Improving the Productivity & Competitiveness of Industrial Clusters

A holistic strategy for India

Planning Commission
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The principal contributors are the team from KPMG, Ankit Jain from Massachusetts Institute of Technology and the team from Paradigm Consulting working at the Planning Commission.

KPMG worked on developing a detailed description of the capabilities and role of the 'Cluster Stimulation Cell' and also on its implementation roadmap. Ankit worked extensively to profile Cluster policies in select developing and developed economies and has also been instrumental in creating the FACTS Framework for Cluster evaluation. The team from Paradigm Consulting - the adjunct team assisting the Planning Commission for the Manufacturing Plan – worked with KPMG and Ankit on their reports and also on developing the Cluster Competitive Index.

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1. Introduction

A Cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, that share common markets, technologies, worker skill needs, and which are often linked by buyer-seller relationships. Industrial clusters are increasingly recognized as an effective means of industrial development and promotion of small and medium-sized enterprises. In fact the Ministry of Micro, Small and Medium enterprises (MSME) adopted the cluster approach as a key strategy for enhancing the productivity and competitiveness as well as capacity building of small enterprises. The issue of effective Cluster management has gained immense popularity amongst policy makers as a very important tool of intervention. Recognizing this, Clustering and Aggregation is one of the identified areas for focus in the National Manufacturing Plan (NMP).

There are multiple bodies that are associated with Cluster development initiatives. These include Government bodies, Public Sector Undertakings and Industry Specific bodies. Various central ministries (e.g. Ministry of MSME, Textiles and Commerce & Industry etc.) run multiple schemes related to cluster development. Given the multiplicity and importance of these initiatives, they would benefit from the creation of a shared repository of theoretical and practical knowledge related to cluster management and cluster development. The Manufacturing chapter in the 12th Five Year Plan document suggests the formation of a 'Central Cluster Cell' (renamed as the *Cluster Stimulation Cell*) with the objective of maintaining cluster information, performance evaluation and identification and facilitation of sharing of best practices among the cluster participants.

The basic ingredient for the government to make incisive, relevant and impactful interventions at the Cluster level is having information on the units within Clusters. A study by UNIDO mapped over six thousand Clusters in traditional handloom, handicrafts and modern SME industry segments. Moreover, each Cluster has many manufacturing and services units - both registered and unregistered. Further, very few of these Clusters are organized and have 'Cluster Associations' – a body formed to represent the interests of the Cluster units and interface with various government departments and other agencies to promote the state of productivity and profitability of its members.

Therefore, it is imperative that a mechanism for gathering reliable data on Clusters and their units should be instated. The data needs to be collected on performance parameters of individual units as well as indicators of competitiveness at the Cluster level. Needless to say this cannot be a one-time exercise but needs to be a practice in perpetuity. We need reliable, quantifiable data which is gathered annually on defined parameters and gets recorded in a repository for easy extraction and analysis. This information will serve as the indicator to

determine where the Cluster (and units) may require assistance, and may also highlight success stories worth understanding, decoding and emulating.

The **Cluster Stimulation Cell** (CSC) can play this role of creating, disseminating and recording useful information and practices on better Cluster management. However, for the CSC to do its work, data is required on Cluster unit performance. A framework **(FACTS framework)** has been developed that would gather inputs on key parameters at the Cluster and Cluster unit level for this purpose. Further, to create a pull effect of Clusters volunteering to get organized and share data, an incentive structure works better than a mandate. To this end, creation of a **Cluster Competitiveness Index** (CCI) has been proposed.

This paper begins with discussing the challenges facing small and medium manufacturing firms and builds the case for how adopting a Cluster approach would help spur greater productivity of these enterprises. It imperative for the country to improve the manufacturing capability of its MSMEs since it is from these small and medium units that tomorrow's large enterprises would emerge to boost industrial growth of the country. The paper further examines successful cluster policies across few developing as well as developed economies. It then assimilates and contextualizes these lessons and builds on the current thinking around cluster development to suggest a three pronged strategy for improving cluster performance and development in India.

2.   Challenges facing MSMEs

Despite its strategic importance in any industrialization strategy, the opportunities that the Indian landscape presents and its immense potential for employment generation, the MSME sector confronts several challenges. They face problems at every stage of their operation, whether it is buying of raw materials, manufacture of products, marketing of goods or raising of finance. Some of these challenges facing Indian MSMEs are:

i.   **High cost of credit:** Access to adequate and timely credit at a reasonable cost is the most critical problem faced by this sector.   The major reason for this has been the high risk perception among the banks about this sector and the high transaction costs for loan appraisal. Further, players in MSME sector are not in a position to provide collateral in order to avail loans from banks and hence denied access to credit.

ii.   **Lack of access to global markets:** With the liberalization and globalization of the Indian economy, the small enterprises in India have unprecedented opportunities on the one hand, and face serious challenges, on the other. While access to global market has offered a host of business opportunities in the form of new target markets, possibilities to exploit technological advantage, etc., the challenges in this process have flowed

mainly from their scale of operation, technological obsolescence, and inability to access institutional credit and intense competition in marketing.

iii. **Low technology levels and lack of access to modern technology:** The MSME sector in India, with some exceptions, is characterized by low technology levels, which acts as a handicap in the emerging global market. As a result, the sustainability of a large number of MSMEs will be in jeopardy in the face of competition from imports.

iv. **Lack of skilled manpower for manufacturing, services, marketing, etc.:** Although India has the advantage of a large pool of human resources, the industry continues to face deficit in manpower with skills set required for manufacturing, marketing, servicing, etc.

v. **Innovation, restructuring of operations, sharing of knowledge and best practices:** As liberalization prevails in the global economy, small firms will be under tremendous pressure of factors like innovation, restructuring of operations and problem in achieving production efficiencies. The competition between a small and big firm is not only in price and size, but also compete on the basis of their ability to innovate. Hence, in order to maintain sustainability in this ever-changing global economy, SMEs should also adopt innovative techniques and should undergo with continuous improvement in their product, process, like big players.

vi. **Procurement of raw materials at a competitive cost:** This is a growing challenge faced by this sector as procurement for raw materials is carried out within local territory due to their financial constraints and procurements are much smaller in scale as compared to industry at large.

vii. **Inadequate infrastructure facilities, including power, water, roads, etc:** To ensure competitiveness of the MSMEs, it is essential that the availability of infrastructure, technology and skilled manpower are in tune with the global trends. MSMEs are either located in industrial estates set up many decades ago or are functioning within urban areas or have come up in an unorganized manner in rural areas. The state of infrastructure, including power, water, roads, etc. in such areas is poor and unreliable.

3. A Cluster approach to improve productivity and innovation of MSMEs

A cluster approach can help firms achieve competitive advantage by promoting their common interests, identify the most promising opportunities to encourage further innovation, develop worker skills, and address issues that affect productivity. The easy reach to specialized suppliers of raw materials, parts and components, machinery, skills and technology as well as other supporting services can enable enterprises to improve competitiveness. Cluster development not only improves the competitiveness of industry, rather it also acts as an instrument for alleviation of poverty, generation of sustainable employment, fostering innovation, enabling better, effective and

sustainable credit flow, thus addressing many of these challenges that MSME enterprises are currently facing in India. The following table lists six key benefits accruing to firms that operate as part of a Cluster.

