FOUNDATION FOR MSME CLUSTERS

Policy And Status Paper On Cluster Development In India

Acknowledgments

Purpose of this document is to take stock of the developments that have taken place in the arena of cluster development and suggest inputs to a policy framework for promotion of cluster based MSME development in India. The document draws heavily from a wealth of secondary literature and benefited immensely from the documents shared by several practitioners as well as insights obtained from a number of unpublished sources. Several case studies also provided rich source of input. However, what was immensely useful was the view point of practitioners, policy institutions and cluster stakeholders that could not have been captured through available literature. We are sincerely thankful to them for sparing their valuable time during one-to-one discussion.

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The authors bear all responsibility for facts presented, errors and omissions as well as value judgments passed, if any.

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Abbreviations

AHVY	Baba Saheb Ambedkar Hastshilp Vikas Yojana
ARI	Agro and Rural Industries
AYUSH	Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy
BDS	Business Development Service
BIDASS	BHEL industrial Development and Service Society
BIS	Bureau of Indian Standards
BMO	Business Membership Organisation
BMTMN	Bangalore Machine Tool Manufacturers' Network
BVS	Bunkar Vikas Sansthan
CDA/CDE	Cluster Development Agent/ Cluster Development Executive
CDP	Cluster Development Programme
CEO	Chief Executive Officer
CERTEC	Centro de Recursos y Tecnologìa
CFC	Common Facility Centre
CGCRI	Central Glass and Ceramic Research Institute
CII	Confederation of Indian Industry
CLRI	Central Leather Research Institute
CMTI	Central Manufacturing Technology Institute
CORE	Cluster of Rourkela Engineering Enterprise
COWMA	Coimbatore Wet Grinders and Accessories Manufacturers Association
CSR	Corporate Social Responsibility
DC (Handicrafts)	Development Commissioner (Handicrafts)
DC (MSME)	Development Commissioner (Micro, Small and Medium Enterprises)
DC(Handlooms)	Development Commissioner(Handlooms)
DE	Diesel Engine
DIC	District Industries Centre
DIPP	Department of Industrial Policy and Promotion
DST	Department of Science & Technology
EDI	Entrepreneurship Development Institute of India
FICCI	Federation of Indian Chambers of Commerce & Industry
FISME	Federation of Indian Small & Medium Enterprises
GI	Geographical Indication Act
GTZ	Gasellschaft for Technische Zusammenarbeit
HACCP	Hazard Analysis and Critical Control Points
HRD	Human Resource Development
ICT	Information and Communication Technologies
IHCDP	Integrated Handloom Cluster Development Programme
IIUS	Industrial Infrastructure Upgradation Scheme
ILO	International Labour Organisation
IMTMA	Indian Machine Tool Manufacturers' Association
KBK	Kalahandi-Bolangir-Koraput
KRMC	Kalady Rice Millers Consortium

M&E	Monitoring and Evaluation
ME	Micro Enterprise
MCGF	Mutual Credit Guarantee Fund
MFI	Micro Finance Institutions
MOU	Memorandum of Understanding
MSE	Micro and Small Enterprises
MSECDP	Micro Small Enterprises Cluster Development Programme
MSME	Micro Small and Medium Enterprises
MSME, DI	Micro Small and Medium Enterprises, Development Institute
NABARD	National Bank for Agriculture and Rural Development
NEDFi	North Eastern Development Finance Corporation Ltd.
NER	North East Region
NGO	Non-Governmental Organisations
NID	National Institute of Design
NIFT	National Institute of Fashion Technology
NIMSME	National Institute for Micro, Small and Medium Enterprises
NMCC	National Manufacturing Competitiveness Council
NMDFC	National Minority Development Finance Corporation
NPRI	National Programme for Rural Industrialisation
NSIC	National Small Industries Corporation
OECD	Organisation for Economic Co-operation and Development
PRA	Participatory Rural Appraisal
PRI	Panchayati Raj Institution
R&D	Research and Development
REA	Rajkot Engineering Association
RO	Resource Organisation
RUDA	Rural Non-Farm Development Agency
S&T	Science & Technology
SBI	State Bank of India
SFURTI	Scheme of Fund for Regeneration of Traditional Industries
SGFI	Sports Goods Foundation of India
SHG	Self Help Group
SIDBI	Small Industries Development Bank of India
SITP	Scheme for Integrated Textile Park
SPV	Special Purpose Vehicle
SSI	Small Scale Industry
STPI	Software Technology Park of India
TC	Textiles Committee
TUP	Technology Upgradation Programme
UNIDO-CDP	United Nations Industrial Development Organisation - Cluster Development Programme, India
USAID	United States Agency for International Development
VAT	Value added Tax

Executive Summary

1. **Cluster Development is Widespread:** Across the globe in at least fifty developed and transition economies; micro, small and medium enterprises (MSMEs) producing same or similar range of products; have often been found to naturally co-exist in typical geographical locations - "clusters". While clusters have benefited from natural external economies; only those have excelled, where firms have gone for promotion of selective "active cooperation" or "targeted joint action" and also taken the benefits of linking to winner value chains within and outside the cluster. As a result clusters worldwide are being acknowledged as a strategic mechanism through which regions and nations can attain higher level of industrial development.

2. **Typology of clusters from a policy perspective:** In India, as per current estimates, there are over 6400 clusters. Agencies have come up with a range of definition of clusters by specifying a minimum number of units in a given measured location. However, from a policy perspective it makes sense to typify cluster by their broad challenges relevant for policy intervention. Accordingly, clusters in India can be classified into three broad categories, namely, high-tech clusters (very few at present) targeting innovation for existence, traditional manufacturing clusters (around 400 plus) targeting competitiveness and consequent employment responsibility and low-tech micro enterprise 'poverty intensive' clusters (around 6000) that have both employment as well as poverty implication.

3. **Global initiatives in cluster development:** Cluster development is primarily driven by public sector, with overall share in such efforts varying between 75 to 90 per cent, irrespective of the level of development of a country. While developed economies emphasise on promoting innovativeness in clusters, in developing countries stress is given on productivity and linking up with winner value chain partners. There is clear time framework of implementing a cluster initiative in most countries, although in many cases such programmes are carried out as a dynamic long-term process. A notable aspect of cluster initiatives in most countries has been the collaboration between ministries, other external agencies and private sector. Selection of clusters is done both as per priorities and judgment of the funding institution as also by self-selection through call for proposals or a combination. However, providing a blanket approach to leading or lagging region/dynamic or sinking clusters can be ineffective and dilute available resource and focus. Role of facilitators in promoting this process is also recognized. At the operational level, disappointment comes often due to insufficient funding and timeframe. Success is measured through a wide spectrum of parameters ranging from take up rates of project to number of jobs, spin-offs, innovations created, increased cooperation, ability to attract additional funds and specific goals per individual project.

4. **A decade of cluster development in India:** Policy recognition for clusters was first made in the Abid Hussain Committee Report (1997). This was followed up in several Budget Statements and recognition in the 11th Five Year Plan Approach document and culminated in the creation of the Expert Group of Ministers. During the last decade 24 schemes/ programmes have supported around 1358 clusters, of which 278 are traditional manufacturing and 1080 are micro enterprise clusters. The resource allocated for cluster development under the listed schemes of assistance is estimated at a cumulative of Rs 700 crores till 2006-07. It is estimated that 91.4% has been contributed by the Central

Government, 2.4 per cent by the State and the remaining 6.2 per cent by the techno-financial institutes and international organisations. The support has been highly driven by promotion of infrastructure (94 per cent). It is estimated that during the next 5 years resources worth Rs 4500 crores are likely to be invested(subject to various clearances) for cluster development. 80 percent of this amount will be for cluster infrastructure. A subjective evaluation of the Schemes based on stated areas of support shows that there is hardly any support for promotion of local institutional capacity and promotion of private sector led development. 86 per cent of the implementing agencies belong to the experience group of 1-2 cluster-years and 0.57 per cent have more than 50 cluster-years of experience. Similarly, 65.39 per cent of resource organizations have cluster experience of less than equal to 5 cluster-years.

5. **Suggestions for a Policy Framework:** Despite a very robust cluster based initiative in India, challenges remain in terms of defining a cluster, mapping clusters for policy need, cluster policy vision and its achievability conditions, broad areas of activity at the state, central and private sector level, etc. The following are suggested for a policy framework:

1. Ideally a cluster should be within an easily approachable distance for the local stakeholders thus providing room for developing mutual linkages and working trust. Naturally large clusters should not be sub-divided for implementation convenience.

2. State governments and institutions with specific areas of focus may draw up their own criteria to define clusters depending on the suitability in their context. Industrial classification along with local knowledge/intelligence should be combined to define a cluster.

3. While a cluster policy should help create optimum conditions to promote a cluster with particular reference to laggard clusters or under privileged stakeholders, it should simultaneously promote an enabling infrastructure to address mega challenges and utilise learning opportunities that can smoothen the process of delivery at a cluster level. Here, cluster activation be preferred over cluster creation, except for conditions where the local economy does not have any significantly important areas of economic activity, or the existing economy is dangerously linked to one or two sectors which may have an endangered future.

4. Accordingly, the proposed Vision for Cluster Policy is suggested as -*The Indian industrial and services sector economy develops into an inter-connected array of clusters with a strong & enabling all round environment around them to achieve higher levels of global competitiveness with inclusiveness and equity. Inclusiveness will be ensured by including the lagging clusters and supporting initiatives that not only ensure greater economic growth but also address adequately the social and environmental concerns.*

5. Again, data with respect to needs of clusters in terms of pollution, relocation, innovation, poverty alleviation, social responsibility, etc. as also level of cluster maturity is missing. Data with respect to services and knowledge intensive industries are not available. In order to encourage food processing clusters, the areas of specific agriculture products and horticulture products are also scanty. These need to be mapped for intervention.

6. Cluster level support is required for both 'soft' (e.g. marketing, training, network creation, BDS provision, benchmarking, productivity improvement areas) as well as 'hard' (cluster

specific infrastructure) intervention. In case of infrastructure, the amount of support varries on a case by case basis, whereas for soft intervention a support of Rs. 10 to 15 lakhs per cluster per year on an average is suggested. Besides, support is also required for programme management for implementing agencies, resource organisation and CDE.

7. Such cluster level support should be for a minimum of 3 years for traditional manufacturing clusters and 5 years for poverty intensive clusters.

8. Availability of finance does not seem to be a critical constraint. However given the magnitude of the number of clusters, matching fund will be required as per targeted number of clusters. Again, capacity building for creation of cluster related institutional infrastructure and undertaking of initiatives that promote synergy across various initiatives are desired for:

a) BDS development in marketing, technology, financial services, designing and management inputs

b) Environmental compliance

c) Skills assessment across various sectors

d) Capacity building of industry association

e) Creation of information database

f) Linking with benchmark clusters

g) Creation of new knowledge around cluster development frameworks

9. Develop a cadre of human resources to initiative cluster development. Also develop at least 8-10 national and 25-30 regional institutions to support the implementation of cluster based development initiatives.

10. All state governments should be prompted to go for cluster development and necessary policy creation.

11. Policy institutions should set up cluster cell and either deploy adequately trained personnel or hire expert institutions for continuous monitoring and evaluation to take quick corrective actions. Such M&E systems (for respective levels) should capture output and outcome at firm and cluster levels, impact at scheme level and overall achievement in creating appropriate institutional framework conditions as well as conditions for programme sustainability at the mega policy level.

12. At times there may be requirement for non-cluster specific infrastructure in development clusters in smaller towns or even in traditional manufacturing cluster. Here fund allocation needs to be done through multiple agencies after doing perspective planning.

13. National and state level initiatives are required to push public institutions to reach out to the clusters and customise knowledge and information delivery that can meet the required needs. Scope for provision of relevant information and knowledge through linkage with value chain partners also needs to be promoted.

14. The Central Government should strengthen cluster information base, enable knowledge sharing across states and institutions on best practices and methodologies, fund and monitor cluster initiatives, coordinate common programmes of technical assistance that cut across several clusters in different states and promote clusters to cooperate, undertake capacity building initiatives of regional development institutions, BDS providers, industry/ micro-enterprise based associations and regional resource institutions through largely public funding as also fund and coordinate measures for knowledge infusion across clusters within India and abroad through various schemes of assistance.

15. The state level governments should be responsible for coordinating implementation of clusters initiatives in their respective states through national and state level funding and draw state policy framework on clusters to ensure provision of funding support to supplement national resources to support cluster initiatives, enable knowledge sharing within the state across clusters on best practices and methodologies and also promote cluster to cluster learning at the state level. The state government should set up a separate cluster cell in the department and designate a nodal resource organisation to coordinate, support and monitor cluster initiatives in the state.

16. Among the private sector players, the mega non-cluster associations should go in for cluster development and cluster level associations should go in for various development initiatives in a cluster. Private sector players can also chip in to promote clusters as a part of their business generation initiatives - both as value chain partners as also for its own business promotion strategy. Semi-private and private technical institutions should also chip in by making cluster oriented programmes in training, R&D, etc.

CHAPTER 1

Clusters, their Relevance and Need for Policy

1.1 The concept and the context: why promote clusters?

At least since the mid 1980s, in both policy and academic circles, there is an increasing awareness across the globe regarding the contributions of micro, small and medium enterprises (MSMEs) towards economic development. These MSMEs have been instrumental in generating large scale employment, contributing towards rise in incomes of labour and returns to capital; and promoting regional development[1]. In fact, MSMEs are no longer seen as a transient phenomenon of dwindling importance of enterprises operating at a low scale. On the contrary, the increasing demand for technological and labour-use flexibility, which is the order of the day in many sectors, is more suitable to MSMEs rather than large integrated plants with relatively rigid managerial and production systems[2].

Clusters are found to be in plenty both in developed and transition economies.

It has also been recognized during the last two decades that, often MSMEs[3] producing a range of similar or same products are found to co-exist in typical geographical locations for decades and even centuries in many countries. This phenomenon is referred to as clustering of MSMEs. Such clusters are found to be in plenty both in developed and transition economies as shown in Table 1.1 below. A detailed list of clusters around the world appears as Annex 1.1.

That clusters could 'fuel' regional industrial growth through productivity rise has been observed in numerous cases (M. Clara:1995, DTI: 2004, Enright: 1998, World Development Report: 1999). Firms in cluster have shown higher productivity both in national as also international context as compared to their counterpart industries situated isolated and not in clusters. In India, ".... Micro and small enterprises (MSEs) have emerged as an important segment, providing resilience … in the post liberalisation period. .....Further consolidation of the restructuring process wherein shifting from... non-cluster to cluster units is associated with better productivity and growth. It is likely that these core activities tend to gravitate towards product and/or spatial clusters..." (Awasthi: 2004). Such happenings in clusters were also demonstrated at the international level too. A study by the Bank of Italy to quantify comparative advantages of firms located in clusters, referring to it as a "cluster effect", established higher efficiency of cluster

Table 1.1 Clusters in some Developed and Transition Economies (Other than India)

Sl no	Country	No. of clusters
	Developed Economies	
1	Denmark	19
2	France	95
3	Germany	31
4	Italy	199
5	Japan	18
6	Switzerland	13
7	U.K.	165
8	U.S.A.	152
	Transition Economies	
9	Bahrain	3
10	Bangladesh	23
11	Brazil	4
12	China	101
13	Iran	116
14	Kuwait	3
15	Mexico	7
16	Oman	24
17	Pakistan	43
18	Qatar	8
19	Saudi Arabia	21
20	Sri Lanka	15
21	Thailand	35
22	UAE	17

Note: List of clusters for the individual countries is no way exhaustive and is a function of the extent of data gathered by this study. Again, since data for India is quite exhaustive, we have shown it separately, lest it should bias the table.

