated a methodology on how to undertake cluster development keeping social capital as the central pillar. However, it was only in 2002-03 that cluster development programmes (CDPs), especially in traditional manufacturing, gathered noticeable momentum at the national level, with lead taken by the Ministry of MSME and the introduction of the Small Industries Cluster Development Programme (SICDP) scheme. The Scheme was later renamed as Micro and Small Enterprise Cluster Development Programme (MSECDP), in

the year 2006. As mentioned above, this was soon followed by a scheme called SFURTI and later a scheme for promoting competitiveness of MSMEs called NMCP. Since then the holistic cluster development programmes have gathered a noticeable momentum at the national level. Till date around 30 schemes/programmes have been introduced based on cluster development by various institutions including ministries of the Central government, different State Governments, financial institutions, technical institutions apex business member organization and international agencies. (Source: *Policy and Status Paper on Cluster Development, 2007 by FMC, pg. 19*)

Besides, there are other ministries, like Ministry of Textiles and Department of Science & Technology that have taken up cluster development in a bigger way. Moreover, various other government institutions like NABARD and SIDBI besides various international organizations like DFID, GIZ and ILO have also embarked on holistic cluster based development initiatives for a sufficiently longer duration. Industry Associations like Confederation of Indian Industries (CII) also has supported 240 clusters in last one decade impacting about 2500 units through its cluster initiatives.

Established in 2004, Chandigarh based CII-AVANTHA Centre for Competitiveness for SMEs is a one stop shop for SME development. With a pan India approach, the Centre plays role of a guide and mentor for SMEs by its ‘Cluster Approach’, which enables SMEs to learn through sharing of knowledge with other Cluster companies. Best practices and a detailed road map for enhancing productivity and efficiency for Cluster firms is charted and implemented by the seasoned counselors of the Centre. The Centre works exclusively to enhance the competitiveness of MSMEs, through interventions in areas such as Manufacturing Excellence, Energy Efficiency, Cost Management, Total Employee Involvement, e-Learning, Corrosion Management etc.

Foundation for MSME Clusters (FMC), which draws its technical roots from UNIDO is Instrumental in providing broad based service to the ‘Micro, Small & Medium Enterprises’ (MSMEs), their representative ‘Business Membership Organizations’ (BMOs), Technical agencies, Financial institutions and Government (both state level and national level) in India and many other transitional economies. FMC was set up for conceptualisation and implementation of such initiatives for MSME sector across various thematic areas of specialisation that include productivity & competitiveness, energy efficiency, business development services (BDS), business responsibility, common infrastructure development and innovation. FMC has provided training and policy advisory services both nationally and internationally in the area of MSME development and helped draft a number of public schemes of assistance followed by training of policy makers & practitioners to then implement those schemes effectively. FMC has worked in more than 150 clusters in India. Like FMC, there are around 10 national organisations who work in the area of MSME based cluster development. While majority of such targeted CDPs have been planned to promote productivity, of late, a select CDPs have also targeted poverty reduction, responsible business behaviour, energy efficiency and BDS providers’ markets. In contrast, CDPs in developed countries have focused primarily on promotion of innovation. It is only of late that with a programme ‘Promoting Innovation Clusters (PIC) in India’, the Department of Science and Technology (DST) under the Ministry of Science and Technology, Government of India, has taken up cluster based initiatives to promote innovations across three sectors viz: Life Sciences, Foundries and Information & Communication Technology during 2007-2012.

Schemes and Programmes for Cluster Development in India:

1. Micro and Small Enterprises Cluster Development Programme (MSECDP)

Development Commissioner (MSME), Ministry of MSME: Productivity and competitiveness, Infrastructure.

2. National Manufacturing Competitiveness Programme Development Commissioner (MSME), Ministry of MSME: Energy, ICT, IPR, Design, Lean Manufacturing, Quality, Market, Technology, etc.
 3. Scheme of Fund for Regeneration of Traditional Industries (SFURTI) Khadi and Village Industries Commission and Coir Board, Ministry of MSME: Productivity and competitiveness, Infrastructure.
 4. Schemes for Integrated Textile Parks (SITP) Ministry of Textiles: Infrastructure.
 5. Baba Saheb Ambedkar Hastshilp Vikas Yojna (AHVY), Development Commissioner (Handicrafts), Ministry of Textiles Development: Handicrafts clusters.
 6. Integrated Handloom Cluster Development Scheme (IHCDS), Development Commissioner (Handlooms), Ministry of Textiles: Development of Handloom clusters.
 7. Industrial Infrastructure Up gradation Scheme (IIUS) (Now Modified IIUS), Department of Industrial Policy and Promotion, Government of India: Infrastructure.
 8. Mega Food Park Scheme Ministry of Food Processing Industries: Infrastructure, Technology, Quality.
 9. Common Facilities for Ayurveda Clusters, Department of Ayush, Ministry of Health and Family Welfare Infrastructure.
 10. Margin Money Scheme for Cluster Development Activities, Department of Industries, Government of Kerala: Productivity and Competitiveness.
 11. Grant Assistant to Cluster Development Activities Industries Department, Government of Kerala: Training/Skill.
 12. Scheme for Assistance to Cluster Development, Office of Industries Commissioner, Government of Gujarat: Competitiveness.
 13. Integrated Cluster Development Programme, Rural Industries Department, Government of Madhya Pradesh: Competitiveness.
 14. NMDFC Micro Financing Scheme National Minorities Development & Finance Corporation (NMDFC): Employment Programmes.
- Other cluster schemes:**
1. Umbrella Programme for MSMEs BMZ, GIZ, DCMSME, SIDBI Employment, Sustainable development.
 2. Promoting Innovation in Clusters DST Innovation.
 3. Promoting Innovation in Clusters National Innovation Council Innovation.
 4. SBI Project UPTECH State Bank of India Technology.
 5. National Small Industries Corporation (NSIC), National Small Industries Corporation, Machinery and Equipment.
 6. National Programme for capacity building of textiles SMEs through cluster based approach Textiles Committee, Ministry of Textiles Capacity Building.
 7. NABARD Cluster Development Programme, National Bank for Agriculture and Rural Development Competitiveness.
 8. NMCC-Project Vikas along with National Manufacturing Competitiveness Microsoft Competitive Council.
 9. Technology Upgradation Programme (TUP), SIDBI Technology and Finance.
 10. Cluster Development Programme UNIDO Productivity, Competiveness, Poverty Alleviation, Responsible Production.
 11. Small and Medium Enterprise Financing Development Project, SIDBI-DFID BDS and BDSFs, Financing, Energy Savings.
 12. IICA GIZ programme for CSR GIZ-FMC Business responsibility.
 13. Promoting Sustainable Development, EU-FMC, EU-TERI Business responsibility.
 14. Scheme for promotion of Energy Efficiency in MSMEs, Bureau of Energy Efficiency Energy Savings.