Benefit	Explanation	Illustration
Collective Action of Enterprises	Policies enabling collective action allow enterprises better access to final customers A more cogent voice for lobbying the government Joint investment in infrastructure etc.	In Lucknow a textile cluster got together and invested INR 40CR in an Effluent Treatment Plant which would not have been possible if done individually. The Cluster is now a 'Zero Discharge' cluster, conforming to stipulations required to sell in certain international markets
Innovation and Productivity	A cluster allows companies to operate more productively in sourcing inputs; accessing information, and learning and adopting technology Clusters also play a vital role in a company's ongoing ability to innovate - Companies gain knowledge early about evolving technologies, component and machinery availability, servicing and marketing concepts	The TAMA cluster in Tokyo, Japan, has contributed to improving the linkages of its member units with universities for better R&D, set up facilitates for prototyping and testing, and shares knowledge on better management of enterprises, access to funds and new markets
Access to specialized information	Members of a cluster get access to extensive market, technical and competitive information accumulated within a cluster. In addition, personal relationships and community ties foster trust and facilitate the flow of information. These conditions make information more transferable.	In India, co-operation between OEM's, key suppliers and subcontractors in the auto-components space during the early 1990's increased on issues of quality which led to the adoption of TPM and TQM.
New business formation.	Many new companies grow up within an existing cluster. New suppliers proliferate within a cluster because a concentrated customer base lowers their risks and makes it easier for them to spot market opportunities Individuals working within a cluster can better perceive the gaps in products or services around which they can build businesses	In the Gurgaon automotive belt, many packaging and logistics units were setup when a need to transport components to OEM's was identified as a gap in the supply chain process.

Lower transaction costs and access to specialized supply base.	Clusters offer deep and specialized supplier base. Sourcing locally lowers transaction costs for producers. It minimizes the need for inventory, eliminates transportation costs and delays. Proximity also improves communication and post sales service, leading to overall production efficiency improvement.	By encouraging the setting up of primary and secondary ancillary units around auto manufacturing plants in Pune and Gurgaon, the whole ecosystem of manufacturers benefits from having the supply chain players present locally. Lead times in being able to work together and innovate has significantly reduced.
Benefits to the state and local authorities.	A clear benefit is the ability of industry, government, and education to work cooperatively to strengthen both state and regional economies. This leads to more efficient and effective use of public and private resources and helps a region or state develop strong and dynamic clusters. It also helps a region or state address critical issues such as human capital and workforce development, infrastructure planning and creation, and rural and community development.	In some clusters in China, the industry association takes over some responsibilities of the government like spurring local manufacturing, holding lectures on new technologies and manufacturing techniques, human resource development etc.

4. International analogs of good Cluster policies and practices

Many countries have successfully used Cluster policies to improve industrial output and increase the competitiveness of their enterprises, particularly the small and medium firms. A few such innovative policies and interventions in Japan, China, Korea and Brazil are chronicled below. India can learn a lot from these examples and selectively contextualize and apply relevant practices.

a) Cluster Policies in Japan

Following Japan's "lost decade" of the 1990s, the Japanese shifted their policy targets from the more traditional approach of encouraging production linkages (i.e. linkages across a supply chain) to developing technology and innovation linkages among members of a cluster.

Prior to the launch of the ICP (Industrial Cluster Program) and KCI (Knowledge Cluster Initiative) policies, the industrial agglomeration-focused policies prioritized the maintenance of efficiency in production networks. Policies were aimed at optimizing the business environment for "parts-processing" or sub-contracting SMEs. Under the new policies, more emphasis has been placed on "product-developing"

SMEs, which have research and design capabilities and which sell their original products directly to customers. This is a direct effort to increase Japanese companies' depth of value addition.

One major thrust of the policy is the **provision of credit and grants to stimulate R&D**. The Cluster Association receives funds from the Ministry of Education for various projects. Grants provided by METI (Ministry of Economy Trade and Industry) are subject to meticulous oversight and controls. METI also requires that milestones are achieved and documented for continued access to funds. Finally METI grants typically cover only one-third to one-half of the cost of a project. In addition to public grants, the inclusion of financial institutions in the member base of cluster associations has the bonus effect of spurring private sector lending to SMEs. Participation in cluster activities increases banks' trust in cluster members, and a symbiotic knowledge sharing relationship increases the cluster's awareness of the potential of different sectors.

R&D funding and grants have been useful in spurring innovation, but the Japanese realize that the key to sustainable success is the presence of an efficient mechanism for commercialization of IP and involvement of private capital. Hence, the government has recognized **24 Technology Licensing Organizations (TLOs)** based in universities or in cluster associations.

These TLOs facilitate the creation of revenue sharing contracts among universities, researchers, and private companies. They also act as the lead company in a consortium when competing for grants from METI or other funders. The typical royalty arrangement for IP is that 3% of revenues from product sales are shared between the researcher, the university and the TLO (40%, 30% and 30% respectively). This arrangement ensures that all involved parties are incentivized to work towards commercialization of research. The TAMA TLO is run by the association and is notable for having more autonomy than TLOs based in public universities. Thus, Tama TLO is highly "guided research"-oriented i.e. research projects will be started by the TLO's parent consortium only on the basis of industry needs. For smaller or newer companies, the TLO provides assistance with the documentation required for applying for grants. The Association also showcases the work done by its cluster units to larger enterprises so that they can enter into joint ventures and help fund R&D efforts of the TAMA units and universities.

Shared Testing and Research Facilities:
The Tokyo Metropolitan Research Institute (TIRI) is a research institute first started by the Tokyo Metropolitan Government and now run independently. The purpose of the institute is to provide technological support and access to high capital cost equipment to Small and Medium Enterprises in the area. TIRI has 5 facilities in the Tokyo area. The TAMA region Techno Plaza facility focuses on providing prototyping and testing equipment in one place to member firms of the TAMA cluster. The testing services include strength and fatiguing, LED optical quality and anechoic chamber testing. The prototyping services include 3D rapid prototyping, advanced composition analysis, temperature-humidity, vibration, impact, degradation and corrosion testing. There is also a separate sub-facility in the Techno Plaza for the development and testing of modern textiles. While the Techno Plaza facility is focused on testing and prototyping, the 4 other TIRI facilities have a broader scope which includes R&D and HR development as well. These facilities apply for grants from the government, research

foundations or companies and then conduct research either independently or in partnership with other universities/SMEs in the area. They also conduct technical seminars relating to new technology, industry trends and internationalization

While the Techno Plaza facility does not subsidize the costs associated with accessing its equipment, it still provides a valuable utility as it would be difficult and impractical for a single SME to purchase the millions of Yen worth of equipment that TIRI makes available. The Techno Plaza facility maintains a high utilization rate and is therefore a sustainable model. TIRI maintains an ongoing practice of regularly polling its member companies to ensure that existing equipment is serving its purpose and to determine whether new equipment purchases are necessary.

b) Cluster Policies in China

The key experiences of China's SEZs and industrial clusters can best be summarized as gradualism with an experimental approach; a strong commitment from central leadership and the active, pragmatic facilitation of the state. It is also characterized by broad institutional autonomy, recognizing the importance of preferential policies, rigorous benchmarking, monitoring, and competition.