Sources: (1) P. Bianchi, et.al. (1996) (2) http://www.lged-rein.org/solar/solar_sre_clustervill.htm (3) www.smeda.org.pk (4) www.ahan.org.pk (5) www.competitiveness.lk/ceramics.htm (6) Dr.Claas Van Der Linde (2002) (7) OECD 2007

firms as compared to similar firms not located in clusters through an econometric analysis of a sample of firms located in known clusters (Paniccia, et al: undated).

In addition, there exist numerous examples to indicate that collective action by clustered firms has not only led to improvement in product quality but also helped them in having access to larger markets (Clara: 1995, Schmitz: 1999, World Development: 1999). It has further been observed that, being clustered, MSMEs choose networking and collective action as a strategy to access market, credit, infrastructure, R&D, etc. which are required by individual units but cannot be obtained through individual efforts. Similarly, it will be easier for financial institutions to offer credit at the cluster level in a targeted fashion and with greater assurance of repayment.

Thus, there are strong cases for promotion of firms in a cluster, as a strategy for industrial development. Again, while at the enterprise level, a cluster might seem a place for purely private entrepreneurial activity, but from a policy perspective, various governments (national and sub-national), specialized institutes, service providers, academia and above all the consumers all have their specific role to play. In fact, "…..Governments and public authorities can no longer be viewed as impersonal, impartial guarantors of socially optimal outcomes. Like private institutions, they are operated by people who develop and cherish their special skills, interests and attitudes. Public institutions are present in most main areas when it comes to influencing clusters." (The Cluster Policies Whitebook: 2004; 2). Further, the ability of a cluster to relate to and 'operate' across markets and regions has been recognized as special attributes that facilitates flexibility. It is imperative that the policy strategy considers the variety of competencies of a range of stakeholders and their roles that could be relevant for clusters.

1.2 Advantage Clusters: Some basic principles

Passive economies of scale are omnipresent in a cluster, difference between performing and non-performing clusters are due to active economies of scale, derived through conscious collaboration.

In a cluster, MSMEs derive advantages that large firms usually get due to their size, through agglomeration economies that attract transporters, raw material and machinery suppliers, BDS providers, etc. to the cluster and also through knowledge spillovers and increased specialization (Marshall: 1890). Clusters also gain due to motivational effects that arise due to demanding customers, inter-firm rivalries and complementarities (Porter: 1990). Firms also gain due to low transaction cost because of the level of trust that is found in a cluster in general (OECD: 2007). However, these are all passive economies of scale and are omnipresent in a cluster (Schmitz: 1999).

What really make a difference between performing and non-performing clusters are active economies of scale, derived through conscious collaboration by consortia of firms, industry associations, vertical linkages, public-private partnerships and delivery of specialized services.

As has been observed internationally, active economies of scale have complemented the development of successful clusters. A study of cluster development efforts (DTI: undated) shows that some of the important factors that propelled success are promotion of networking and partnerships, infusion of innovative technology, development of strong skills base and creation of infrastructure across the cluster (Figure 1.1).

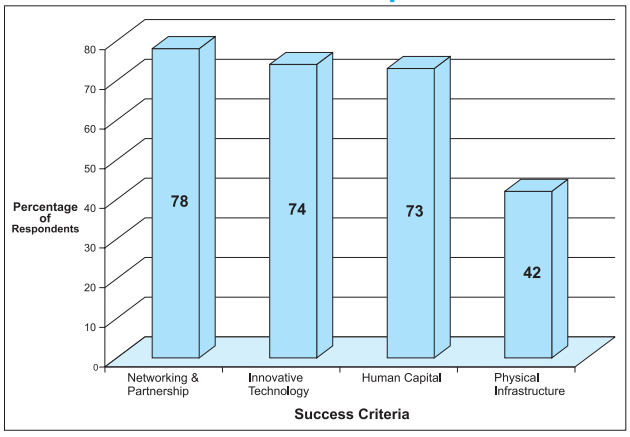
Importantly, it has been underscored in a massive literature (e.g. World Development Report:1999) that these collective gains have been obtained in clusters of such traditional

goods like textiles, ceramics, furniture, jewellery, leather & products, garments, processed food etc. and also in sophisticated products such as precision machine tools, pharmaceuticals, computer parts, surgical instruments etc.

1.3 Cluster - definitional and related conceptual issues

Clusters have been defined/conceptualized differently by different scholars/practitioners. An idea about the variety can be obtained from the compilation of some recent literature (Box 1.1).

Figure 1.1: Some Critical Success Factors in Cluster Development



Source: DTI (undated), page no. 6

Box 1.1- Clusters: Some Definitions

- "Clusters are a geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities. Clusters encompass a array of linked industries and other entities important to competition…including governmental and other institutions- such as universities, standard setting agencies, think tanks, vocational training providers and trade associations." **Porter (1998).**
- "… geographically bounded concentration of similar, related or complementary businesses, with active channels for business transactions, communications and dialogue, that share specialized infrastructure, labor markets and services, and that are faced with common opportunities and threats." **Rosenfeld (1997).**
- "Regional clustering has been used to describe industrial districts of small crafts firms, high technology centers, agglomerations of financial and business service firms in cities, company towns, and large branch plants and their supply chains.""….clusters at least must be characterized along relevant dimensions if appropriate policies are to be devised … (these include)…density…breadth… depth…activity base…growth potential…innovative capacity." **Enright (1998).**

Source: OECD 2007, Cluster Policies Whitebook 2004 & Enright (1998).

Broadly a cluster of enterprises may be defined as a typical geographical concentration of micro, small, medium and large firms producing same or a similar range of products (goods or services). Units in a cluster face same or similar set of threats (e.g. product obsolescence, lack of markets, etc.) and opportunities (e.g. increasing turnover through quality up-gradation or introduction of new products or markets, etc.) (MSME:2006). The firms producing 'the product' by which a cluster is known are called principal firms or principal stakeholders of the cluster.

A cluster of enterprises may be defined as a typical geographical concentration of micro, small, medium and large firms producing same or a similar range of products (goods or services), facing same or similar set of threats and opportunities.

The principal firms obtain inputs from a range of supporting firms through backward and forward linkages. These include raw material suppliers and manufacturers of parts and machinery; intermediary buyers like traders, exporters and import agents; and technical and financial service providers like banks, technical institutions, private business development service (BDS) providers on quality, environment, design, energy, capital investment, etc. Various interest groups such as product and umbrella associations/forums of firms also contribute towards the dynamics of the cluster. All

these - principal firms, support firms and service providers, technical and financial institutions and interest groups are a part of the cluster and are called cluster stakeholders. However, there have been wide variances with respect to fixing the number of firms and area covered by a cluster.

1.3.1 The definitional debate

In fact, there is no hard and fast rule either regarding the generality of the product, or regarding the 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).

Table 1.2: Definitional Variances of Clusters in Italy

Region	Criteria/Definition
Tuscany	• Index of manufacturing industrialisation over 85% of national index. • Index of manufacturing entrepreneurship higher than national average. • Index of productive specialisation higher than national average. • Share of workers of the specialised field over 23%. • Number of workers in SMEs over 50% of local workforce.
Lombardy	• Degree of industrialization (relationship between all the manufacturing workers and resident population) over 18.5 percent of regional average. • Rate of specialization (relationship between workers in each manufacturing sector and resident population) over 20% of regional average.

Source: Approaches to Cluster Mapping, UNIDO 2004.

Although attempts have been made to recognize a cluster by specifying the minimum number of units in a given measured location, these are difficult to generalize across activities/products. Italy is the cradle for cluster development for global understanding on clusters. It is probably the only country in the world that has a national law[4] 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.

In practice, there exists considerable variety in classifying a cluster, especially with respect to how wide a product range and the geographic area a cluster should consist of. It has been observed that too wide a product range can make product group meaningless as the common opportunities and threats lose their sharpness or specificity. Similarly, too large a geographical area deprives the units in the cluster to exploit the development potential through proactive joint action. On the other hand, defining a product too narrowly, especially in the context of a transition economy can make the entire process of cluster mapping meaningless, as it becomes difficult to find a sizeable number of similar firms, with commonalities that enable interconnectedness. It may be mentioned here that conglomeration of firms does not necessarily imply a "cluster" (as defined above). Table 1.3 lists down such instances that are not considered as "cluster".

In classifying a cluster too wide a product range can make product group meaningless.

Too large a geographical area deprives the units in the cluster to exploit the development potential through proactive joint action.

Table 1.3: Conglomerations Not Considered as Cluster

	Not a Cluster	Reason
1.	A **"sector"** that is present in various places all over a state or a country	Too large a geographical area deprives the units across the area to exploit advantages of proactive joint action.
2.	An **industrial estate or** an **industrial park having multiple products**	Too wide a product range means no common opportunities and threats. Hence, little scope of joint action.
3.	A **network** (small group) of enterprises producing similar products	Too small a number for enabling significant and variety of joint actions. These are often part of a cluster.
4.	A **cooperative,** which promotes cooperation among a number of enterprises under some norm, rule or a public scheme of assistance.	A central feature of dynamic clusters is "competitive cooperation". In case of a cooperative, competition does not exist. It is often a part of a cluster.
5.	A **group of villages, town or city** consisting of enterprises producing a diverse range of products or services.	These are clusters in a different sense and are not enterprise based clusters, which are being discussed in this paper.

1.3.2 Defining clusters in India

In India a number of agencies have come up with a range of definitions, tailored to suit the typology of clusters, which an agency decides/ is mandated to cater to, by specifying a certain minimum number of units in a given measured location.

Table 1.4: Defining Clusters in India

Institution	Definition
Integrated Handloom Cluster Development Programme (IHCDP), Ministry of Textiles	A handloom cluster has been defined as one having a minimum of 500 looms[5].
National Minority Development Finance Corporation (NMDFC)	Handloom cluster, which has more than 75% of the population as "minorities"
Scheme of Fund for Regeneration of Traditional Industries (SFURTI), Ministry of MSME	A micro village industry cluster having 500 beneficiary families of artisans/micro enterprises, suppliers of raw materials, traders, service providers etc., located within one or two revenue sub-divisions in a district (or in contiguous districts).
DC(Handicrafts), Ministry of Textiles	Agglomerations having 100 artisans. In case of North East Region, Jammu & Kashmir and other hilly terrains, the clusters will have a minimum of 50 artisans.
NABARD, Cluster Development Programme	Micro enterprises and household units functioning on SHG mode and having a minimum of 50 beneficiaries upto a maximum of 200. In intensive clusters, the number of beneficiaries may go up to 500-700 and can even extend over a block or taluka.
Government of Gujarat	A minimum of 50 industrial units, indulging in the manufacture of the same or related products and located within a radius of 10 km in a particular location.

Institution	Definition
Government of Orissa Handicraft cluster	At least 100 traditional artisans practicing the same craft for non-KBK districts and at least 50 traditional artisans in KBK districts and situated within a radius of 3-5 kms.
UNIDO- CDP	At least 100 SME units or 50 handicraft units in a town/ city or few villages and their surrounding areas for an industrial (traditional manufacturing) or an artisanal cluster respectively. Further a minimum of 500 handlooms for a handloom cluster.

Given the necessity for regular interaction for active cooperation among the cluster stakeholders, a cluster may be defined as a compact geographical area that can be traversed in 1.5 to 2 hours by local means of transportation and preferably specialized in single or analogous products[6].

There is a strong case for not trying to have a single definition of clusters.

It is important, to observe that there is a strong case for not trying to have a common definition of clusters; in fact, depending upon the nature of activity in a cluster and the intervention required, different functional definitions should be relevant subject to the condition that (a) the product range should not be too wide and (b) the area covered provides scope for interaction among stakeholders. Table 1.5 is indicative of the different ways by which a cluster can be distinguished; it is imperative, however, that reliable statistics for these variables are available.

Table 1.5: Common Parameters for Classifying Clusters

Sub-sector/Product/Service			
Geographical Area (in sq. km. for the identifiable meso level locality)			
Name of place: One that is easily identifiable or has a brand value			
Parameters	***Measurable Unit***	***Mature Clusters (Higher cut-off)***	***Potential Clusters (Lower cut-off)***
Enterprises	Number		
Turnover	Value		
Export	Value		
Employment Size	Number		

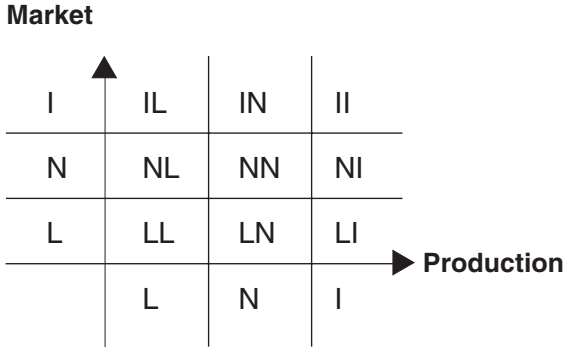
1.4 Clusters in India: Typologies and Status

There exists no single method of typifying a cluster. Localised clusters are concentrated geographically while dispersed clusters are spread across wider geographic areas. The density of a cluster defines its number of firms and or the volume of business handled by it. The breadth of the cluster defines the availability of few (narrow cluster) or more (broad cluster) of its related industries within its geographic range. Depth of the cluster depicts the availability of supply chains in the cluster. A localised, dense, broad and deep cluster are expected to be activity rich and has higher innovative capacity (Enright: 1998). Here again issues related to normal and specialized (Schmitz: 1999) activities come into operation.

These characteristics can help to identify a cluster, but these are cluster neutral at least from a policy view point. Issues that will make a difference from a policy angle are the target and a path that a typical cluster might set for itself. From a policy view point, (Bianchi, et al.: 1997) a cluster can be typified by its 'current and future' and 'market and production' structure as shown in Figure. 1.2, where 'L' stands for local, 'N' for national and 'I' for international. The framework suggests that a cluster, or at least majority of its firms, can at least theoretically have any of these nine combinations.

From a policy view point, a cluster can be typified by its current and future, market and production structure.

Figure 1.2 Market - Production Framework



While local, national or international markets are self-explanatory; local production system is based mostly on local resources, whereas national or international production system depends mostly on national and international resources. Such resources include sourcing of raw materials, technology, sub-contracting, HRD, etc. The challenges for micro enterprise cluster are often to move from an 'LL' to 'LN' to 'NN' and even an NI framework. This naturally makes the cluster product most efficient. Similarly, the challenge for a traditional manufacturing cluster is to move from an 'LN' to 'NN' to 'NI' and ultimately to 'II' framework respectively. Figure 1.3A and Figure 1.3B depicts a possible path each for such transition for a traditional manufacturing and an micro enterprise cluster respectively, where policy is relevant.