15. Boosting employment through Small Industries Development, (ILO)Industrial Labour Organisation Health & Hygiene, Working Condition.

Sources: Ministries/Institutions concerned as mentioned above and FMC 2007

Review of Research and development in the area: International status:

The foundations of this concept can be traced back to the work of the economist Alfred Marshall, who in Principles of Economics (1890) described the phenomenon as “the concentration of specialized industries in particular localities” and noted that these agglomerations of small-scale businesses enjoyed economies of scale comparable to those of large firms. Michael Porter was then instrumental in popularizing the concept of industry clusters is his book ‘The Competitive Advantage of Nations’ (1990). He defined cluster as "a geographical proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and externalities".

Thereafter, there has been a surge of interest in clusters as drivers of economic growth and hubs of innovation. Rosenfeld (1997) defines cluster as geographically bounded concentration of similar, related or complementary businesses, with active channels for business transactions, communications and dialogue, that share specialized infrastructure, labour markets and services, and that are faced with common opportunities and threats. UNIDO defines cluster as concentration of micro, small and medium enterprises in a given geographical location producing same or a similar type of products or services and these enterprises face similar type of opportunities and threats. The cluster is known by the name of the product being produced by principal firms and the place they are located in.

In developing countries like India, the private sector mainly consists of micro, small and medium enterprises that generate a large share of employment and income opportunities. Often, however, their development potential remains untapped, as firms operate in isolation, are locked into uncompetitive production patterns and unable to approach dynamic business partners that could bring in new expertise and know how. Cluster scheme acts truly an effective engine of sustainable development.

Even UNIDO aims to boost the development of a competitive private sector and contribute to poverty reduction by building sustainable linkages between small-size enterprises, their larger scale business partners and support institutions. Linkages through clusters, enhance enterprise competitiveness through the realization of economies of scale and scope and are a source of sustainability, as they increase the capacity of the economic actors to collectively react to crisis and turning points. Linkages also pave the way for broad-based and inclusive development, where poor entrepreneurs and workers participate in economic activities on fair terms.

The soft and hard intervention through Common Facility Centers (CFCs) and Special Purpose Vehicle (SPVs) created under these schemes; promote the economic development provided the clusters are not based on monopolistic practices but on cooperation and collaboration. The subsidy upto 80% of project cost along with training to main promoter and members, has resulted in deployment of best technology and equipments which otherwise, could have been just a dream for many MSMEs in India.

References:

- 1) Casaburi G. and Pittaluga L., 2014, “Lessons Learned from Case Studies of Cluster Development Programs”.
- 2) C.Pietrobelli, A.Maffioli, R.Stucchi (Eds.), 2014, The Evaluation of Cluster Development Programs, Washington DC: Inter-American Development Bank, chapter 9.
- 3) Promoting Competitiveness in Practice prepared by prepared for the U.S. Agency for International Development for USAID.
- 4) Twelfth Five Year Plan, Planning Commission, Government of India.

- 5) Michael Porter, *The Competitive Advantage of Nations* (1990), Oxford Research AS-2008.
- 6) Oyelaran-Oyeyinka B. and McCormick D.(2007), *Policy and Status Paper on Cluster Development*, 2007 by FMC.
- 7) Orjan Solvell, Goran Lindqvist, Christian Ketels (2003), *The Cluster Initiative Green book*, Bromma Tryck AB, Stockholm.
- 8) S. X. Zeng (2008), *Cluster analysis for studying industrial sustainability: an empirical study in Shanghai*, *Journal of Cleaner Production* 16(10):1090-1097.
- 9) Chandan Dev Singla (2008), *Knowledge-based Cluster Development in India Opportunities and Challenges*, thesis submitted in partial fulfilment for the Degree of Master of Science in Real Estate Development at the Massachusetts Institute of Technology.

Websites:

- 10) www.clusterobservatory.in
- 11) <http://map.usaid.gov>
- 12) <http://www.atcluster.org>
- 13) <http://www.clusterobservatory.eu>
- 14) <http://www.clustersfordevelopment.org>
- 15) <https://fmc.org.in/wp-content/uploads/2012/10/Theme-Paper-International-Conference.pdf>
- 16) <http://www.competeprosper.ca/index.php/clusters/data>
- 17) <https://www.unido.org/our-focus/advancing-economic-competitiveness/supporting-small-and-medium-industry-clusters>