A crosscutting theme across special economic zones and industrial clusters in China is the independence afforded to the local administrative body. **SEZs tend to have an independent committee that has complete control over economic planning, pricing, labor wages, business management, and foreign economic activities.** The 'township governments' that manage other industrial clusters, also have significant powers in terms of taxation and market regulation. The SEZs also lead the way in policy experimentation sharing their experiences with rest of the country to build upon.

Another feature that stood out in Chinese clusters was the presence of **active industry associations**. They bridge the gap between government and private enterprise. In most cases, these associations are quasi-government bodies being led by a govt. appointed or a party nominated secretary. In some clusters, the industry association would take over some responsibilities of the government like publicizing the regional brand, holding lectures on new techniques and equipment and inviting delegations from developed countries.

Key Lessons:

The success of Chinese industrial clusters is inseparable from local governments' strong support and nurturing. This support often come during the middle or later stages when the clusters have demonstrated their potential. The prerequisite for this support is however a capable, invested and powerful civil society at the local government level and the administrative efficiency in the governance apparatus.

> *Upgrading clusters through Infrastructure investment*
> Local governments in China have tried to build a specialized market or industrial park to facilitate business activities. Such a market brings suppliers, producers, sellers, and buyers

together and helps build the forward and backward linkages, thus greatly facilitating the scaling up of the clusters. For example, in Wenzhou, the municipal government invested RMB 557 million to build an industrial zone—the "Chinese Shoe Capital"—in Shuangyu Town Lu Cheng City, a large industrial complex integrating technological training, trading, testing, production, information services, and shoe-related cultural exhibitions.

Investing in skilled labor and technology
Since majority of the clusters in China are labor intensive with little innovation capacity, the local governments considered it worthwhile to invest directly into innovation and skill development. In
Guangdong since 2000, the provincial government has invested RMB 300,000 in each specialized town, with matching funds from local governments, to build a public technology innovation center (TIC) to support the clusters' innovation and technology activities.

Preferential policies and financial support
To attract qualified enterprises to the clusters, local governments often offer certain incentives, including desirable land, tax reduction or exemption, and access to credits and loans. In the Puyuan sweater cluster, the local government set up an industrial park and granted preferential land, tax, and credit policies to attract enterprises with famous brands to locate in the cluster.

Branding cluster and Regulating Quality
Local governments in China often enact specific regulations, especially those related to investment type, product quality, and standards, to ensure that the products made in the clusters have a market future. They simultaneously invest in branding the cluster products to the rest of the world. This two pronged approach ensures that their get maximum bang for their buck. In the 1980s, Wenzhou shoes experienced a rapid expansion of quantity without quality; as a result, they offered low prices but suffered from a bad reputation. To correct this problem, the municipal government issued strict regulations and quality standards for Wenzhou shoes and helped firms develop branded products.

c) Cluster Policies in Korea
Korea's rapid economic growth and catching up with the OECD countries in 70s and 80s is characterized by sustained technological innovation and trade liberalization. Industrial clusters played an important role in this and account for 72% of exports, 59% of production, 15% of business entities and 43% of employment in the manufacturing industry (as of 2008). Korea's rapid economic growth began in the 1960s when the first Five Year Economic Development Plan was implemented. Over the years, the development and growth of its industrial parks was characterized by the overarching goals of the National Industrial Plans.

At the end of 2009, the number of industrial parks was 815 and strengthening of competitiveness of existing industrial parks emerged as a more important challenge for the industrial location policy than

creating new parks. This led to the ICCP program by KICOX (Korea Industrial Cluster Corporation) and Innopolis.

ICCP (Industrial Complex Cluster Program)
Most of the industrial clusters in Korea were just agglomerations and not equipped with sufficient R&D. As a result, Korean clusters were falling behind in competitiveness. Specifically, the ICCP has focused on complementing research functions to current industrial complexes including consolidating open networks (industry university-institutes etc.), reinforcing R&D capabilities, enhancing inter-cluster exchange and collaboration, and improving the living and working conditions. A total of $280 Bn were spent by the government on the program in its first 5 years starting 2005.

Innopolis
Innopolis are defined as specially designated clusters/ regions in Korea that have been set aside in accordance with the Special Act. In this special global innovation cluster, efforts are ongoing to achieve a virtuous circle in business where R&D, technology industrialization and reinvestment activities reinforce each other. So far, there are 3 Innopolis in Korea each with its own unique vision.

The focus of cluster policies in Korea has increasingly moved towards increasing productivity through innovation, increasing collaboration through knowledge sharing and encouraging entrepreneurship.

Key Lessons
Region based Management of Clusters
The industrial clusters in Korea are managed by KICOX (Korea Industrial Complex Corporation), which reports to the Ministry of Knowledge Economy. The country is divided into 7 regions each having a Pan-regional Planning and Coordination Department which works closely with the various dedicated Cluster Development Agencies.

Fostering Innovation through collaboration
Industrial clusters in Korea have benefitted greatly from increased ties with Universities and other research organizations. Under the ICCP, KICOX has encouraged collaboration through small size industry-university alliances, supported projects to cope with difficulties, and provided access to experts.
There have been many cases of technology innovation where new technologies of university labs are transferred to businesses and commercialized. Korea Marine University, Busan National University and Pukyung National University and examples of universities working directly with clusters.

Knowledge Sharing and Cooperation:
The Korean government has setup 'ecluster', an online cluster based information sharing portal, for clusters to share best practices with each other. This has led to increased collaboration

between clusters from different regions tackling similar issues. In addition, the government has entered into a number of alliances and signed MOUs with cluster organizations in other countries. There is much ongoing collaboration with Germany due to their strong business relations and export driven economies focussed on technological innovation.

Focus on SMEs and Entrepreneurship:

The government is taking steps to encourage SMEs and entrepreneurs as opposed to the traditional Chaebols. They did this by reforming the tax code, changing bankruptcy laws and making high speed broadband widely available. The government is also working hard at changing the perception of startups that are still considered to be secondary to working to Chaebols. Entrepreneurs are being invited to major events and being given a lot of media exposure to change the mindset of people.

Increased exposure to global markets:

Instead of assisting large enterprises, the government its focusing its marketing efforts on increasing the exposure of SMEs and other upcoming technologies to foreign markets. There is an increased focus on multilateral overseas marketing so companies can deal directly with foreign buyers. Reports are written and shared overseas and exhibitions held domestically and overseas.

d) Cluster Policies in Brazil

In 2011, with a per capita GDP of approximately $12,000, Brazil is a middle income country faced with the daunting task of upgrading its manufacturing value adds through largely technological advancement. As noted, Brazil's abundant natural resource endowment is a principal driver in the country's economy. The geographic dispersion of natural resources is such that they usually create the necessary factor conditions for clustering of downstream industry around the resource. Thus the case for cluster based policies is especially important in Brazil.

In 2004 the federal government, recognizing the need for such policies, brought cluster management under the aegis of the Ministry of Development, Industry and Foreign Trade (MDIC). The MDIC proceeded to set up a standing working group to develop best practices – the GTP-APL - that is chaired by the MDIC, and has representatives from state and nongovernmental agencies.

Small Business Cluster Administration

One notable non-governmental organization is SABRAE, a government sponsored not for profit organization, which is a principal actor in coordinating the development of Micro and Small businesses in Brazil. Micro and Small Businesses account for over 99% of all enterprises in Brazil and employ in excess of 28 million Brazilians, and as such is an important pillar of the Brazilian economy.