Figure 1.3A: Micro Enterprise (ME) Cluster

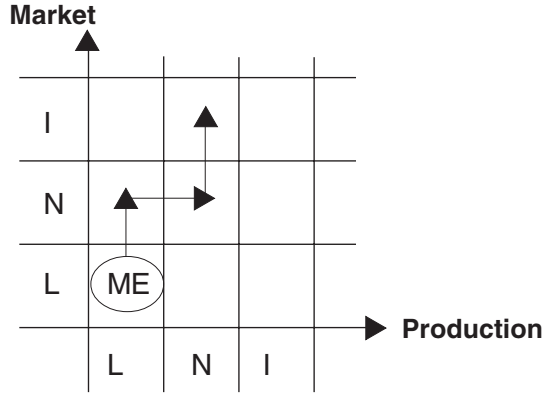
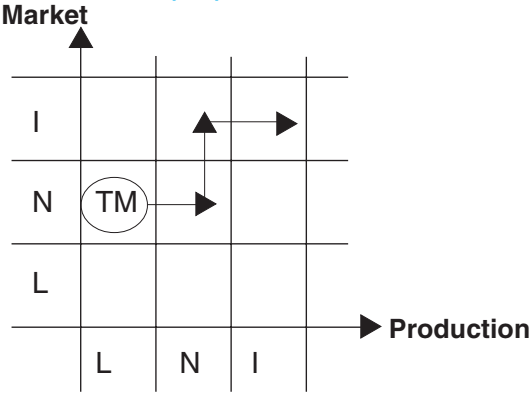


Figure 1.3B: Traditional Manufacturing (TM) Cluster



These are the typologies of clusters which predominates the Indian economy and employ a substantial secondary sector labour force.

Again, while the high growth rate of the Indian economy is heating up the labour market, although selectively, yet the export basket of India continues to be dominated by low-technology goods and services that are highly price sensitive and low value adding. This is a situation for intense stock taking on dual count - (a) current level of competitiveness is fast eroding in high tech industries and (b) a huge basket of industries that are major sources of employment are not

known for innovation at all, an issue that is imperative to handle the increasing global challenges of competitiveness. Thus apart from looking into innovation related issues in cluster, we find that another category of clusters, namely those encompassing high profile industries, will require distinct policy support for its ever innovative nature, which conditions its survival/growth or peril.

1.4.1 Typology and distribution of Indian clusters

From a policy perspective, it would be useful to follow a 3-way classification of clusters - high-tech, traditional manufacturing and micro enterprise clusters.

Hence, from a policy perspective, it would be useful to follow a 3-way classification for clusters, namely, high-tech clusters such as those in the IT and IT enabled services, computers, bio-technology and related services, precision instrumentation or avionics, etc. traditional manufacturing clusters (non high-tech and non-micro clusters) and low-tech poverty-intensive micro enterprise (handloom, handicraft and other micro enterprises) clusters. The traditional manufacturing and micro enterprises clusters may also be termed as natural enterprises clusters[7].

Based on the above broad classification of clusters in India, the real challenge is to obtain a reliable database for the same. It needs to be noted that no official statistics is yet available, which provides cluster level information. However, independent survey/ study (secondary analysis) by various ministries/ agencies/ institutes suggest that India has around 6600 (goods based clusters). It would, nevertheless, be safe to estimate that close to 6000 of these clusters would fall in the third category, namely, low-tech micro enterprise clusters (as mostly in the artisanal - handloom & handicraft and micro-enterprise segments). Of the remaining clusters, over 99 percent are traditional manufacturing cluster and the rest account for high-tech clusters. Though, there exist very few concentrations of IT, bio-technology and other high-tech firms in India such (mostly) policy promoted cluster are on the rise[8] and will require separate policy touch for excelling. There is no database of services clusters (e.g. ITES, tourism, education).

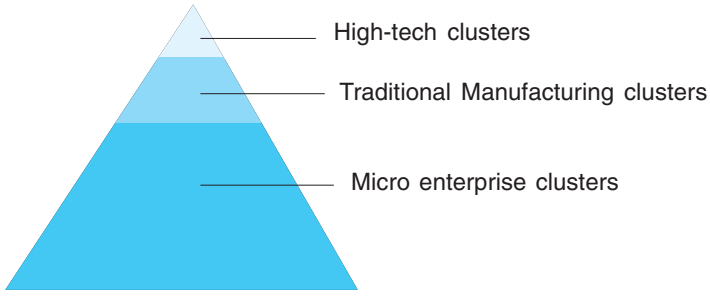
Table 1.6: Typology of Cluster: Significance to the National Economy

Parameters	Micro enterprise Clusters	Traditional Manufacturing Clusters	High - tech Clusters
Typology of Products (few examples)	Handloom, handicraft, coir, village industries	Leather & leather products, automotive components, ceramics etc.	Information Technology, pharmaceuticals, bio-technology, computers, tourism, education etc.
Number of Clusters	6000 (93.6%)	388 (6.1%)	20 approx. (0.3%)
Estimated Share of Employment (by cluster typology)	80%	14%	6%
Average Wage levels	Low	Medium	High
Likely growth rate (2002-07)	Negative or marginally positive	Positive (10-15%)	Positive (20-30%)

Source: Annual Report of various Ministries, Government of India and UNIDO CDP cluster database & estimates.

Given the distribution of such clusters, it could be represented through the following pyramid that essentially, indicates the preponderance of micro enterprise clusters (Figure 1.4).

Figure 1.4: Distribution of Clusters by Broad Typology



A region-wise distribution of the typology of clusters (other than high-tech) appears in Table 1.7 below[9].

Table 1.7: Expanse of Indian Clusters

	Traditional Manufacturing		Micro enterprise					
			Handicraft		Handloom		Others	
Region	No.	(%)	No.	(%)	No.	(%)	No.	(%)
North	123	31.7	716	25.75	140	23.56	698	24.11
East	36	9.28	645	23.19	43	7.24	464	16.02
West	140	36.09	764	27.47	134	22.57	787	27.17
South	89	22.95	502	18.05	214	36.02	858	29.62
North-East	0	0	153	5.51	63	10.61	89	3.08
Total	388	100	2780	100	594	100	2896	100

Source: Database of UNIDO-CDP and Third Census of SSI units, 2001-02.

1.5 Clustering in India: Scope for Policy

In India a number of approaches to support MSMEs are operational with specific objectives. For instance creation of industrial estates focuses on provision of infrastructure facilities. Business incubators support individual firms in creating new ways of doing business. SHG formation as also microfinance supports micro units in getting credit. Various technology upgradation programmes as well as marketing and credit schemes support individual firms to create or adopt new technology and enhance business scope.

There are also a number of sectoral policies that promote various typical sectors, e.g. leather, textiles, etc. However most such policies are not designed or motivated enough to utilize the benefits of clustering by promoting "proactive joint action" by utilizing a range of internal and external linkages to enhance productivity, move up the value chain and be innovative. Thus a typical cluster policy that will promote "Joint Action" and "Linkages" in clusters along with the

usual macroeconomic and other sectoral and regional policies will do well for firms which are in clusters. It is also but natural, that a developed cluster so created, will create better utilization of the scope provided for in sectoral and regional policies too. Similarly the spirit of cluster policy can also be mainstreamed in sectoral and regional policies. A number of schemes for cluster based development have also become operational (details provided in Chapter 2 of the Report) with varying objectives, methodologies and scope, producing various results and lessons. Thus, it is crucial as well as timely to put in order the parameters that will address the needs of a range of clusters and will deliver through professional implementation mechanism.

CHAPTER 2

Cluster Development Experience: Significance in India and Abroad

Comprehensive cluster based support at policy level is rather a recent phenomenon globally as also in India.

Although, clusters exist for centuries, comprehensive cluster based support at policy level is rather a recent phenomenon globally as also in India. Interestingly, this approach seems to fit in well with the paradigm of promotion, internationalization and integration with global economy instead of protection and enterprise level support. However, globally and more so for transition economies, not all clusters are high performance or 'overachiever' clusters. While 'performing' clusters follow 'high road' "…synonymous with innovation, high quality, functional flexibility and good working conditions…", numerous 'non-performing' or 'underachiever' clusters follow a 'low road' "…based on competing with the basis of low prices, cheap materials … and cheap labour…" (Humphrey and Schmitz: 1995) in their growth pursuits. A turnaround here necessitates a planned cluster development initiative.

2.1 International policy experience: Major programmes/schemes/approaches

An OECD Study (2007) suggests that apart from developing clusters, cluster development initiatives can be considered useful for their other merits. For example, trade regulation and competition policy on an international scale may confine a country's ability to provide direct firm subsidies and here cluster policy provides a way out for promoting competitiveness in industry. It also helps to dialogue with the private sector and focus provision of public funds from a demand based paradigm. However, there is a clear difference between programmes that attempt to strengthen existing clusters and those that conceptualise to build on embryonic concentrations by bringing in new activity and then promoting networking. Again, through such policy, one should ensure that no attempts are made to defend products and services, which will definitely not be sustainable in the long run.

A review of cluster development initiatives (policies and programmes) in both developed and transitional economies reveals the following[10]:

- Cluster promotion has become an integral part of the national industrial development in countries at different levels of economic development. Cluster based initiatives are known to be in operation in more than 50 countries as per available literature. Some of the countries that have clear policy/programme on cluster development are listed in Table 2.1.

Cluster based initiatives are known to be in operation in more than 50 countries.

Table 2.1- Some Countries having Cluster Development Policies and/ or Programmes[11]

	Country	Cluster Policy	Cluster Programmes
1	China	×	✓
2	Finland	✓	✓
3	France	✓	✓
4	Germany	×	✓
5	Italy	✓	✓
6	Japan	×	✓
7	Korea	✓	✓
8	Spain	×	✓
9	Sweden	×	✓
10	U.S.A.	×	✓
11	Saudi Arabia	×	✓
12	UK	✓	✓

Note: Information given in this table is not exhaustive and is just a reflection of the extent of data collected.

- Share of public funding, whether from domestic or international sources is quite high. In a number of instances, governments financed between 75 and 90 per cent, irrespective of the level of development of a country. Private sector has also chipped in, but its share is marginal.

Figure 2.1A: Agencies Participating in Cluster Initiatives: Low Income Countries

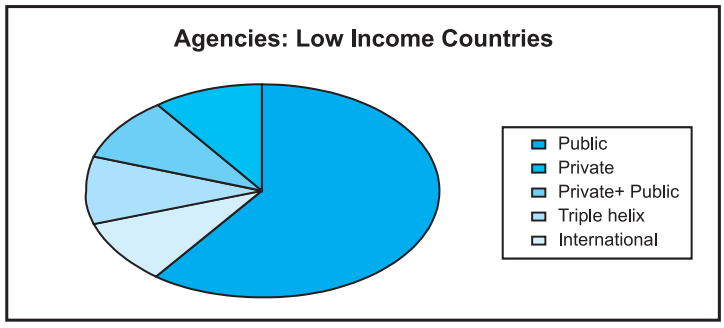


Figure 2.1B: Agencies Participating in Cluster Initiatives: Middle Income Countries

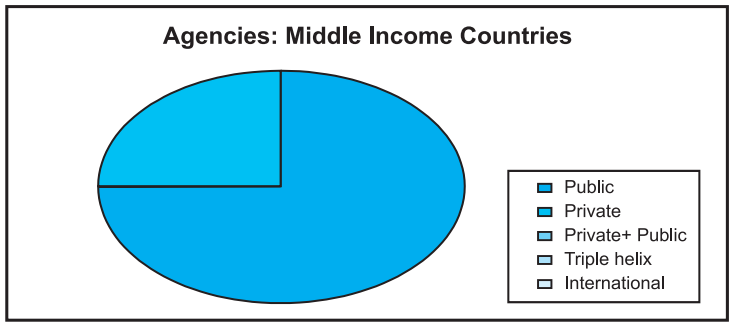
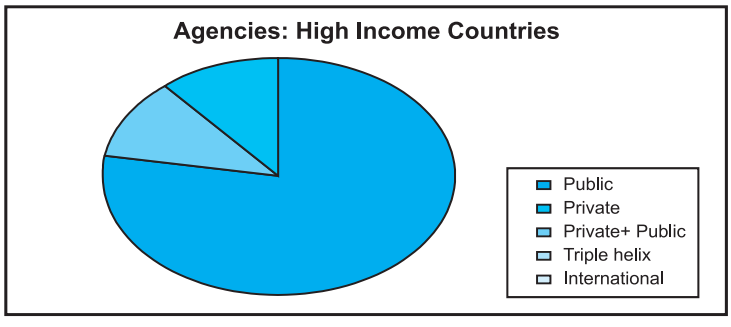


Figure 2.1C: Agencies Participating in Cluster Initiatives: High Income Countries



Note: In the diagrams above, we should note that the categories are inter-penetrating i.e., some countries have more than one agencies operating to facilitate cluster initiatives. These charts are based on the analysis of 25 country programmes (See Annex 2.1)

- Cutting across sub-sectors, in many countries (both economically developed and developing), the state has promoted specialized support services through formation of institutions specialized for promoting competitiveness.

- In most developed economies (e.g., France, Italy, Norway, Spain and South Korea) emphasis have been on promoting innovativeness in high-tech knowledge-based clusters through facilitating industry-academia-government networks. In a number of cases, role of the state has been envisaged for the initial period of development.

- In most countries, especially developing ones, product specific (both traditional and modern) cluster programmes have been designed. These often include intervention not only in the production process (through input, finance and technology support) but also in helping enterprises link up with export market and business service provision.

- There is clear time framework of implementing a cluster initiative in most countries, although in many cases such programmes are carried out as a dynamic long-term process.

- In most cases, linkages with global value chain has been emphasized for higher value addition and investments made in key facilities as creating networking platforms for information exchange.

- A notable aspect of cluster initiatives in most countries has been the collaboration between ministries, other external agencies and private sector. In many countries, the regional governments have also taken active interest in these efforts.

- Selection of clusters are done top down (as per priorities and judgment of the funding institution) or bottom up (self-selection through call for proposals) or a combination of both.

- Different approaches are required while supporting a leading or lagging region/dynamic or sinking sectors. Providing a blanket approach to all sectors can be ineffective and dilute available resource and focus.

- In general, three types of interventionary instruments are used - engaging actors (sensitisation and promotion), provide collective services (short run activities) not available from the private domain and facilitating business linkages (long run activities).

- It has also been found prudent to offer a range of instruments so that clusters at various levels of maturity find the support useful and popular instruments need to be upscaled.

- Linking clusters in same industries over different geographic areas but under a common theme helps cross learning.

- Coordination of stakeholders, calls for a specific person- the facilitator with networking skills & abilities. At its most basic form of facilitation an animator is employed to bring firms together for informational or social events.....". Taking the facilitation role further.....network building....." In Denmark there was a broker certification system. "...The concept of facilitator training and certification continues to be used today....." (OECD: 2007)

- At the operational level, disappointment comes often due to insufficient funding and timeframe. Period less than 3 years were found to be highly inadequate. Performance related funding is also practiced. Shared responsibility of centre and region is one vehicle for supporting policy coherence. Administrative boundary issue is also a frequent challenge.