An expansive and decentralized organization, SABRAE is represented in all of the country's states and federal districts through 750 point of service outlets. The guidelines and priorities for the organization are set nationally, but local units are tasked with developing local actions appropriate to their region.

Cluster Policies

The primary focus of the organization appears to be an emphasis on collective action and knowledge dissemination. By organizing local cooperative association that can assess and lobby for the collective interests of enterprises in the region, SABRAE attempts to overcome market failure that arise from disparate small participants.

Key Lessons

Collective action of enterprises

Small and micro enterprises would most likely suffer from the failures in market systems promulgated in the literature on economic agglomerations. In particular, policies enabling collective action may allow enterprises better access to final customers, a more cogent voice for lobbying government, joint investment in infrastructure and so forth. The literature of clusters in Brazil would seem to confirm that small and micro enterprises clearly benefit from policies encouraging collective action.

Resource clusters

A natural resource endowment may serve as the initial impetus for the formation of an industrial cluster. However, the formation of a cluster does not appear to be a sufficient condition for further and continued development. Thus economic policies have been adopted that specifically target technological advancement and human resource development within resource clusters.

Key role for civil society

The most efficacious cluster initiatives invariably involve an empowered civil society organizations. The origins of the organizations may vary, but each organization appears to share the common characteristics that they are i) situated locally ii) broadly representative of the cluster participants iii) long standing members of the community iv) empowered and appropriately financed to represent the cluster's interests.

5. A Cluster Strategy for India

As observed in the preceding pages, many countries have deliberately nurtured and developed Clusters to become productive units that contribute significantly in volume (GDP) and value (jobs, innovation) to the country's economy. Two major lessons for India that surface are:

(i) Data Collection and Cluster Mapping
The first step for India to approach reforming Clusters must be to engage private and public leaders to produce an economy-wide map that shows cluster locations and their linkages with the wider economy. The aim is to understand actual cluster behavior and performance. In developed countries where data is available at the cluster, sub-cluster and firm levels, actual linkages within and between clusters are tracked through detailed analyses of their sourcing and selling behaviors as well as their business alliances. This analysis then allows the mapping of clusters across geographies, indicating the locations and perimeters of the given clusters.

(ii) Knowledge sharing and collaboration
There is a strong emphasis in Brazil and particularly, in Japan and Korea, to encourage collaboration between clusters enterprises, universities, research institutes and foreign cluster bodies in order to spur innovation and growth. This has been made possible through the presence of strong universities and researchers in the countries. However, the government has taken steps such as setting up knowledge management systems (e-cluster in Korea, TLO's in Japan), revising financial incentives for universities and researchers, and actively pursuing MOU signings with foreign entities to further enable collaboration.

Traditionally, all the innovation in Korea was either imported or through large conglomerates. By making 'engagement with industry' an evaluation criterion for professors, by enabling movement of personnel between universities and industry, and by giving universities the rights to jointly own patents that are funded by industry, Korea has enabled greater university involvement in industry research. Brazil too has enabled university-industry collaboration mechanisms by setting up dedicated incubation centers and grants and Japan set up the Technology Licensing Office to foster Industry-Corporate partnership in R&D.

Efforts such as these have resulted in great innovation (in the form of patents, R&D spend) and thus increased competitiveness of clusters globally. Herein lies an important learning for India, which has a stronger network of universities, and with the right enabling mechanisms could increase knowledge sharing across the board for the benefit of clusters.

However, adopting the international models in India presents certain challenges. These include the lack of theoretical research on the discipline of cluster management in the Indian context, relatively less participation by academic institutions in cluster development research, low degree of maturity of a majority of Cluster Management Associations, low penetration of ICT (Information Communication

Technologies) amongst cluster management organizations, and the relatively large number of agencies / institutions across industries and geographies which are working in the area of cluster management.

Recognizing this, in order to improve the state of Cluster management and performance in India, a holistic solution is required that acts on the many challenges facing Clusters are various levels, viz: Challenges at the Cluster unit level; Cluster aggregate level; Government departments and other agencies involved in Cluster work.

Over the course of the last year, the Planning Commission has consulted wide and deep with experts, govt. officials, industry and cluster units to develop the approach for systematic improvement in Cluster management and coordination. This three-pronged strategy includes:
1) Setting up a Cluster Stimulation Cell
2) 'FACTS Framework' of Cluster performance measurement
3) Cluster Competitiveness Index

5.1 Cluster Stimulation Cell

The CSC would be a central coordination body tasked with knowledge creation, capture and dissemination. The key objective for the CSC would be the creation of a knowledge repository related to cluster profiles, frameworks for measuring cluster performance and content to improve cluster competitiveness. Also, it should be able to disseminate this knowledge through appropriate platforms to various cluster related agencies. Additionally, it may undertake the task of coordinating and achieving collaboration amongst various agencies - government and non-government - with stakes in Cluster development. The CSC would refrain from directly intervening at the cluster level and would work through existing agencies to achieve the objectives of improved cluster (unit) performance indirectly.

Owing to the large number of clusters in the country, the best way to reach the cluster units would be through the Cluster Management Associations, or Cluster Associations, in short. However most clusters do not have mature, professional representation and this is likely to be a key challenge for the CSC. Additionally, disseminating knowledge through ICT platforms, as is the practice internationally, may not work in India due to low penetration levels of ICT platforms. At the same time, simple ICT solutions like websites and emails are the cheapest and quickest ways to reach the large number of clusters and various intervention agencies.

The CSC would have the following objectives:

1. Improving the competitiveness of Clusters in India by improving the state of performance of cluster units by: building awareness of latest relevant technologies, better access to finance, improved utilization and training of manpower, access to new markets and knowledge of best practices in analogous clusters.

2. Promote collaboration among various Cluster related agencies by building collaboration platforms and knowledge networks
3. Improve the state of "Cluster Management" in the country by creating, sourcing and disseminating literature relevant to this end

These objectives may be achieved by undertaking the following distinct activities:

1	Cluster Mapping / Profiling	Creating underlying framework and definitions for mapping of clusters, cluster profiles and performance data.
2	Research and Analysis	Codify existing research and information to be able to share with Cluster development related agencies. Additionally undertake independent research for creation of theoretical frameworks and toolkits.
3	Collaboration with cluster related organizations	Build collaboration platform for cluster related organizations to be able to better align and direct cluster interventions and exchange of best practices. This can be ideally achieved through an online platform supported by other offline activities like events.
4	Supporting collaboration / knowledge sharing across clusters	Facilitate sharing of management practices among Cluster managers and create platforms for Cluster Managers and associations to interact. This activity is towards achieving the goal of improving the "Cluster Management" capabilities. It is understandable that the Clusters would not be willing to share competitive information related to processes, technology, customers and suppliers.
5	Policy Advisory related to Cluster Development	Provide policy advice to various ministries involved in Cluster development to help them design and improve their schemes. This activity would depend on the quality of Research and Analysis that the CSC is able to undertake and execute.
6	Performance Measurement / Quality Labeling	Create underlying framework for performance measurement or quality labeling of Clusters and Cluster Managers. The CSC should also coordinate this activity through partnerships. This is an important activity to be able to set in motion a continuous improvement orientation for Cluster management.

i. Cluster Mapping / Profiling

Cluster Mapping and Profiling would aim to create and maintain an up-to-date repository of cluster information in India and create an "Observatory" where this information is accessible. Such observatories exist in multiple countries. As a result, there is existing architecture that can be leveraged to gain a quick start on this activity. At the minimum, the Observatory may capture information related to the following:

- Geography and location of the Cluster and unique identifier (combinations of the name, location etc)
- Economic activity and Value Chain in the Cluster
- Quantitative Indicators such as number of units, employment, revenues, exports etc

- Organizations associated with the Cluster such as academic institutions, technology houses, export promotion councils, non-government bodies etc

- Profile of the Cluster Associations, members and their contact information.

- Details of interventions made in the past by various agencies, including any diagnostic reports or impact assessments.

The Forum for MSME Clusters (FMC) has created one such Cluster Observatory. It would be relatively easier to create the Observatory in terms of the technology and the framework, however getting the Clusters and related agencies to maintain the latest information is likely to be the key challenge and would require dedicated efforts and incentive mechanisms.

ii. Research and Analysis

There are multiple components of Research and Analysis that the CSC may choose to undertake. First is the creation of a repository of all existing and ongoing research, national and international in this area in a codified manner. This may include the diagnostic reports, implementation reports, impact assessment studies, case studies, made by implementation agencies and administrative ministries. In order that the repository is effective, this research needs to be codified and analyzed to be useful for future interventions.

Second, the CSC may undertake independent research in collaboration with other agencies to create frameworks, inform policy, design and refine schemes and programs. As an illustration, the research areas may be of the following nature:-

i. Diagnostic framework for assessment of issues impeding Cluster Performance and a Performance Evaluation Framework for Clusters

ii. Principles of active management of Clusters through professional Cluster management associations

iii. Relative impact of various kinds of interventions: soft vs. hard interventions, technology, finance, export linkages etc

iv. Social development within Clusters

v. Competitiveness studies at industry or geography level

Third, the CSC may undertake or collaborate with international organizations for broad-based research at an international level. However, this may not form the primary research agenda.

iii. Collaboration with Cluster Related Organizations

Bringing together all cluster-related organizations on one platform could be one of the most important objectives of the CSC. This collaboration would also go towards ensuring that the Cluster Mapping and Research and Analysis objectives of CSC are supported.

The creation of some or all of the below collaborative platforms would assist in achieving the above objective:-

- Internet Portal based platform which may be an extension of the Cluster Observatory or vice versa: This platform could serve the purpose of dissemination of best practices, research and analysis, latest emerging thinking amongst participants, and provide discussion forums to debate issues.

- Offline 'calendarized' events facilitated and coordinated by the CSC: These forums can form the basis for discussions around best practices, emerging research and sharing of ideas.

The above are only 'platform' suggestions, and the real success of this objective would be measured by the collaborations, joint projects and flow of ideas amongst the group on a regular basis. Examples of this are listed below:-

- Ministries coming together to discuss and review policies to improve policy making and scheme design. The underlying research and analysis of existing schemes, successes and failure of projects may be shared to refine interventions which are being made.

- Multiple agencies representing converging for "systems analysis" for a cluster can produce better solutions and coordination actions for a particular cluster.

- Exchange of experts and services amongst agencies

- Development, review and implementation support for frameworks which are laid out by the CSC. For example if a performance measurement framework for Clusters and Cluster Managers can be collaboratively developed and reviewed by various agencies who are part of the network.

The CSC may concentrate on developing the framework underlying such platforms, advise on its on-going governance and act as a coordinating agency.

iv. **Supporting Knowledge Dissemination and Collaboration Across Clusters**

The objective of achieving inter-cluster collaboration, though significant, is also the most resource intensive and difficult to achieve. There are multiple benefits to be derived from networking the clusters with each other so that they can share information and practices amongst themselves and benefit from the same. At the same time, connecting the dots within the cluster in terms of connecting units, cluster management associations, financing organizations, technology institutes, common procurement and sales organizations etc. may also have strong upsides.

A clear differentiation needs to be made here with regards to the subjects of collaboration or "practice sharing" amongst Clusters. Cluster participants would be reluctant, and understandably so to share or collaborate on first order issues related to business competitiveness. This would mean practices related to manufacturing processes, technology,

customer and supplier bases etc. However it is not unreasonable to expect Cluster Managers and association to connect with each other on second order issues related to "Cluster Management" practices, joint policy representations, etc. The analogy to this would be industry associations and bodies wherein such knowledge sharing and collaboration exists.

The CSC may restrict itself to the objective of connecting Cluster representatives amongst themselves. These representative may be the Cluster Management associations, SPV (Special Purpose Vehicles) managers or similar such bodies.

The primary tool for achieving these objectives may need to be a combination of an online platform, which is an extension of the Cluster Observatory, and through offline regional events and forums. The key challenge is to build incentives for collaborating for which active promotion of the available forums would be required, apart from providing and actively promoting tangible benefits of participation.

Some of the tangible benefits that could be offered to Cluster participants are as follows:-

- Thematic events around technology upgradation issues in a cluster, along with potential service providers, international agencies etc. Similar events for other issues related to financing, export linkages, skill development, infrastructure development, etc.

- Help lines for providing understanding, eligibility and effective utilization of central government and state government schemes and funds for clusters

All of the above are resource intensive and are best catered through partners and collaborators, with the CSC facilitating and providing the frameworks. In all events, the CSC may wish to avoid creating parallel initiatives in these areas and concern itself with providing.

v. Policy Advisory

The policy advisory objective is an important and "measurable" output that the CSC may undertake to advise various ministries running schemes and spending development funds towards improving cluster performance. We emphasize the importance of this activity due to its tangible nature and the level of direct impact it can have on improving the quality of cluster interventions in the country.

The data repository and the research and analysis outputs would be the underlying foundation for the CSC to advice on policy matters on a solicited basis. The CSC will also have to build expertise on the subject on its own or through partner networks.

However to begin with, the policy advice may have to be disseminated through publications and through the collaborative platforms to various stakeholders.

Some of the examples on Policy Advisory are as follows:-

- Advising Central Ministries on design of schemes and outlays

- Advising on relative merits and demerits of types of interventions e.g. Hard infrastructure vs. soft interventions like training programs, skill building initiatives, connectivity etc
- Advising on changes to implementation and monitoring mechanisms

vi. Performance Measurement / Quality Label

One of the levers used by the EU model is a performance measurement and quality labelling program for Cluster Managers. The performance measurement and goals for improvement are linked to availing of various schemes and incentives. As a result, there is a direct incentive for Cluster Managers to participate and provide information about key management practices and the performance of the cluster in order to get certified.

A similar approach may be adapted to the Indian context, wherein the CSC could provide the framework for evaluation of performance of Cluster Managers / associations and overall labelling program. The implementation of the same could be achieved through certifying partners who are trained and empanelled by the CSC directly or through a set of partners.

The longer term benefits would be in the form of encouraging Clusters to build formal and professionally staffed Cluster associations with a focus on continuous improvement of management practices. The approach is in line with, and supportive of the objective of creating representative organizations for each cluster, which demonstrate commitment towards continuous improvement.