There is also need for (a) demand oriented approach (b) broad based networking with range of stakeholders (c) ownership of project by local stakeholders (d) empowering them by providing appropriate skills and (e) provide right motivation and incentives.

Box 2.1: International Cluster Development Initiatives of UNIDO

"….. The case of Hondurus represents a project which evolved from the creation of SME networks into the establishment of a specialized institution (CERTEC) acting as a networking promotion agency. The case of Nicaragua illustrates two main points: how, as a result of its successes with network brokering, a project has achieved significant influence on policy making at the national level and how the principles of scale economies inform the delivery of appropriate support measures. The case of Mexico highlights a case of promoting vertical integration arguing for the direct involvement of large-scale manufacturers into suppliers' upgrading efforts. The case of Jamaica presents an example of entry at the top institutional level (whereby the effort to bring cluster-based development lays at the operational core of the national SME support agency and as a case of creation of specialized service centres (on garments, fashion, furniture etc.)….".

Source: Ceglie, Clara and Dini: UNIDO (1997)

- Ability to measure success is a challenge. There exists a spectrum of methodologies for evaluation of any programme ranging from take up rates of project, number of jobs created, innovations fructified, new business launched, overall cluster economic performance, ability to attract additional funds, etc.

Box 2.2: Measuring Success- Some Case Studies

- **Finland** Centres programme measure success by the number of jobs created, innovations done, participants and persons trained.
- **Japan's** Industrial Cluster programme measure the number of collaborative projects and new business launched by firms and universities as yardsticks of success.
- **Spain's** Basque Country programme focuses on overall cluster economic performance.
- The **Norway** Programme tracks indicators common to all projects (increased cooperation, innovation and international involvement) and specific goals per individual project (project's own scale, level of development, challenges and potential).
- The **Georgia** Research Alliance programme, measure success (among others) by their ability to attract additional funds, whose goal was to increase the economic performance for the state via technology, states to have achieved a 5 to 1 leverage, attracting 1 billion USD in federal research dollars and 1 billion USD in private investment for the state's total investment of 400 million USD.

Source: OECD 2007

To summarize, we find that, irrespective of the economic status of a nation, the state has always remained an active promoter of inducing cluster-based development of MSMEs. Apart from the ministries that promoted cluster development, there exists a synergy among the promoters, other external agencies and the private sector in such cluster development initiatives. Areas of intervention in a cluster are dependent on the economic status of a nation. In most developed economies, emphasis has been laid on promoting innovativeness. Here, the critical success factors identified in the global context are networking, partnership, innovative technology and strong skills base for high profit yielding products. Whereas, product specific cluster programmes (e.g. for artisanal or industrial clusters), with a mixed basket of typology of support (e.g. marketing, technology, linkages to global value chain, financing, etc.) are more prevalent in transition economies.

It is important to note here that impact of cluster development on typical developing country issues such as poverty alleviation or industrial relocation, etc. has not figured prominently in the policy issues per se. However one has a feeling, that it is the beginning of a long churning process, which has just started maturing.

2.2 SSI Policy experience in India prior to 1991

With almost 60 years of policy experience in India concerning small firm development, there is hardly an aspect of intervention that has not been touched upon. In fact, small scale industry (SSI) policy has included numerous schemes and programmes addressing vital issues such as credit, technology upgradation, skill formation, marketing support, tax rebates, export promotion and infrastructure creation. As in any policy context, these various instruments quintessentially have been either regulatory or promotional in nature. In terms of promotional measures, again, while priority sector lending, variety of fiscal concessions and rebates on inputs were some of the common incentives provided to the SSI sector as a whole, sector-specific and issue (e.g. technology) specific support schemes also formed part of the policy strategy. It would be fair to surmise that these regulatory and promotional measures have contributed both, directly and indirectly, to the growth of the sector.

However, on a closer look, it is easy to comprehend that government remained grossly committed to play the role of protector and/or support provider to whichever unit that came under a certain defined size parameter. In certain cases support was provided to specific industry groups. The example of giving boost to sub-sectoral industrial estates or product-oriented parks sharply brings out the focus of such an approach. In this process of state as benefactor of small enterprises what probably lost sight was the understanding, assessing and addressing the emerging issues from a systemic perspective. Supporting the route of market-based solutions, wherever those would have been possible, was also not deliberated upon.

There was also lack of convergence between various 'stand-alone' schemes. Such convergence is critical as in the growth cycle, while the journey can start at any point, be it technology upgradation, finance, market, organizational structure; at some point there will be necessity for other support too. In the absence of such follow up support in a natural and quick succession, the initial growth path can be a wasted investment.

Further, these policy instruments seem to have paid little attention to the potential of targeting a collective of enterprises with a shared business vision; which is an important vehicle to promote growth in a competitive business environment. Importantly, it seems clear from global experiences of inducing such group approach (Nadvi: 1999, Rosenfeld: 1996, Rabellotti: 1999, Schmitz: 1999) and even somewhat limited Indian experience (1997-2007); that the roles played by BMOs, BDS providers, specialized NGOs and private sector value chain partners (especially for poverty intensive clusters) have been significant in fostering MSME clusters.

2.3 Cluster development thoughts in India

Thematic issue (e.g. technology) based development in cluster, was initiated as early as 1987 by SBI through their Project UPTECH and soon followed up by SIDBI in 1991. In 1996 a UNIDO study identified a list of 138 traditional manufacturing and micro enterprise clusters. In 1997, the Abid Hussain Committee on Small Scale Industries forcefully brought in the dimension of clusters in SSI promotion. It said: "…this (cluster based approach) is a very practical approach to SME promotion in India since there already exist a large range of small scale industry clusters across the country…". This was immediately simultaneously (1997) taken up by a more integrated cluster development programme by UNIDO-CDP with a special emphasis on social capital as a key strategy for cluster development. Besides UNIDO through its cluster projects also developed a methodology on cluster development. The then DC(SSI) also started a project, UPTECH, in clusters as early as 1998. (MSME:2006).

"...the Prime Minister has decided to constitute an Empowered Group of Ministers who will lay down the policy for cluster development and oversee the implementation..." (Union Budget 2006-07).

Subsequently various Budget Speeches of the central government highlighted the importance of cluster based development. The Finance Minister in his budget speech in 1999-2000 on rural industrialization said, "....Accordingly, I propose a National Programme for Rural Industrialisation (NPRI) with the mission to set up 100 rural clusters every year to give a boost to rural industrialization". Similar lines of support were given to the handloom sector in the Union Budget 2005-06, "....The Government proposes to adopt the cluster development approach for the production and marketing of handloom products." The significance of cluster is also well highlighted in the Union Budget 2006-07, "...the Prime Minister has decided to constitute an Empowered Group of Ministers who will lay down the policy for cluster development and oversee the implementation..."

An Approach Paper to the 11th Five Year Plan document states that "…..A cluster approach can help increase viability by providing these units with infrastructure, information, credit and support services of better quality at lower costs, while also promoting their capacity for effective management of their own collectives….."(Planning Commission: 2006). Similar emphases on achieving industrial progress through clusters have been expressed in Budget papers and official documents of various state governments.

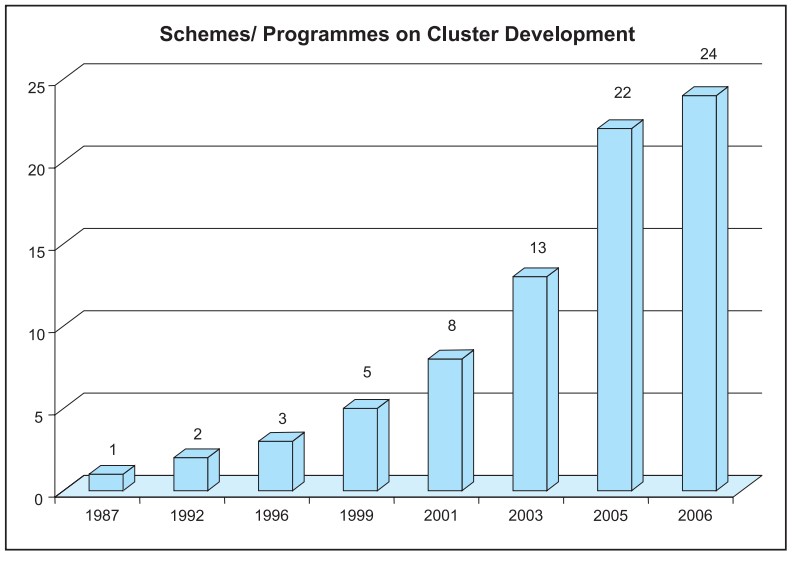
2.4 Cluster development schemes/programmes in India

Holistic cluster development programmes gathered momentum in 2002-03, with the initiation of such a programme by Ministry of MSME.

Though thematic development initiatives in clusters dates back to the late eighties, it was only as late as 2002-03 that holistic cluster development programmes gathered some noticeable momentum at the national level, with the initiation of such a programme by the then Ministry of SSI (now Ministry of MSME).

During the two decades of cluster development initiatives, around 24 schemes/ programmes have supported or continue supporting various forms of cluster development initiatives in India. Out of these listed schemes, 9 have been part of three Ministries of Central Government, namely, the Ministry of Textiles, Ministry

Figure 2.2: Year wise Distribution of Schemes/ Programmes on Cluster Development in India



of MSME and Ministry of Commerce and Industry. The State Governments of Gujarat, Orissa, Kerala, Rajasthan and Madhya Pradesh have also initiated schemes/programmes at the state level covering clusters across sub-sectors. Additionally, financial and technical institutions such as SBI, SIDBI, NABARD, NMDFC, NEDFi and NMCC have also devised schemes/schemes to support clusters. International institutions like UNIDO and ILO are also implementing various cluster development programmes. Department of Ayush, Government of India has allocated Rs 500 crores for development of 20-25 clusters in the 11th five-year plan[12]. Some techno-commercial institutions at the national and state level (e.g. CII[13], RUDA[14] etc.) are also involved in several cluster based developmental activities[15]. The year of inception, the typology and the number of clusters supported under each scheme or programme is given in Table 2.2.

Table 2.2: Schemes/Programmes of Cluster Development Institutions in India

		Year of Inception of Scheme	Typology of Clusters assisted	Clusters assisted (2006-07)
	Central Government			
1	Ministry of Textiles			
	Scheme for Integrated Textile Parks (SITP)	2005-06	Textiles (Handlooms & Powerlooms)	30
	Baba Saheb Ambedkar Hastshilp Vikas Yojana Scheme (AHVY) - DC(Handicrafts)	2001-02	Handicraft	684
	Integrated Handloom Cluster Development Scheme (IHCDP) - DC(Handlooms)	2005-06	Handloom	21
	Textiles Committee of India	2002	Textiles (Handlooms & Powerlooms)	23
2	Ministry of MSME			
	Micro and Small Enterprises Cluster Development Programme (MSECDP)	1998	Traditional manufacturing & micro enterprise	90
	National Small Industries Corporation Ltd. (NSIC)	2002-03	Traditional manufacturing	30
	National Programme for Rural Industrialisation (NPRI)	1999-2000	Micro-enterprises	100
	Scheme of Fund for Regeneration of Traditional Industries (SFURTI)	2005-06	Micro-enterprises	100
3	Ministry of Commerce and Industry			
	Industrial Infrastructure Upgradation Scheme (IIUS)	2004-05	Traditional manufacturing	26
	Other Institutions			
4	NMDFC Micro Financing Scheme through the Cluster Development Approach	2005-06	Micro-enterprises	5

5	SBI Project UPTECH	1987-88	Traditional manufacturing & micro enterprise	28
6	SIDBI Technology Upgradation Programme (TUP)	1991	Traditional manufacturing & micro enterprise	45
	SIDBI- Financing and Development of SMEs	2006-07	Traditional manufacturing & micro enterprise	3
7	NABARD Cluster Development Programme	2003-04	Micro-enterprises, Handloom and Handicrafts	48
8	NMCC- Project VIkas with support from Microsoft	2006-07	Traditional manufacturing	7
9	NEDFI Cluster Development Programme	2004-05	Micro- enterprise	9
	State Government			
10	Margin Money Scheme for Cluster Development Activties (Government of Kerala)	2003	Traditional manufacturing & micro enterprise	17
	Grant Assistance to Cluster Development Activity (Government of Kerala)			
11	Gujarat Industrial Policy - 2000, Scheme for Assistance to Cluster Development	2000	Traditional manufacturing & micro enterprise	19
12	Integrated Cluster Development Programme (Traditional products of Khadi & Village Industries, sericulture and crafts & handloom products) (Government of MP)	2004-05	Micro- enterprise, (Handloom, Handicraft)	6
13	Craft Village Scheme (Silpigram Yojana) (Government of Orissa)	2004-05	Handicraft	30
14	Cluster Development Programme (Government of Rajasthan)	2005-06	Handloom and Handicraft	15
	International Organisation			
15	UNIDO Cluster Development Programme, Delhi	1996	Traditional manufacturing & micro enterprise	20
	UNIDO Cluster Development Programme, Orissa	2005		
	UNIDO Consolidated Project for SME Development in India	2007		
16	Boosting Employment through Small Enterprise Development (ILO)	2000	Handicraft	2
	Total			**1358**

Source: (i) Ministries of Central Government (www.goidirectory.nic.in)
(ii) Official websites of the State Government and other institutions (the websites are provided in the bibliography). (iii) Personal meetings

2.5 Analysis of Schemes: Macro Parameters

At a broader level of classification, all cluster schemes can be divided into two broad categories viz (i) those with holistic cluster promotion focus and (ii) those with a specific area of support such as technology, infrastructure, BDS, etc. in a cluster. In a substantive sense, all Central government schemes and most state government schemes have adopted a certain variant of a holistic UNIDO cluster development approach, which evolved as a result of intense experience of cluster development across 20 clusters over a wide sectoral and geographical expanse for over 11 years (1996-2007) (for details, see, Annex 2.3).

The basic functional components such as undertaking diagnostic studies and engaging Cluster Development Agents (also termed as Cluster Development Executives) form part of most of these schemes, e.g., the schemes like AHVY, IHCDP, TC, MSECDP and SFURTI. In certain cases, developing infrastructure has been included as a priority area. The state government schemes are fairly general in nature and aim at encouraging public private participation in areas like cluster level infrastructure (as in Gujarat) or employment creation (as in MP).The financial institutions, however, have emphasized improvement in technology in clusters and the provision to provide credit for the purposes. A list of possible cluster related activities appears in Annex 2.2.

Individual schemes focus on different types of clusters depending upon their target clientele e.g. DC (Handlooms) for handloom cluster, Ministry of ARI (now MSME) in rural cluster, Ministry of SSI (now MSME) in industrial clusters set in both rural and urban backdrop, etc. The state governments have typically chosen to support a wide range of clusters, but, expectedly rural and artisanal ones for poverty intensive cluster states, e.g. Madhya Pradesh and Orissa. So far as the financial institutions (for instance, NMDFC, SBI-UPTECH, SIDBI) are concerned, the selection of clusters are titled towards village and micro enterprise clusters for NMDFC and a mix for SBI UPTECH and SIDBI. Details of cluster schemes is provided in Annex 2.4.

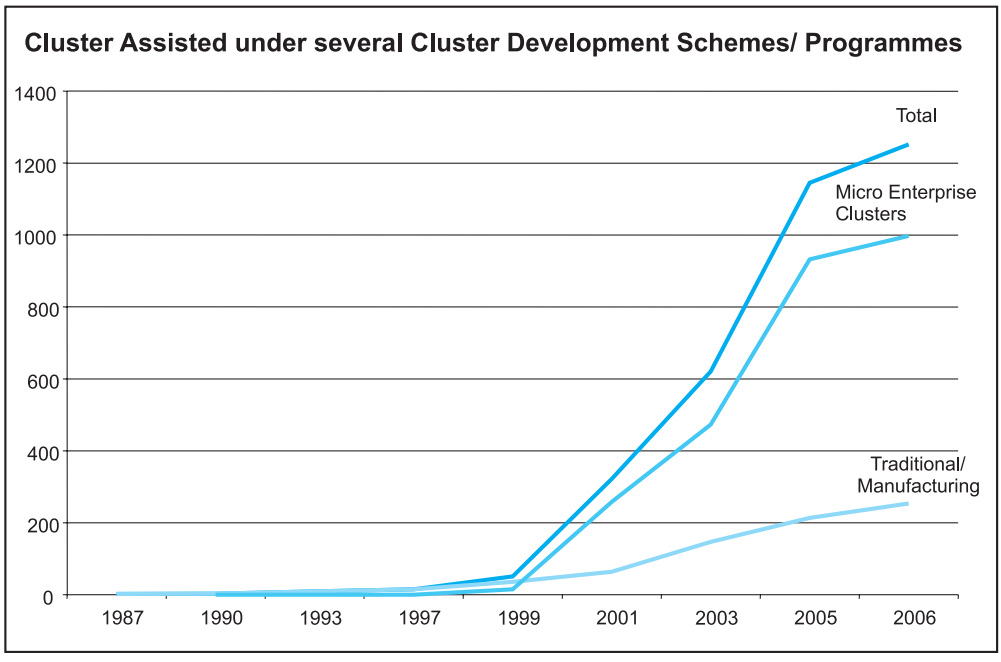
24 schemes (operational or completed) have supported around 1358 clusters so far, of which 278 are traditional manufacturing and 1080 are micro enterprise clusters.

It is estimated that the 24 schemes (operational or completed) have supported around 1358 clusters so far, of which 278 are traditional manufacturing and 1080 are micro enterprise clusters (as shown in Figure 2.3). The inception of AHVY (under DC (Handicrafts), Ministry of Textiles) in 2001-02 resulted in a remarkable increase in the number of artisanal clusters supported, prior to which focus was mainly laid on traditional manufacturing clusters. No cluster in the area of high tech has been supported so far by the schemes.

Assistance is estimated at Rs 700 crore till 2006-07, of which 91.4% has been contributed by the Central Government.

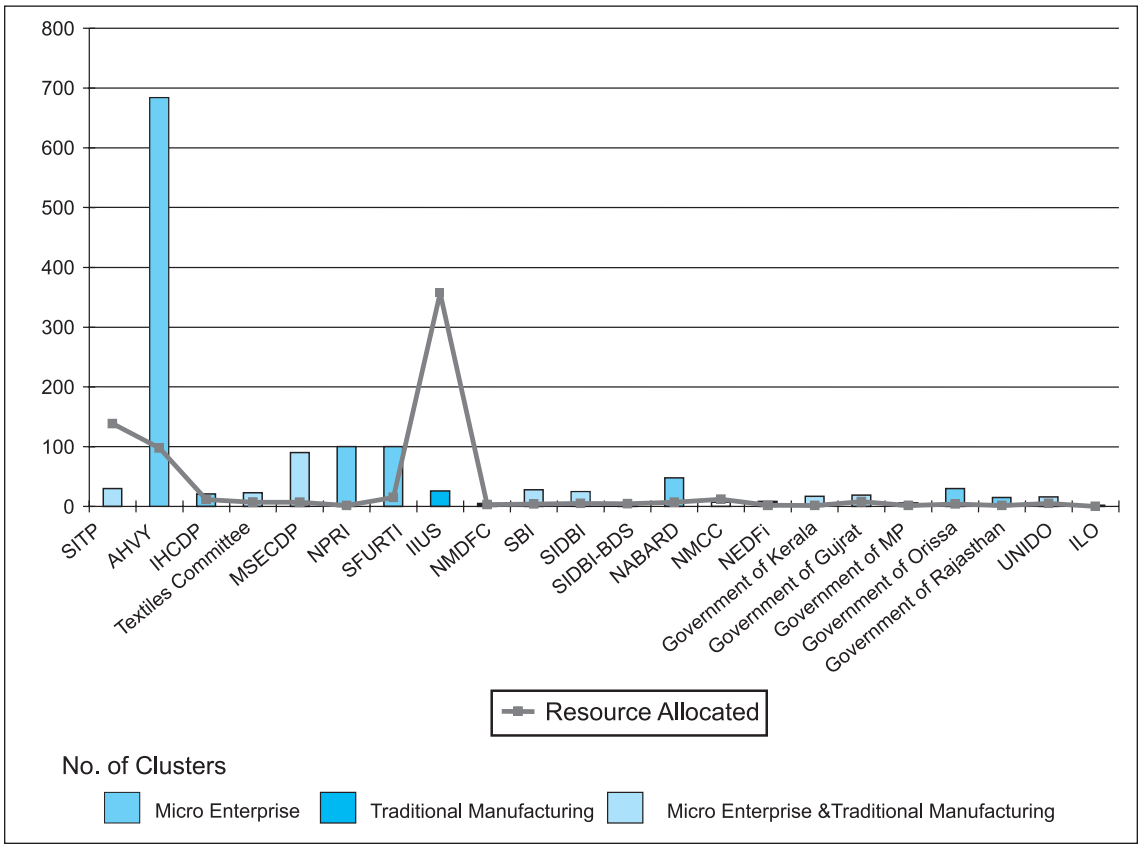
The resource allocated for cluster development under the listed schemes of assistance is estimated at Rs 700 crore till 2006-07. Of the total estimated amount, 91.4% has been contributed by the Central Government, 2.4% by the State and the remaining

Figure 2.3: Year wise Cluster Assisted under several Cluster Development Schemes/ Programmes



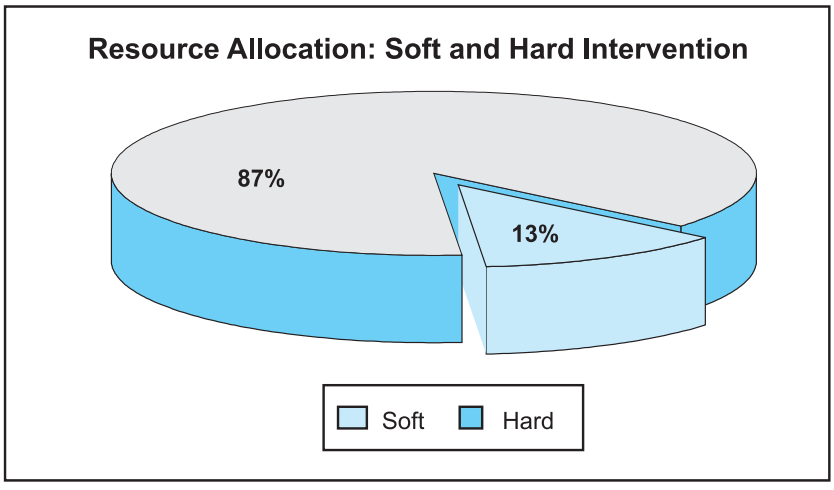
6.2% by the techno- financial institutes and international organisations. The scheme-wise allocation of resources for cluster development and the number of clusters assisted is given in Figure 2.4.

Figure 2.4: Scheme- wise distribution of Cluster Assistance and Resource Allocation



The amount of assistance assigned for cluster development is heavily skewed towards infrastructure[16], amounting to 87% of the total expenditure as shown in Figure 2.5.

Figure 2.5: Resource Allocated for Soft and Hard Interventions



It is estimated that during the next five years, resources worth Rs 4500 crore of development fund are likely to be invested (subject to various clearances) for cluster development. An estimated 80 percent of this amount is likely to be targeted for cluster infrastructure.

Resources worth Rs 4500 crore of development fund are likely to be invested for cluster development during the next 5 year.

2.6 Scheme support for typologies of interventions

The 'typology of interventions' in clusters in India can also be broadly categorized into: (1) market development (2) enhancing productivity and competitiveness and (3) promotion of local governance structures (networks). The 'nature of activities' for each of the above typology can be broadly classified into benchmarking (learning through visits, discussions and understanding of successful models), promotion of joint activities (soft interventions like training, market promotion, technology development), infrastructure creation/ promotion specific to the cluster and linkage with value chain partners. Table 2.3 details the

Table 2.3: Typology of Activities

		Marketing	Productivity and Competitiveness	Sustainable Local Organisations
		M	**P**	**S**
Benchmarking	**B**	MB	PB	SB
Other "soft" activities	**R**	MR	PR	SR
Infrastructure	**I**	MI	PI	SI
Promoting linkage with lead value chain partners	**L**	ML	PL	SL

There is hardly any support for promotion of local institutional capacity and promotion of private sector led development.

'typology of activities' by combining the 'typology of interventions' and the 'nature of activities' by which these are achieved (Ray and Sarkar: 2007). Another area that commands support is innovation, with high risk of failures. These may include innovative marketing arrangement, technology or creation of appropriate organizational structure. This however is not focused as a part of CDP in any Scheme.

A subjective evaluation of 18 schemes (Table 2.4) based on stated areas of support (and ignoring the flexibility provided for inclusion of any other demand driven activity wherever mentioned in those 18 Schemes) shows that there is hardly any support for promotion of local institutional capacity and promotion of private sector led development.

Table 2.4: Subjective Evaluation of Typology of Activities Supported by Schemes/Programmes

		Marketing	Productivity and Competitiveness	Sustainable Local Organizations	Total (Row)
		M	**P**	**S**	
Benchmarking	**B**	10	9	7	26
Other "soft" activities	**R**	13	10	6	29
Infrastructure	**I**	9	8	3	20
Promoting linkage with lead value chain partners	**L**	5	4	4	13
Total (Column)		37	31	20	

Note: This is for 18 schemes for which sufficient details are available. The maximum score for each cell in the total (column) can be 72 and that for each cell in total (row) can be 54. the maximum score for any other cell can be 18.

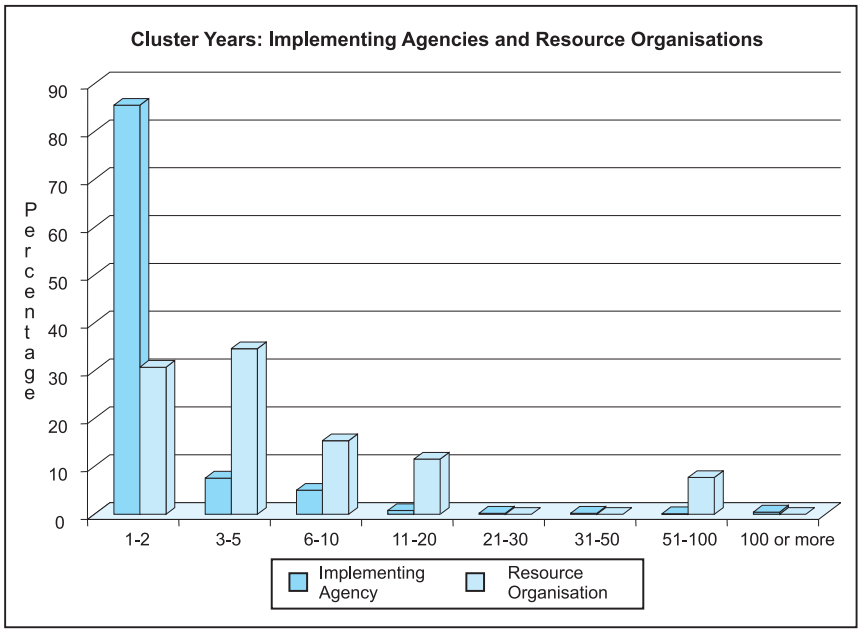
2.7 Support Institutions for cluster development in India

86% of the implementing agencies belong to the experience group of 1-2 cluster-years. 65% of resource organizations have experience of less than equal to 5 cluster-years.

For successful intervention in cluster, apart from CDEs/CDAs at the grass root level, role of (a) implementing agencies (IAs) who provide support to the CDEs/CDAs and that of (b) resource organizations (ROs)providing technical guidance to the CDEs/CDAs, are significant. To understand the current scenario of the maturity of the implementing agencies and resource organizations in India, we have looked into their cluster experiences. An IA is said to have one cluster-year experience, if it has worked in one cluster for one year. Similarly, an RO is said to have one cluster-year experience if it has guided an IA in one cluster for one year.

As can be inferred from the graph (Figure 2.6), 86% of the implementing agencies belong to the experience group of 1-2 cluster years and 0.57% have more than 50 cluster-years of experience. Similarly, 65% of resource organizations have experience of less than equal to 5 cluster-years.

Figure 2.6: Experience in Cluster-Years of Implementing Agencies and Resource Organisations



2.8 Outcome of Cluster Development

The process of holistic cluster development started in the year 1997 with the onset of cluster development programme by the United Nations Industrial Development Organization (UNIDO). Cluster development in true spirit was picked up only as late as 2002-03 by the national institutions and results have started flowing in. Published data regarding outcome of the programmes are scarce, excepting for one-off knowledge of a certain cluster at a certain point of time. Since the UNIDO programme started a little early some data is available with respect to 7 clusters where work was initiated. This is presented in Table 2.5 and Table 2.6 below. It may be mentioned here that apart from firm level changes, impact was also noticed at cluster level in the form of creation of number of new networks, associations and linkages that were established with a large number of support organizations during these programmes (UNIDO: 2001, 2003).

Table 2.5: Estimated Results of Intervention at Firm Level

Cluster	Year of Intervention	Additional Domestic Sales		Additional Exports		Additional Savings Generated		Additional Quality Accreditation
		USD Million	Number of firms	USD Million (new mkt)	Number of firms	USD Million	Number of firms	Number of firms
Jaipur	1997-2000	0.12	75[17]	1.00 (2)	14			
Ludhiana	1997-2000			10.00[18]	25	1.20	55	
Pune	1997-2000					0.02	20	9[19]
Tirupur	1997-2000			10.00[20]	15	0.80	45	16 (24)[21]
Ahmedabad	1999-2002	2.00	21	1.50 (1)	9	0.10	70	32 (60)[22]
Ambur	1999-2002	0.03	30	0.13 (1)	5	0.09	25	6
Bangalore	1999-2002	1.10	50	(1)		0.17	40	
Total		3.25	174	22.63	68	2.34	235	63 (99)[23]

Source: Compiled from End of Project Reports of UNIDO Projects US/GLO/144 and US/IND/97/148

Table 2.6: Estimated Results of Intervention at Firm Level

Cluster	Year of Intervention	Additional Investment made		Additional Credit	New Training Programmes		Number of firms supported
		USD Million	Number of firms	Artisanal units	Number	Number of firms	Number of firms
Jaipur	1997-2000			65	5	50	90
Ludhiana	1997-2000	8.00	22		5	75	75
Pune	1997-2000				1	50	275
Tirupur	1997-2000				13	50	75
Ahmedabad	1999-2002	1.50	41		10	101	120
Ambur	1999-2002	0.30	7	30	4	94	115
Bangalore	1999-2002	1.00	21	-	4	50	100
		10.8	88	95	42	470	850

Source: Compiled from End of Project Reports of UNIDO Projects US/GLO/144 and US/IND/97/148

This shows that cluster development programme, through the process of creation of networks and linkages, creates outcome in the form of enhanced turnover, exports, quality up-gradation, savings, investment, training, etc. A recent Project of UNIDO also shows that cluster development programme also impacts on relatively poor stakeholders, only when it is specially designed to include those stakeholders. (UNIDO: 2006).