Organization of the CSC:

In order to ensure that the CSC remains lean, it should adopt a partnership model and partner with various institutions and agencies for support in its activities. One of the key partnerships should be with one or multiple academic institutions which will support the CSC in its Research and Analysis activity. Principally, the CSC should look for partners to be able to access subject matter expertise, gain funding and sponsorships and augment its own management bandwidth. It is also important that the CSC be a neutral body having no affiliations with respect to industries, geographies and solutions – this is key to establish its credibility and to work impartially on its objectives.

In order to execute its work, the CSC may organize itself around the following capabilities / competencies:
- **Research and Advisory**: Expertise in the area of Clustering and aggregation, analytical abilities and respect and credibility with government agencies
- **Collaboration and Networking:** Ability to build networks, interact with multiple agencies, Indian and international

- **Project Management**: Project Management skills to undertake multiple initiatives, experience with leading new initiatives with help of multiple external partners.

5.2 Framework To Assess CompetiTiveness of Spatial Agglomerations (FACTS Framework)

There is a dearth of accurate and relevant data on the performance of Cluster units and on the area of Cluster development. Despite the efforts of many agencies – government and private – working in the field of Cluster development, there is no compendium or repository of reliable, comprehensive and insightful data on Clusters across the country. The primary reason for this is the lack of a coordinated and uniform framework to evaluate Clusters on.

Although, many agencies collect data on Clusters, there is a serious lack of both data integrity and depth. The only agency which collects data at a unit level in a district is the District Industries Centre (DIC). This data is only captured during registration of a firm and the data is updated on the basis of certain arbitrary estimations such as y-o-y increase in production by 10%.

Similar challenges exist with other sources of data -

- Lead Bank Data - Only high level numbers collated (manufacturing vs. trading and priority sector vs. non-priority sector)
- DGFT Data - Data collated at state level only
- Electricity Data - Cant be broken down by industry
- ASI Data – Organised sector data only, sampled at state level

There is also a huge gap between figures actually reported to the surveyors and the real figures. Firms typically underreport figures for the fear of audits or to avoid attention from the various government authorities. Many units availing benefits as SME's tend to underreport figures for the fear of losing the SME status along with the benefits.

Thus, limited availability of data at a district makes it extremely challenging to evaluate the need and impact of various initiatives. There is also limited amount of coordination among intervening agencies. Most agencies also have a solution bias like technology, financing, innovation etc. The theoretical research and framework underlying the design of these initiatives is inadequate. Moreover there is limited focus on documentation and dissemination of impact analysis, case studies and best practices.

Thus emerges the need to collect and analyze "real" data based on "on the ground" research under a common framework. FACTS (Framework To Assess CompetiTiveness of Spatial Agglomerations) is a tool developed to aid evaluation of an industrial clusters across different dimensions like competitiveness, infrastructure, technology, etc. The framework lies somewhere in the gap left between top level industrial statistics and a full blown cluster diagnostic study.

The FACTS framework aims to capture and assess data in a standardized and, simple and easy to understand format. With fields ranging from unit specific information on financials, output, workforce etc. to information on the role and activities of the Cluster (organization) as a whole, It will help policy makers and researchers in evaluating the competitiveness of Clusters and to identify areas of intervention required across the clusters.

Various public bodies in India (including state governments, central ministries and international development organizations) have been studying and supporting industrial clusters through different kinds of interventions. There was a need to develop a common language to aid collaboration and coordination amongst the various players. This framework is one of the first steps in developing that common language. The framework aims to form part of the CSC and work as a strategic tool to determine actions required at the cluster level to measure and improve competitiveness.

The framework is meant to be used to capture and assess data in a standardized format across various clusters. It is developed primarily for Indian policymakers and researchers to identify areas of intervention required across clusters, deploy the interventions, measure the effectiveness of such interventions and take appropriate action.

The immediate benefits of FACTS will be:

- Monitoring the implementation of projects and schemes, their impact and deriving learning.
- Documenting the impact of the scheme or project against the intended objectives.
- Ensuring that issues at the individual cluster level are diagnosed comprehensively, and appropriate schemes or interventions identified.
- Design of method and mode of interventions and monitoring their progress based on y-o-y collection and analysis of data.
- Comparison of similar clusters in one region against another and bringing to light the reasons for better/poor performance.

The framework will record information on the following parameters:

1) Details on Cluster profile (industries, number of units, Cluster GDP, Avg. wage etc.)
2) Cluster Competitiveness variables (share of local industry GDP, growth in production, patents etc.)
    - Hard Inputs (basic infra parameters, specialized infra parameters, raw material parameters, financial infra parameters etc.)
    - Soft Inputs (Tech and R&D, Human Capital, Marketing and branding, Quality standards etc.)
3) Cluster Unit information
4) Cluster Collective (Cluster Association parameters, collective action parameters etc.)
5) Regulations and policy related parameters (Doing Business indicators, policy incentives to innovate etc.)

5.3 Cluster Competitiveness Index

The Cluster Competitiveness Index (CCI) will evaluate and benchmark Clusters on various fields of performance and competitiveness, which will reveal the ability of Clusters to innovate and improve their productivity. It is an inter Cluster comparative index that will highlight how Clusters (aggregate of Cluster units) compare against others in similar sectors or geographies. To create the index, data on Cluster units and the Cluster will be recorded using the FACTS Framework. This information will be collected afresh and existing data from ASI or data with State Industrial Development Corporations will not be used for formulation of this index. Only those Clusters that meet the requisite criteria of having reliable data on its members, and which have an organized Cluster Association, will partake in this evaluation.

The benefit would be that this Index would serve as a compass for various agencies and govt. bodies to direct their efforts and funds to these Clusters to help them become better at areas that need attention, and leverage their current strengths. It would bring to light the strengths and good practices of certain Clusters that make them more productive and competitive – these can be then explored and emulated; and will also reveal the lacunae and weaknesses in Clusters on various parameters – this is where State and Central bodies can direct and focus support.

Over time, the intention is that we create a movement where Clusters start becoming organized, share data and communicate transparently on key parameters and become aware of their peer groups and their levels of progress. In effect, this would raise the bar on various parameters of technology absorption, skilling manpower, improved financing and smarter marketing. Awareness of latest trends, technologies and practices will proliferate amongst the CCI linked Clusters and there would be continuous incentive to benchmark, measure and improve their levels of performance on many fronts impacting their competitiveness and productivity.

6. Implementing the Strategy

To implement the recommendations outlined above, certain partnerships and collaborations needs to be formed, roles and responsibilities assigned and a core team of managers recruited to coordinate all the activities. Detailed below is the plan for the three pillars of Cluster development:

1) Cluster Stimulation Cell

The CSC would undertake many activities related to improving Cluster management and increasing the productivity of Cluster units. These activities can be classified under four key themes:

S.No.	Category	Activities
1	**Data and Knowledge Support**	• Cluster mapping/profiling (FACTS framework) • Research and Analysis
2	**Advisory services**	• Policy advisory and advocacy • Consultancy on Cluster performance improvement
3	**Performance Measurement**	• FACTS Framework • Cluster Competitive Index
4	**Networking and Collaboration**	• With other Cluster related organizations • With content creation bodies (academia) • International linkages • Online platform

For performing all this work, the CSC needs internal as well as external resources. It would need a core team working on managing the many relationships it would have with other agencies and ensuring that the CSC's activities are coordinated and delivered as planned. Following is the configuration of resources and web of partnerships that will enable CSC to function:

- **A core team of coordinators (managerial bandwidth)**
  The CSC will require a staff of 6-8 full time professionals to manage the 4 distinct set of activities that it must perform. They would act as coordinators and project managers who plan, execute and oversee various tasks related to each CSC activity. These professionals can be managers seconded from the private sector, or from the civil services, or on deputation from Industry Associations etc.