These were also found to be working for various other cluster development initiatives promoted by a number of agencies across India. A handful of case studies have been carried out for a few institutions for clusters development programmes at various levels of maturity and promoted by different typology of institutions. These include the following clusters along with their level of maturity and implementing organization:

	Name of Cluster	Implementing Organization	Started	Ended
Interventions in Traditional Manufacturing Clusters				
CS1	Rajkot Diesel Engines and Engineering Cluster	EDI [for DC(MSME)]	2003	2006
CS2	Coimbatore Wet Grinder Cluster	NIMSME as RO [for DC(MSME)]	2003	2006
Intervention in Micro Enterprise Clusters				
CS3	Bidri Cluster of Bidar, Karnataka	NABARD	2003	2006
CS4	Stone Carving Cluster of Konark, Orissa	UNIDO-CDP, Orissa	2005	Continuing

CS => Case Study

CS1: Rajkot Diesel Engines and Engineering Cluster

The Diesel Engine & Engineering cluster of Rajkot (Gujarat) has 4170 firms producing 6 major items. Intervention in the cluster was initiated by EDI with the programme support of the Office of DC (MSME) (& ICICI intervened in 2003) for a period of 3 years. Some of the major problems were identified as competition from imported of light weight engine, shortage of raw material and fluctuating prices, limited buyer linkages, old technology and limited knowledge about international standards and manufacturing practices.

The strategy for intervention was to demonstrate results in the most critical area, i.e. technology usage. It started off with technology benchmarking with the latest available technologies. A business delegation was taken to 'International Machine Tools Exhibition' in Taiwan for this purpose. Simultaneously, meetings were arranged with the potential buyers to provide an insight on the expectations of the buyers. This was followed by local buyer-seller meets in association with Indian Institute of Machine Tools Manufacturing (IIMM). Demonstrations were also made on use of modern cutting tools through manufacturers like Taegutec, Sandvik Asia. Provisioning of appropriate technology, personal counselling was also undertaken.

Over 100 technological implementations were carried out in the cluster resulting in improvement in productivity by about 20% and decrease in rejection rate from 12% to 5%. The raw material problem was taken care of as Rajkot Engineering Association (REA) started procuring and distributing pig iron in bulk. Use of precision machines increased. Diversification into new and higher value added products has also started. Both national and international BDS providers like CMTI, NSIC and Indian Oil are now linked to the cluster. The local industry association- REA is now publishing News bulletin, procuring required raw materials in bulk, facilitating participation in international fairs. For the future, there is a need to establish a testing laboratories in the cluster. The cluster also requires to se cutting edge technology which requires high value investment. This can be done by establishing a CFC. Joint efforts are also required in marketing and exports.

Source: EDI, Ahmedabad

CS2: Wet-grinder Cluster, Coimbatore

The wet grinder cluster is situated in and around Coimbatore (Tamil Nadu). The 52 year old cluster comprises of 500 components suppliers, 150 assemblers, 50 composite firms. The major problems faced by the cluster include inadequate raw material supplies and financial resources, poor design and development, lack of direct exports and uniform product standards, poor institutional linkages and disorganized functioning. MSME-DI, Chennai intervened in the cluster in the year 2003 with technical support of NIMSME, Hyderabad. The implementation strategy was strengthening of the dormant Association viz. Coimbatore Wet Grinders and Accessories Manufacturers Association (COWMA), promotion of joint action through formation of consortia.

As a result of the intervention firms established linkages with dealers in Indore, Ahmedabad, Bhubaneshwar and Behrampur and realized on the spot sales of Rs. 50 lakhs. 30 members of three Consortia availed credit under MCGF Scheme of SIDBI. A CFC is being set up with grant-in-aid of Rs.99 lakhs by DC(MSME) and Rs.16.54 lakhs by the Government of Tamilnadu. A strengthened COWMA reduced VAT on wet-grinders from 12.5% to 4%. "Coimbatore Wet-grinder" was registered under GI Act. It is the first industrial product registered under GI Act in India. The future challenges include taking advantages under GI Registration and standardization of the product under GI and BIS, implementation of VAT by the cluster enterprises, continuing and adoption of design and development activities, creation of more consortia under MCGFS Scheme, enhancing exports, etc.

Source: NIMSME, Hyderabad

CS3: Bidri Cluster at Bidar in Karnataka

The Bidri cluster of Bidar is situated in the state of Karnataka. The cluster is spread around Janata Colony and the old city. It has 216 artisans, producing flower vase and products of metal & silver. The cluster is about 5 years old. The major problems of the cluster were old and dated designs and machinery, lack of working capital as well as direct access to markets. NABARD intervened in the cluster in the year 2003-04. The implementation strategy was to provide exposure for learning and development with the support of a local NGO. The major turning points were visits to urban markets and artisan product fairs and interaction with customers. The exposure visit provided the necessary stimulus and insight into the process of change. As a result of the intervention the artisans were organized into 15 SHGs and then federated to solve the long term capacity issues (on both market and procurement front). The artisans started getting work for full year compared to just 3 months of work earlier, resulting in increase in income by over 4 times. New designs were introduced through agencies like NIFT/NID and over Rs 1 million was disbursed to the artisans as credit for the first time in the cluster. Active support of the local bank and the office of DC(handicrafts) also helped a lot. The traditional art form got registered under the Geographical Indication (GI) Act. Future challenges include new machine, specialized electric furnace and raw material under CSR for zinc. They also feel the need for long term effective computer education.

Source: NABARD, Mumbai

Irrespective of the nature of the cluster, the outcome of cluster development initiative shows in the form of increase in sale, additional quality accreditation and investment, initiation of social security etc.

CS4: Stone Carving Cluster at Konark, Orissa

The stone carving cluster of Konark, is situated in the State of Orissa .The cluster is spread over 15 villages. It has 750 artisans employed in 66 firms producing handcrafted stone products. The cluster is about 50 years old. The major problems identified in the cluster were low margins, low capacity utilization, limited mechanization, lack of availability of raw stones and innovation. UNIDO intervened in the cluster in October 2005. The implementation strategy was to introduce modern tools, ensure regular supply of stones and to provide new design inputs, provide access to new markets and strengthen the supply chain. The major turning points were formation of 4 cooperatives and 4 sales outlets and setting up of 2 CFC, provision of direct linkage with the foreign buyers, and participation in Stone Mart.

As a result of the intervention 245 artisans have been organized into 16 associations. 150 artisans from the cluster have availed credit of Rs. 37 Lakh from MFI/Bank. 35 artisans have received artisan Credit Card. New business worth Rs 17 million has been generated. 35 cooperative and 17 household units have bought new tools worth Rs.400,000. 2 CFCs have been established. 112 artisans have been trained to produce new products. Capacity building of 8 associations has been done. One group has obtained mining rights to have direct access to raw materials. 90 new products have been developed. 250 artisans have received artisan I-cards and over100 artisans have been covered under Rajiv Gandhi health insurance. The future challenges of the cluster are to ensure good supply of labor and raw materials, introduction of new designs on a continuous basis and develop standardization.

Source: UNIDO-CDP, Orissa

Networks are the integral part of cluster development. The activities undertaken by the networks in a cluster vary with the maturity of the network, moving from activities that demands low investment and shows quick result to activities with high investment and longer gestation period. The continued existence of networks in a cluster depends on the past successful experience of working together. Even after a formal CDP is over, the network continues to deliver results for the cluster. We describe below 2 case studies of different vintage and by different institutions.

	Network	Implementing Agency	Started	Ended
CS5	Suvarnakar CFC	NIFT for Government of Gujarat	2001	2005
CS6	CORE	UNIDO - CDP, Orissa	2005	Continuing

CS5: Suvarnakar CFC, Ahmedabad

At the Jewellary cluster of Ahmedabad, a CFC (namely 'Suvarnakar CFC') has been established in Oct 2006 under the aegis of Suvarnakar Auyodogic Utpadak Mandali Ltd. Out of total budget of Rs. 1 crore, contribution of the beneficiary was Rs. 60 lacs. The remaining amount was provided by the Govt. of Gujarat. The main machine installed under CFC are bangle making m/c, gold testing m/c (imported from Germany), chain making m/c. Total cost of these 3 machines was 26 lacs. The basic objective was to introduce latest technology, get better finish etc. The machines installed in CFC are properly utilised and a revenue of Rs. 3000/- is generated per day (50 units are taking CFC m/c services per day). The association is presently working out a proposal to establish hall marking centre wherein people can get their jewelry hall marked locally and at a cheaper rate (other hall marking centres are located on private initiative at a distant place). This could be a potent source of income generation for the association and which could be further used for developmental activities.

Source: Survey Report

CS6: CORE, Rourkella

The Engineering cluster at Rourkela is situated in the state of Orissa. The cluster has 145 units. The total turnover of the cluster is Rs.75 Crores. UNIDO has been implementing a cluster Development Program in Rourkela since 2005. The major problems of the cluster were high manufacturing cost compared to other similar clusters. The implementation strategy was to benchmark the cluster with some good cluster and use the best practices to achieve cost efficiency. Consequently eight young entrepreneurs visited Trichy engineering cluster, saw the common procurement center of BHEL industrial Development and Service Society (BIDASS) and interacted with the firms. They also saw the working of common oxygen plant set up by BIDASS. The results showed that efficient procurement was the basis of competitiveness for Trichy. On returning they formed the Cluster of Rourkela Engineering Enterprise (CORE) - a consortium (network) of 15 units with a seed capital of Rs.1.5 lakhs. Negotiations by CORE fetched a discount of 12% on flexible billing terms. The effort was then extended to other consumables resulting in a saving of 10% instantly. Due to the extensive cost reduction the consortium could also bag a large order.

Source: UNIDO-CDP, Orissa

Chapter 3: Policy Challenges - Viewpoints of Stakeholders

3.1 Policy Challenges

While promoting the basic cluster specialty of joint action, policy challenges can be broadly classified into (1) optimum targeting and initiating development, (2) managing development and (3) monitoring and learning from development supported by divergent thematic needs of different typologies of clusters[24].

(1) **Targeting and initiating development:** To start with one needs to have a broad understanding of defining a cluster. Again, it is argued that, once a cluster qualifies a definition, what practical factors need to be considered for selection?

(2) **Managing development:** With cluster level interventions picking up, what are the critical issues for satisfactory implementation? Issues related to policy support for private sector and BDS providers are also being debated. Again, implementation at the ground level will require a flexible and efficient system that suits the cluster. Role of a dedicated non-stakeholder cluster development agent/executive (CDA/CDE) has also come up strongly. Also of critical importance are components, value and duration of support with special reference to relatively less endowed/poor stakeholders and ensuring their inclusiveness. Not the least is an enabling environment that is capable and supportive of such promotion, leading towards sustainable development.

(3) **Monitoring Development:** It is also essential to have effective outcome and creating a system for learning.

While many of these issues will be gauged later (in chapter 4) based on available literature (e.g. schemes, reports, etc.), a decade old experience of CDPs in India provides a repository of knowledge at various levels which also needs to be tapped. Accordingly the above issues were discussed informally with a range of (i) policy makers, (ii) practitioners - public and private as well as implementing and resource agencies and (iii) cluster stakeholders where CDP is ongoing/completed (Table 3.1). List of the stakeholders discussants appear in Annex 3.1. Their views along with emerging suggestions on various issues related to policy challenges appear in sections 3.2 to 3.12.

Table 3.1: Stakeholder Discussants

Number of		Number of	
Policy level Institutions	7	BDS/Technical and Financial Institutions	5
Resource Agencies	3	CDEs	3
Implementing Agencies	11	Associations/Networks	5
Firms/Artisans	10	**Total**	**44**

3.2 Defining a cluster

Contiguity of firms is important for promoting joint action.

Discussants felt that a cluster should have a minimum of 100 units. For north-east and hilly areas such number can be smaller. However, contiguity is important for promoting joint action. While some suggested that a cluster should be within a maximum radius of 25 kms, others felt that it should be a distance which can be

covered within two hours of time by local transportation by a stakeholder. However, village based clusters or clusters in the north east/hilly India will be naturally dispersed.

Some felt that largeness of a cluster is not an issue as majority of the stakeholders does not take interest to start with; in contrast, restricting cluster size artificially might close the door to a group of interested firms and can be a tactical mistake. On the contrary, if there is genuine contiguity, then it will be a political mess to define a cluster, to suit implementation, based on highest concentration.

On product range it was suggested that strict industrial classification will not be able to capture all clusters and at times such efforts may come up with irrelevant or too narrow a classification. Many a times multiple related products are made by firms in a cluster and describing them as different clusters will become an operational mess. Hence local knowledge/intelligence should be combined with product classification to define the product range of a cluster.

No database of services clusters are available.

While the above views hold good for existing clusters, some felt that from a totally different perspective, wherein a cluster (or a concentration of units to start with) is being created, the size of cluster can be small (e.g. a textiles park) or big (e.g. a food processing cluster with its backward and forward linkage). Again there is no database of services clusters. Even, the existing database of 388 traditional manufacturing clusters is inadequate as already work is going on in many more clusters. The quality of data is also inadequate to promote interest of related agencies to select the clusters.

3.3 Selection of clusters

While some institutions have multi-institution committees for selection, for most it is an internal exercise. At times some institutions use the norm for equal geographic distribution. Some institutions, especially those which cater to the needs of the poverty intensive clusters, are also using the norm for presence of Scheduled Caste and Scheduled Tribe population. It was suggested that selection should be preceded by an input-output framework. Here clusters of varied levels of maturity and different typologies need to be selected, although level of maturity of a cluster is sector dependent.

3.4 Implementation technique

There is need for holistic planning up to marketing and not piecemeal disjointed approach for any cluster. Business development service (BDS) providers and private sector value chain partners provide maximum benefit in the areas of marketing, quality, infrastructure creation, etc. There is need to support these stakeholders as per their capability. Many a time services of good BDS providers cannot be utilized due to high fees. In the absence (or difficulty) for creating any fixed norm, high service charges cannot be supported.

Again, different schemes define cooperation structure in different ways, while some looks for 'society', others ask for 'consortium'. Hence the definition should be uniform across the scheme of assistance. Local technical institutions should also provide services to the cluster. Improved industry-institute linkage to crate awareness about the requirements of industry and orientation of course curriculum of local ITI and colleges, as per cluster need (to some extent and wherever possible) is also required.