- **A network of knowledge developers and contributors**
  Academic institutions, researchers, policy think tanks, Industry associations, cluster associations all would form part of this network that contributes knowledge, case studies, management principles and practices to improve the quality of cluster management and improve its performance. The Core team members will need to model a system of continuous interaction with these bodies, a method of creating and

recording cluster related knowledge and forums for exchanging ideas (like UNDP's "Solution Exchange").

- **Partner agencies for data collection and analysis**
  The nature of the data required to be collected is mainly of cluster performance and competitiveness. Two kinds of agencies are required: few that administer the FACTS framework and one that deploys and manages the Cluster Competitiveness Index. Also, agencies like FMC would be required to maintain the database of information on Clusters. Finally, firms like Opera Solutions can help with simplifying with data analysis and making it more versatile to facilitate spotting of intervention areas and aid in decision making.

- **Team of consultants for improving Cluster performance (subject matter experts)**
  For focused intervention at Clusters, 'Consultants' will be required to be commissioned who would act as counselors and mentors to the Clusters to overhaul their capabilities for better Cluster management, workforce development and enterprise performance. Certain advisory services would be required from time to time – could be on tax and legal matters, or on skill development, or on policy advocacy issues.

The following chart details the scope of activities and potential partners with whom the CSC can collaborate to proceed with its objectives.

		Objectives / Activities	Potential Partner Organization	Potential Partnership Model
WAVE I	I	**Research & Analysis**	• Educational Institutions / Universities (e.g. IIMs, IITs)	• Tie-up to augment research bandwidth, and access research frameworks and methodology
	II	**Collaboration with cluster related organizations**	• National Manufacturing Competitiveness Council (NMCC)	• Sponsorship and day to day governance to be provided by Partner, CSC to bring in underlying framework
	III	**Policy advisory**	• Consulting organizations, NGO (e.g. FISME)	• Partner brings in expertise and analytical bandwidth
WAVE II	IV	**Online platform** *(for inter cluster cooperation)*	• Ministry of MSME, NMCC	• Similar to II
	V	**Cluster Mapping / Profiling**	• Forum for MSME Competitiveness, International Collaboration (EU)	• CSC provides underlying framework, partners contribute with day to day governance as well as subject matter expertise
	VI	**Performance management / certification**	• Standards Bodies, CII, Ministries	• Partners provide sponsorship and project management, CSC provides framework and governance

2) FACTS Framework:

There is a dearth of accurate and relevant data on the performance of Cluster units and on the area of Cluster development. Despite the efforts of many agencies – government and private – working in the field of Cluster development, there is no compendium or repository of reliable, comprehensive and insightful data on Clusters across the country. The primary reason for this is the lack of a coordinated and uniform framework to evaluate Clusters on.

The FACTS framework aims to capture and assess data in a standardized and simple format. With fields ranging from unit specific information on financials, output, workforce etc. to information on the role and activities of the Cluster (organization) as a whole, It will help policy makers and researchers in evaluating the competitiveness of Clusters and identify areas of intervention.

Agencies involved in recording Cluster data:

Currently, agencies like GIZ, IL&FS, FMC, UNIDO, Cluster Kraft etc. are involved in a supporting few cluster initiatives. The efforts of these agencies are inherently guided by their own agendas for e.g. IL&FS aims to provide infrastructure support to clusters which satisfies their own business objectives. Naturally, the data collected by these agencies leans towards these objectives and cannot be easily compared with data of other clusters. . Government agencies such as DIC collect data at a unit level; however this data is collected only during the time of the registration of the firm and does not cover all aspects which are important to measure the well being of a cluster over a period of time.

ASI (Annual Survey of Industries) is the only regularly updated set of data which collates information at a unit level, however ASI data is not completely reliable as 1) It is based on a sampling format 2) It is only collected for registered or organised units and 3) The data reported by most cluster units is inaccurate owing to their fear of being denied currently applicable sops and subsidies; this point has been highlighted in the Cluster Strategy Document.

Possible solutions:

1) With its vast pool of resources, a pan-India network and the official fiat to collect data on performance of industrial units, ASI is the ideal body to collect data at the cluster level. If the FACTS Framework is deployed by ASI under the guidance of the CSC, it can become a huge knowledge base which can be accessed by the various policy makers. Since ASI is already in the field and collecting data at a unit level, it won't be a resource constraint on them to take up the responsibility to collect data at a cluster level.

2) The other agencies which can deploy FACTS Framework for data collection of Clusters are: Ministry of MSME, Ministry of Textiles, Ministry of Small Scale Industries. Other quasi government and private institutions which support various clusters are: NiNC, UNIDO, GIZ, IL&FS and SIDBI. However all these bodies suffer from restricted access to Industries as they would only have access to industries/ clusters which come under their purview or scope of work. That said, these ministries/agencies will play an integral role in the deployment of the FACTS framework as any and all efforts in the deployment of this common framework will assist the CSC in analyzing and offering recommendations and designing interventions.

3) Another option to deploy the FACTS framework is through an external research agency. This option however will require government or private funding as on the ground research will requires extensive use of manpower. The research model will also need to be sustainable and would need to be carried out annually. While this would represent an ideal way to go about this, considering the scale of the exercise and the recurrent nature of the task, the government will have to provision funds for instituting such an annual exercise. Instead of securing funding from any one department, it could be a collective from many government departments and also from multilateral institutions operating in this space.

3) Cluster Competitiveness Index

The development of the Cluster Competitiveness Index entails the following activities:

   i. Administration of the FACTS framework across Clusters
   ii. Creation of an econometric model for Cluster competitiveness
   iii. Interpreting the data and creation of the index
   iv. Analysis of findings and publishing the report

The capability for carrying out these activities lies within many consulting and data research firms. These agencies will need to undertake the complete gamut of activities outlined above. The chief reason of going in for data collection independently and not borrowing from other sources of cluster data (ASI, State DICs etc.) is that this data is the foundation of the CCI. If this data is challenged and found incorrect, the accuracy and credibility and CCI will come into question. Hence, data collection needs to be managed in-house by the agency creating the index.

Several firms like Monitor Group, Opera Solutions, Frost & Sullivan, PwC, Indicus Analytics etc. have expressed interest in taking this up. For guidance on creation of the methodology and index, senior economists from the World Bank Group have agreed to be part of the team.

To ensure that this is an annual exercise, a commercial arrangement needs to be made with the agency developing the CCI. For this, the government needs to provision funds. In addition to this, funds can also be sourced from certain multilateral institutions working in the field of Cluster development.

7. Annexure

Agencies in India working on Cluster programs and initiatives

Several institutions (Gov.t, Quasi Govt. and Private) in India are working on Cluster improvement programs across a variety of fields: improving access to technology, facilitating credit, workforce capacity building, infrastructure, innovation etc. The major ones being:

I. Central Government bodies

- **Ministry of Textiles**
  The Development Commissioner (Handicrafts), Government of India, has launched the Baba Sahab Ambedkar Hastshilp Vikas Yojana Scheme (AHVY) which aims at promoting Indian handicrafts by developing artisans clusters into professionally managed and self reliant community enterprises on the principles of effective member participation and mutual cooperation.