For some clusters there may be even need for perspective planning with support for enterprise development as well as general (as opposed to cluster specific) infrastructure development. For clusters requiring support of multiple agencies, the secretary industry of the state should coordinate the issues at the ground level. Programmes should be projected with tripartite agreements.

3.5 Choice of implementing agency and resource organization

There is huge dearth of trained implementing agencies. Such implementing agency has to be based in the cluster; resource agencies, with long run commitments, should also be preferably stationed in the State.

It was unanimously felt that there is a huge dearth of trained implementing agencies. Similarly there is absence of trained resource organization too. It was suggested that be it a resource organization or an implementing agency, it should have at least two trained persons and have an organization culture that promotes delegation, accountability and transparency. Implementing agency has to be based in the cluster; resource agencies should also be preferably stationed in the State with long run commitments.

Some suggested that apart from institutions District Industries Centers (DICs) can become implementing agencies, provided appropriate manpower planning is done. Some felt that banks can also become implementing agency but being a profit initiative they would look for tax sops for such promotional activity. Majority felt that it is very difficult to have industry associations as coordinating cluster initiative as an "implementing agency". Firstly there are very few associations which have such capacity and secondly, an association has relative comparative advantage in promoting broader policy level issues, infrastructure, etc., as compared to business issues, the latter being an important aspect for cluster development. See Annex 3.2 for selection criterion of an implementing agency.

3.6 Flexible and efficient support framework

Decision making process should be quick with pre-defined time limits.

Most of the cluster initiatives are public sector driven. There is more need for involvement of the private sector both as a CSR and even a profit initiative. Cluster stakeholder patience has very short gestation period and in ordinary circumstances, they prefer no change rather than uncertainty, hence decisions should be quick with pre-defined limits. Again, due to natural partial knowledge of cluster reality (which only evolves with time) to start with, action plan also goes under revision multiple times. Hence, approval for action plan, at a higher level leads to delays. At times activities planned do not adhere to time schedule as the stakeholders do not work on planned expectations due to multiple reasons. It was suggested that there should be adequate flexibility in altering an annual action plan both with respect to items and timings. There is also need for tools that can balance need for accountability with need for flexibility to match the cluster requirements.

3.7 Role of CDA/CDE

There is a near unanimity on the fact that there should be a dedicated person for managing development (CDA/CDE) in each cluster. CDA should be trained and be of the right attitude.

CDA must continue for at least three years in a given cluster so that their contribution will be substantive. CDAs taken from government organizations should not be given any other responsibility. CDA can also be appointed from the private sector. CDA must be stationed in the cluster. Well qualified CDAs are not willing to work at village level. Hence we need two types of CDAs - networking CDAs, who create trust and technical CDAs who give vital linkages, e.g. technical, market, etc. The CDA should be properly remunerated. For large clusters one can even have a team of CDEs with horizontal functional groups.

There should be a dedicated person (CDA/CDE) for developing each cluster.

3.8 Value and duration of support

Infrastructure support is of little use, unless the necessary trust has been created among stakeholders.

A cluster should be supported both for infrastructure as well as soft support in the areas of network creation, marketing, technology, quality, etc. The degree of support for infrastructure (hard) and other "soft" support varies from 20 per cent for soft inputs for SME clusters to even 80 per cent of soft support for micro unit clusters. Although a couple of respondents were not for supporting soft intervention at all. However, it was unanimously suggested that only infrastructure support is of little use, unless the necessary trust has been created among stakeholders through support in 'soft' activities. It is also imperative to first provide support for the 'soft' issues and thereafter provide 'hard' support.

The duration of support is suggested for maximum cases between 4 to 5 years of full-fledged holistic support. Support less than that many a times eludes inclusion of less endowed units. The nature of support has also been suggested in tapered form that increases during the first 3 years and decreases during the next 2 years for a 5 year intervention. The percentage support overall has been suggested at a maximum of 70 per cent.

The duration of support is suggested for maximum cases between 4 to 5 years of full-fledged holistic support.

Many a time support is not given or less than optimum support is given for cluster management (e.g. professional fees of the implementing agency or the CDA). This leads to slow or non-serious starter of the programme. Hence, appropriate cluster management cost should be an integral part of cluster development fund.

Innovation is and will increasingly be a challenge in the near future as the Indian economy keeps on maturing. More fund should be allocated for R&D initiatives in cluster as this involve risk. It was suggested that government should bear 90 per cent of such cost, 10 per cent should be borne by the cluster stakeholder as this will lead to involvement of the stakeholders. Innovation is also warranted in artisan clusters, which are facing the burnt of low mechanization and are all geared up to absorb small lot mechanization.

3.9 Inclusiveness

It was unanimously felt that less endowed firms get fewer benefits and the more endowed

firms get the maximum benefits. This happens due to less risk taking capacity of the relatively smaller units. Hence, one should make special efforts to identify and support the relatively smaller units. However, there should not be any pre-fixed generalized cut off ratio for identifying the poorest units. This will vary for clusters and should be worked out locally. In an artisan cluster, the local PRI system can be involved to identify the poorest units. However providing different levels of support for all activities will bring in divisions in togetherness in a situation where an oneness in industrial mindset is being pursued across the cluster.

3.10 Enabling environment

There is also need for capacity building of the local technical and financial institutions as well as line departments to understand the cluster concept and also the need as well as typology of support required for cluster development. There is also need for constant orientation and sensitization of top management of all concerned government departments, especially given the fact that transfers are a regular feature and without a wider coverage, continuity might be lost. Given the newness of this approach, there is also need for orientation of political leadership.

3.11 Sustainability

Sustainability should be measured both in terms of new economic opportunities as well as new institutional capacity created in the cluster.

Sustainability should be measured both in terms of new economic opportunities created as well as new institutional capacity in the form of associations/networks created/revived or technical institutions that have become proactive and are doing additional/ new roles for the promotion of the cluster. One also need to look into activities that have been initiated and have been picked up on a regular basis by the local association/networks/SPV. Instead if the units go back to exactly the same style of functioning, then the programme will not be termed sustainable. For associations, the percentage of developmental as against lobbying work being done by an association should be considered as an index of long term programme sustainability. This is an area, which the associations have not picked up as of now.

3.12 Monitoring, evaluation and learning

At one extreme, it was suggested that for a CDP promoting institution, M&E should be the only activity. All other activities should be hired out to professional agencies. It was pointed out that often there does not exist enough resources including trained manpower to monitor development. Internal monitoring systems of institutions were suggested as having limited capacity and at times too small to capture the vastness of development process initiated by a scheme. This leads to fall in efficiency of the implementing agency and weakens the entire process. At times there is lack of appropriate tools for efficient and continuous evaluation. Learning that emanates from monitoring are also not captured. Need was also felt for professional monitoring mechanism that ensures attainment of broad objective and also ensures continuous learning. It was also suggested that the process of monitoring can be done better if the initiative is looked after as a 'Project Mode' with customized deliverables.

Since most of the cluster schemes are promoted by Central Government Institutions, cost of follow up and regular field level monitoring will be high. It was suggested that here the DICs

can be trained to do field level monitoring and provide vital feedback as a professional agency. While overall programme monitoring can be done by an independent agency, the cluster level development should be monitored by a committee of local stakeholder and support institutions' group. However, support fund should be given directly to the cluster stakeholders through the implementing agency. It was also suggested that monitoring and evaluation process can be naturally strengthened through capacity building of implementers at the local level. There is also need for appropriate project designing with quantified deliverables. Cross scheme/programme, learning should be institutionalized at an appropriate level.

Cross scheme/ programme, learning should be institutionalized at an appropriate level.

CHAPTER 4

Policy Agenda for Way Forward

4.1 Backdrop

Despite a robust cluster based initiative in India, challenges remain in terms of: inclusivity, coordination, knowledge and institutional ability.

Over the last few decades, clusters as a tool for industrial development has gained ground globally. In less than a decade's time, India has 24 independently funded initiatives. Thanks to probably the largest number of documented clusters India has and the wide variety they exhibit with respect to typology based on technology usage (micro, traditional manufacturing and high tech) and achievements (underachiever, overachiever); that led several types of public institutions in adopting this approach, suited to the new mantra of liberalisation and privatisation signifying a greater role for the private sector and partnership based development approach. Despite a robust cluster based initiative in India, challenges remain in terms of:

- Inclusivity in terms of the objectives of the cluster initiatives, selection of certain geographical regions and type of clusters chosen
- Coordination that enables convergence and leveraging in terms of financial support from different public & private institutions and thematic areas of support such as environmental considerations, social welfare, credit inputs & infrastructure
- Knowledge about what works and what does not - methodological challenges
- Institutional ability at all levels to ensure effectiveness and efficiency of the initiatives

This chapter attempts to address these key issues based on global literature review on clusters (Chapter 1), analysis emanating from secondary and field based assessment (Chapter 2) and key policy challenges based on a range of discussions with a number of policy makers and practitioners engaged in cluster development. (Chapter 3).

The way forward provides actionable agenda for the policy makers, implanting institutions, private sector and other knowledge based institutions that have a role in the overall development arena. While this chapter does draw upon international experiences, the way forward is specifically meant for India in light of her unique conditions and steps already initiated.

4.2 Vision for a cluster based development policy:

The guiding vision for cluster policies should be:

(i) Coherent with macro policy agenda of inclusive growth

(ii) Compatible with current national enterprise structure and

(iii) Strategic to address the critical gaps

4.2.1 Coherence with macro policy agenda

Clusters as local socio-economic systems are essentially a part of the global and national socio-economic space. They not only draw from the wider context but also contribute towards it. Within the national socio-economic policy arena, there are specific sectoral policies that have a direct bearing on the clusters. Industrial development being a 'state subject' clusters also fall under the state policy domain. However, there are several areas where the national policy framework has an important role to play to address cross cutting gaps and ensure coordination. Therefore a national policy framework on clusters should complement the state's cluster based development policies.

An important choice that cluster policies need to make is whether to choose potential winner or loser clusters and if both, in what proportion. Internationally there are examples of all kinds. Some of the countries like Italy and regions like European Union chose to work on both, whereas most of the OECD countries have concentrated on promoting innovation among the high technology areas such as aviation, medical electronics, bio-technology, nano-technology and advanced research based pharmaceutical products. The lagging clusters in the current Indian domain largely comprise of micro-enterprise (including artisanal) clusters, which provide opportunity to either grow or diversify into different areas as per the potential and local aspirations. These are highly employment intensive and are an important source of non-farm income in a multi-livelihood space. Thus they deserve special attention and inclusion of social and environmental aspects in cluster initiatives need to become integral with the economic agenda.

4.2.2 Compatibility with current national enterprise structure

As seen above, India has 3 types of MSME clusters - high-tech or knowledge intensive, traditional manufacturing clusters and micro (including artisanal). The micro enterprise clusters are culturally and socially important from the view point of employment generation and poverty alleviation. Baring a few star clusters, typical characteristic of micro clusters is that they tend to cater to the local and regional markets[25]. The traditional manufacturing clusters are relatively technologically more advanced and contribute very significantly in terms of manufactured output and employment generation. The high-tech clusters are rather a recent phenomenon and seem to have come in existence over the last 10-25 years. These clusters are internationally well-linked clusters mainly for their markets and not in terms of production outsourcing. These clusters are relatively few in number and have not been documented so far.

4.2.3 Strategic to address the critical gaps

A country's future competitiveness depends on the progress on two dimensions viz., (a) individual cluster and (b) cross cutting issues affecting several clusters at the sectoral and regional level and thus the whole economy. While a number of initiatives have been taken for development of individual clusters, the cross-cluster issues affecting an entire sector in a 'joint action' mode have been largely ignored. The cross cutting issues need to be examined at the levels of funding, knowledge and implementation capacities. The deterrents included herein relate to lack of proper information base on clusters, inadequate institutional capacities in the public & private sector for implementation and knowledge support, lack of operational synergy across different public schemes of assistance among others. There is also a need for a relevant monitoring & evaluation system to ensure effectiveness and efficiency of the initiatives, where there seems to be a major gap.

Accordingly, the suggested **Vision for the Cluster Policy Framework** is as follows:

The Indian industrial and services sector economy develops into an inter-connected array of clusters with a strong & enabling all round environment around them to achieve higher levels of global competitiveness with inclusiveness and equity. Inclusiveness will be ensured by including the lagging clusters and supporting initiatives that not only ensure greater economic growth but also address adequately the social and environmental concerns.

The clusters will be developed with one of the following set of objectives for the 3 different set of clusters that characterise the Indian enterprise based economy:

- Ensuring dignified survival for the unemployed or under-employed people in the micro enterprise clusters and protecting them from further decline as long as it is viable to do so

- Sustain growth for furthering the socio-economic development of production or service clusters in the traditional manufacturing sectors; and

- Help build clusters in high-tech areas through diversification and support for emerging clusters in new areas of knowledge and innovation.

4.3 Achievability of Vision - Key challenges and their status

Achievability of the potential needs to be assessed on the basis of

(i) Adequacy of financial resources,

(ii) Appropriate information and knowledge base for implementation and

(iii) Matching coordination, monitoring and evaluation capacities at institutional level.

4.3.1 Adequate financial resources

Given the higher 'public good' nature, most of the cluster initiatives are substantively financed through public resources, whether in India or abroad. Judging from the current schemes and likely funds to be placed in the 11th Five Year Plan as deliberated in various documents of the National Ministries (to be approved), availability of finance does not seem to be a constraint. Moreover a number of potentially on-going schemes of assistance that can be harnessed to augment the resources for cluster based initiatives are being ignored at present.

Broadly the financial support is required for two types of inputs viz.

- Soft Inputs: such as marketing, training, network creation, research & development, design inputs, BDS provision, benchmarking, quality up-gradation, productivity improvement etc.

- Hard Inputs: relating to cluster specific infrastructure creation.

In case of infrastructure, the amount of financial support varies on a case by case basis, whereas for soft interventions require a support of Rs. 10-15 lakhs per cluster per year and also additional cost of implementation coordination. In both these cases level of support needs

to be linked to the degree of socio-economic viability of the proposed development interventions. Given the nature of local interventions characterising the multi-stakeholder participation and local empowerment, financial support that does not ensure proper implementation coordination at the cluster level, the efficiency and effectiveness of initiatives suffers.

4.3.2 Appropriate information and knowledge base for implementation

Effective cluster development initiatives call for integration of private sector efforts along with technical institutions. An assessment of the current scenario reflects a deep disconnect between the need (from private) and delivery currently (from public) at cluster level due to lack of adequate & relevant knowledge, poor inter-connectivity across institutions and lack of internal systems that enable the flow of information & knowledge. In fact there is a high degree of mistrust and lack of enough positive experience to facilitate flow of knowledge and best practices in some of the illustrated areas of research, technology, vocational training, design, social welfare, credit into the clusters, thus harnessing the available potential.