  The Textiles Committee has elaborated a National Program for capacity building of textile SMEs. The methodology and approach for this program are drawn from experiences of UNIDO, Textiles Committee and other Central and State government institutions in implementation of cluster based initiatives. 23 clusters have been identified for implementation under this program. In 2 of these clusters, the Textiles Committee is collaborating with UNIDO.

- **Ministry of Micro, Small and Medium Enterprises (MSME)**
  The Ministry of MSME has adopted the cluster development approach as a key strategy for enhancing the productivity and competitiveness as well as capacity building of Micro and Small Enterprises (MSEs) and their collectives in the country

  Objectives of the Scheme:
  - To support the sustainability and growth of MSEs by addressing common issues such as improvement of technology, skills and quality, market access, access to capital, etc.

- To build capacity of MSEs for common supportive action through formation of self-help groups, consortia, up gradation of associations, etc.
- To create/upgrade infrastructural facilities in the new/existing industrial areas/ clusters of MSEs.
- To set up common facility centres (for testing, training centre, raw material depot, effluent treatment, complementing production processes, etc).

- **Department of Science & Technology, Ministry of Science & Technology**
  The Department of Science & Technology (DST) was established in May 1971 with the objective of promoting new areas of Science & Technology and to play the role of a nodal department for organising, coordinating and promoting S&T activities in the country. Together with UNIDO, DST is presently implementing cluster development initiatives in 2 clusters.

II. **National Support Institutions (Quasi-Govt.)**

- **Small Industries Development Bank of India (SIDBI)**
  SIDBI's cluster development work started in 1991 and has intervened in around 30 clusters till date. SIDBI's mandate is to work for technology up-gradation in clusters' small and medium enterprises. The cluster development program is implemented through external agencies and consulting firms with the collaboration of the local office of SIDBI.

- **National Innovation Council (NInC) and Council of Scientific and Industrial Research (CSIR)**
  To diffuse innovation culture, NInC in partnership with Council of Scientific and Industrial Research (CSIR) is promoting Cluster Innovation Centres (CICs) in industry clusters. This centre will act as a networking hub/arm of the cluster, forge linkages between various stakeholders, initiate and assist innovation activities acting as catalysts and facilitators

- **State Bank of India (SBI) UPTECH Program**
  Project UPTECH takes up clusters through an elaborate process that initially involved primarily technology oriented interventions. Work in 12 clusters has so far been completed and is still going on in 5 more

- **National Bank for Agriculture & Rural Development (NABARD)**

Its objective is to strengthen existing clusters towards sustainable competitive advantage through technology upgradation/ transfer, raw material access, skill development, managerial inputs, credit and market support. Out of the 51 clusters identified so far NABARD's promotional programmes have been launched in 35 clusters in 17 States.

III. Other Institutions

- **UNIDO Cluster Development Program**
  UNIDO aims to develop capabilities at both the local and the national levels so to promote SSI networking and cluster development. This is done by:
  - Assessing the competitiveness and organization of SSI clusters
  - Assisting the clusters' actors (suppliers of raw materials, plant & machinery, buyers of SSI goods and services, testing laboratories and research agencies, industrial associations, training institutions, local government, financial institutions) in developing a common vision of what their cluster can achieve in national as well as international markets.
  - Building up (through training, workshops and study tours), the capacity of cluster actors to implement such a vision.
  - Providing advisory services at the policy level.

  The project is implemented through a Focal Point based in New Delhi, currently comprising of four national consultants. These consultants have been trained by UNIDO in the principles of cluster re-structuring and networking. At the cluster level, the Focal Point forges working partnerships with one or more institutions (NGOs, producers' consortia/associations, providers of business development services).This is done to facilitate the implementation of various initiatives and to pass on the competence acquired as a result of UNIDO training and hands-on experience gained in the pilot cluster. The programme also draws strength through collaborative support from national developmental institutions like Small Industries Development Bank of India (SIDBI) and more recently office of the Development Commissioner Small Scale Industry (DCSSI)

- **German Society for International Cooperation (GIZ)**
  GIZ uses the Cluster approach to instill responsible business behavior in groups of MSMEs, by demonstrating how such practices are directly linked to the profitability of the firms and clusters. The project is currently working with three clusters consisting of business member organizations representing 100 energy-intensive

steel foundries. It is helping them to integrate CSR into their core business practices. The firms have begun implementing a range of simple measures, such as energy efficiency and safe and hygienic working conditions. In collaboration with GIZ's "MSME Umbrella Program", the number of clusters is now set to rise to 18, involving 25 business member organizations.

- **IL&FS**
  IL&FS Education along with its subsidiary IL&FS Clusters, develops modern industrial clusters in textiles, pharmaceutical, leather, light engineering, agro and food processing and other industry verticals across India. This spans the entire delivery cycle of industrial park development from concept to commissioning for developing micro, small and medium enterprises (MSMEs), employing a cluster based Public Private Partnership (PPP) model to enable them become globally competitive

- **United Nations Development Program (UNDP)**
  UNDP has been working for many years in various areas of intervention in Clusters, with a focus building capacity for better welfare of workers.

- **Federation of Indian Micro and Small & Medium Enterprises (FISME)**
  FISME represents the interests and needs of the Micro, Small and Medium sized enterprises that are found mostly in Clusters. They are focused on polices for promotion and growth of these enterprises and are the most prominent national chamber for the MSME industrial units.

- **ClusterKraft**
  Delhi based consultancy firm with the key role is to increase awareness in the area of the challenges faced by MSME. The major tools used to achieve this are awareness generation, training, advocacy, breaking of isolation of cluster based MSMEs' and most importantly, forging synergic growth processes of the cluster with that of the sectoral global changes.

- **Rajasthan Chamber of Commerce and Industry (RCCI)**
  The RCCI has taken activities in 16 clusters. Cluster related intervention objectives are:
  - To develop an effective institutional framework
  - To develop and modernise textile and gem and jewellery sub-sectors
  - To conduct need based training programs for small enterprises
  - To promote the products of SMEs, nationally as well as internationally

- To focus on environmentally sustainable development process in the region

The State governments which have started cluster development initiatives are Andhra Pradesh, Gujarat, Kerala, Madhya Pradesh and Tamil Nadu.

The following table gives a snapshot of which agency is involved in what area of Cluster development:

Area of Work-> Agency	Access to Technology	Access to New Markets	Access to Easy Finance	Capability Building	Infrastructure	Innovation & Best Practices
Central Government						
Ministry of Small Scale Industries	√	√	√	√	√	√
Ministry of Textiles	√	√	√	√	√	√
Ministry of (MSME)	√	√	√	√	√	√
Ministry of Science & Technology	√					
National Support Institutions						
SIDBI	√		√			
NInC & CSIR						√
SBI UPTECH	√					
NABARD	√	√	√	√	√	
Other Institutes						
UNIDO	√	√	√	√	√	√
GIZ						√
IL&FS	√	√	√	√	√	√
UNDP				√		
FISME	√	√	√	√	√	√
ClusterKraft		√		√	√	
RCCI	√	√		√		