This calls for trials to be undertaken to develop relevant tools for mutual engagement at various levels. National and state level initiatives are required to push the public institutions to reach out to the clusters and customise knowledge and information delivery that can meet the required needs. However, the only source of inputs need not be public institutions. With increasing linkages between the national & international large enterprises both as buyers and mother enterprises in the private or public sector with a strong sub-contract SME base, scope for provision of relevant information and knowledge through this channel is very high. Cluster initiatives can harness this potential through fostering of linkages between the large and small enterprises across the value chains and enable knowledge transfer.

4.3.3 Matching coordination, monitoring and evaluation capacities at institutional level

While there are 24 independently funded cluster initiatives both at the national and state level, the capacities for coordination, monitoring and evaluation within the public institutions that have initiated cluster programmes is a cause of serious concern. A significant amount of funding support through a range of schemes has been earmarked for implementation through industry associations, consortiums, public-private partnership based special purpose vehicles (SPVs), NGOs and public institutions for this purpose and this calls for a good degree of analytical capacities relating to financial & management appraisals, regular process based monitoring, coordination with different type of stakeholders and flexibility on the cluster initiative designs to ensure compatibility with the changing requirements. This is a significant departure from the old school of thought, from being providers to facilitators.

A significant number of multi-stakeholder based cluster development initiatives will need to be implemented by the private sector institutions, particularly the industry associations, export promotion councils, networks and chambers of commerce. According to one estimate by Federation of Indian Small & Medium Enterprises (FISME), there are 3500 industry associations in the MSME sector primarily in the traditional manufacturing sector. Yet, a very few of them (probably less than 5%)[26] have any development activity implementation initiative record with an internal professional secretariat to implement. The operationally weak industry associations are inadequately capacitated to design and undertake relevant development initiatives for themselves. This is a major challenge as well as an opportunity for cluster development policy. There is no national or regional initiative to specifically undertake development of industry associations to promote selective micro development initiatives across the cluster, at least in

their areas of comparative advantage. In the 'micro' clusters, the level of organisation is still poorer with hardly any presence of such association per se.

The efficacy of cluster development process calls for awareness and training of public officials, particularly at the middle level about new practices on appraisal of initiatives, re-deployment of internal human resources and consequential development of appropriate internal monitoring & evaluation systems.

An assessment of the additional funds requirements to undertake initiatives suggested under para 4.1.1. and 4.1.2 is made separately at Annex 4.1. Most of these resources are likely to be drawn from the national public funds, considering the current support percentage between the national (91.4%) and state (2.4%) level institutions for various cluster initiatives. Private sector support will come only in specific activities that have a greater 'private good'. The gross additional public financing requirements excluding the individual cluster based initiatives is assessed to be Rs. 250 crores over a 5-year period under the 11th Five-year plan. These sources could be augmented through existing channels of schematic assistance relating to cluster development.

4.4 Role of public, private and knowledge based institutions under the proposed national policy agenda

The proposed agenda is discussed around the roles of national government, state governments and the private sector. The inputs provided herein are expected to enable synergy across various initiatives through information building, knowledge sharing, implementing centrally and regionally coordinated initiatives in the clusters.

4.4.1 National and State Government

A national cluster policy should be framed to integrate with macro economic policies and social development objectives.

It is proposed that a **national cluster policy** be framed to integrate with the macro economic policies and social development objectives. In specific, the national government should undertake the following:

- **Strengthen cluster information base:** Build up new database on clusters for sectors where it does not exist, strengthen the existing database where it is deficient, particularly in terms of social & environmental parameters and classify the existing database of clusters to identify common areas of assistance and with options for synergy across various ministries and knowledge institutions

- **Funding of cluster initiatives and their management:** Make available adequate funds to the implementing agencies (public or private institutions) through various schemes of assistance administered through different ministries and help up-grade their capacities to manage the initiatives.

- **Enable knowledge sharing across states** and institutions on best practices and methodologies relating to cluster development based initiatives.

- **Coordinate common programmes of technical assistance to clusters** that cut across different states and draw upon common sources of knowledge, institutional framework and best practices. The initiatives in this regard relate to BDS provision, international linkages and investment promotion from abroad.

- **Initiate common programmes for thematic inter-linkages:** Undertake initiatives around specific thematic areas around common needs of clusters. Such initiatives help to build an interface between specific union ministries and state departments and their practical application in clusters. These areas relate to interfacing clusters with R&D institutions, social welfare departments, environment management, vocation training and technical colleges to illustrate a few.

- **Undertake capacity building initiatives** for local development institutions, industry/ micro-enterprise based associations and regional resource institutions through largely public funding.

- **Ensure that public development schemes focus on inclusivity** of growth and accordingly relevant monitoring & evaluation frameworks to ensure greater effectiveness of expected outputs.

State Government: The state level governments should essentially be responsible for coordinating implementation of clusters initiatives in their respective states through national and state level funding, leveraged by private sector pooling of fund. The state governments should be expected to draw state policy framework on clusters that in specific should ensure:

State Governments should take lead in coordinating implementation and institutionalising knowledge for upscaling of clusters initiatives.

- **Provision of funding support to supplement the national resources** to support cluster initiatives, implemented significantly through local industry associations and other fora.

- **Enable knowledge sharing within the state** across clusters on best practices and methodologies and also promote cluster to cluster learning.

- Draw **state level policy framework on clusters** that integrates with the overall macro economic and social development policy and objectives at the national level.

- Provide **funding and policy support for capacity building** to the nationally funded and coordinated initiatives for local development institutions and industry/ micro-enterprise based associations.

- Set up a **separate cluster cell in the department** and designate a nodal resource organisation to coordinate, support and monitor cluster initiatives in the state.

- The specific stages for any **state government to take up cluster initiatives** are detailed as under:

    - Understand relevance of clusters through identification of local clusters and compile basic information about them.

    - Decide on the key objectives for cluster based development and select clusters for intervention over more than one phases. The first phase is usually the pilot phase meant for clusters where chances of success are higher.

- Undertake initial cluster analysis of the chosen clusters for intervention in the pilot phase and developing vision for them
- Draw up specific activity framework in the short, medium and long term with stakeholders
- Coordinate the execution of the collaborative action plan in the clusters
- Undertake a process review of initiatives and assessing the gaps therein
- Based on the learnings drawn from the pilot initiatives, expand the scale and scope of interventions

4.4.2 Private sector

Cluster development cannot succeed without an active participation and sharing of responsibility by the private sector.

Cluster development cannot be expected to succeed without an active participation and sharing of responsibility by the private sector in terms of conceptualisation on development initiatives, partial funding and significant role in implementation. Accordingly, policy instruments need to promote these institutions as follows.

- **Strengthen capacity of** macro level chambers of commerce & industry to initiate cluster based initiatives as implementing agencies: Ideally, such agencies should not be cluster (product) based associations.

- **Strengthen MSME associations to initiate development initiatives in clusters:** The industry associations have to play an active role to increasingly undertake development initiatives in partnership with pubic institutions, knowledge partners, R&D institutions and value chain partners. Smaller groups of enterprises need to join hands as networks and consortia to undertake initiatives for their limited private interests.

- **Roles of other private agencies:** Promote and facilitate private sector enterprises which are natural value chain partner to cluster enterprises.

- **Promote creation and facilitate existing BDS providers** through training and also by supporting their important role in cluster development. There is also need to recognise the various levels of BDS providers for ensuring their services through appropriate remuneration for the benefit of the cluster.

- **Major areas of private sector initiatives:** The major areas of their work will involve
  - Development & management of local cluster specific infrastructure
  - Contributing private investment to select "public goods" for social development through philanthropy and compliance
  - Nurturing of local suppliers
  - Undertake and fund collaborative research & development

- Provision of information to the industry members through directories, setting up of information exchanges, coordination of BDS providers
- Benchmark with better clusters within India and abroad
- Disseminate best practices learnt
- Undertake joint procurement
- Undertake demonstration projects
- Organise joint fairs & delegations
- Develop curricula with local technical & educational institutions
- Undertake liasoning with specialised infrastructure providers
- Attract investments
- Work with the government to streamline regulations and
- Establish testing & standards organisations.

4.4.3 Knowledge Institutions

Technical institutions, research organisation, vocational training centres have an important role to play by:

- **Undertake joint research with cluster stakeholders** including machinery suppliers, speciality input suppliers and major customers.
- **Undertake assessment of emerging skill requirements,** develop suitable joint (along with industry) training curricula along with local industry and run training programmes jointly funded with the government and the industry.

4.5 Policy Agenda for Action

Cluster based development policy provides an opportunity for focused attention to the diverse sectoral & socio-economic local environments as also to integrate, coordinate, synergise the efforts of pubic, private and knowledge based institutions, both vertically and horizontally. The cluster policy therefore has seemingly contrasting tasks to balance the need for flexibility to meet diverse requirements and yet coordinate among those diverse efforts for ensuring synergy. This section details a list of specific policy measures expected to lead to effectiveness of the cluster based development approach by ensuring an enabling environment, to be put in place. Thus it goes a step forward from the existing stage of multiple cluster development initiatives undertaken by different ministries, institutions, departments and the private sector as per their individual area of focus.

1. **Avoid a common definition except for statistical enumeration of clusters:** Several countries have spent enormous amount of time and resources debating what is a cluster.

It is suggested that while a framework[27] for drawing up the definition of a cluster be placed as a part of the cluster policy, any attempt to provide a single definition should be avoided. Further more, state governments and institutions with specific areas of focus may draw up their own criteria to define clusters depending on the suitability in their context. Local knowledge/intelligence should be combined with product classification to define the product range of a cluster and the distance that enables approachability among cluster actors.

2. **Undertake a national cluster mapping for targeted policy focus:** For an effective cluster policy formulation, drawing up of schemes of assistance, allocation of resources, setting up programme implementation coordination and their monitoring over time, it is important to identify the common areas that relate to different clusters. Aggregation of significant issues across states and sectors will help to build synergy among and between public, private and knowledge institutions. For example, Union Ministry of Environment & Forest and related knowledge institutions will need a listing of clusters across pollution intensive sectors where they have a significant role to play. Similarly, Union Ministry of Science & Technology along with their state counterparts and other knowledge institutions will find it useful to assess the clusters that call for significant S&T related inputs. Such information on all India basis is not available today and will need to be built.

   Second, enumeration of clusters across services and knowledge intensive industries are not available that should be mapped in order to direct specific attention around fast growing sectors of tourism, health, information technology, research, education, among others. Third, an enumeration of clusters around specific agriculture products and horticulture products also need to be mapped to encourage food processing industries and procurement. Fourth, an integrated framework to benchmark the clusters based on the diverse areas of their performance will enable various relevant public and private institutions to focus their attention where and when their focus is most desired. For example, a rating of all the electroplating clusters on environment standards and the extent of their compliance can be extremely helpful for public and private stakeholders.

3. **Establish an Inter-ministerial Coordination Focal Point:** A permanent inter-ministerial coordination focal point should target the review of all ongoing development initiatives, identify areas of synergy, suggest necessary institutional arrangements for implementation, get studies organised, draw upon international best practices and finally evolve a communication strategy to disseminate them.

4. **Develop a cadre of human resources to initiative cluster development:** Cluster based approaches are significantly process based and therefore more intensive in terms of quality human resources to be deployed for development coordination. The role of a local facilitator, called either as 'cluster development agent/executive' (CDA/CDE) as in India or 'cluster broker' as is internationally better known, becomes critical to mobilise local resources and leverage public & private funding around select key critical areas.

   The hard bit of knowledge about clusters in terms of skills, infrastructure and technology can be acquired based on education, training and investment, but the know-how of the process involved and the know-who (people & institutions willing to engage themselves into collaborative forms of working) can be developed only based on work experiences and personal connections. This knowledge of local social capital requires a process of intense engagement with the local actors and institution. The ability of the 'CDA/CDE to learn from enterprises, institutions and buyers outside the cluster which s/he can link up with is also important. Yet the human resources available in this domain of expertise is scarce and need to be augmented.

5. **Prefer cluster activation to new cluster creation:** A very important aspect that policy makers have to deal with is whether to create or support clusters. In this light, policy makers and practitioners alike have reached the conclusion that activation of existing cluster be preferred over cluster creation, unless the conditions warrant otherwise. It is because cluster activation leverages upon what already exists in terms of production systems, market linkages, institutional framework and value chain linkages and therefore are less resource intensive, low risk development venture, provides quick returns and draws upon a coalition of private and public sector stakeholders.

   On the other hand, cluster creation requires to develop a production system that requires huge mobilisation of public and private investment and hence highly resource intensive, driven by the public sector intervention, requires sustained finances, is fraught with high failure rate and provides returns in long term.

   Yet cluster creation may be required in conditions where the local economy does not have any significantly important areas of economic activity, or the existing economy is dangerously linked to one or two sectors which may have an endangered future.

6. **All states with clusters should be encouraged to initiate cluster based development:** Currently there are only six states have undertaken cluster based development, while the scope is immense. This will call for initial sensitisation of the public representatives and top management of the concerned state government departments through short-term programmes that can be undertaken by some of the premium institutions like Entrepreneurship Development Institute of India, NIMSME, etc with adequate background, understanding and experience on cluster based local development.

7. **Set up cluster development cells within the funding agencies and state government departments: I**n each state, a cluster development cell with adequate quality human resources be established for management of cluster based development, preferably within the pubic funding institutions where process based monitoring is an integral component of all the initiatives. The cells should be provided necessary room for flexibility, development of qualitative indicators, room for internal learning & correction and yet be accountable. The states should undertake training and orientation of all the relevant department officials (e.g. fisheries, handlooms, handicrafts, industries, food processing, labour & employment, vocational training etc.) on cluster development approach, methodology and how to integrate their departmental activity in line with specific cluster based requirements.

8. **Strengthen some of the existing development agencies to become resource centres:** In order to ensure quality of cluster initiatives, it is suggested that at least 8-10 national and 25-30 regional institutions be groomed to support the implementation of cluster based development initiatives. Such institutions need not be created afresh, but should ideally be drawn from among those that have a previous track record in development initiative, whether from the public or private sector. Currently there are only 3-4 national institutions with good standing and only 3-4 regional institutions undertaking such a work. Moreover, research studies should be instituted with support from some of the leading think-tanks, management institutions and other research institutions to develop cutting edge methodologies, tools of assistance, evaluation techniques, undertake external evaluations, benchmark clusters and suggest policy measures on a regular basis.

9. **Undertake a national initiative on export promotion** across specific clusters that have a high potential to grow. This should be undertaken by the National Government through Ministry of Industry & Commerce with support drawn from specialised agencies to help clusters link up with international value chains and investment promotion to plug the gaps therein.

10. **Undertake a national initiative to achieve environmental compliance** across specific clusters to ensure environmental compliances. This initiative should also be nationally coordinated through Ministry of Environment with support drawn from specialised agencies and implemented by a range of public and private institutions.

11. **Undertake a nationally coordinated initiative on select social issues** such as working conditions, provision of micro-credit needs of workers community, living conditions and safety aspects around specific clusters with scope for significant improvement. Such initiatives may be coordinated by the relevant ministries such as Ministry of Social Welfare, Ministry of Labour, Ministry of Tribal Affairs with linkages drawn from NABARD, Micro-Finance Institutions, National Minority Development Finance Corporation among others. Initial efforts in integrating micro-credit provision through micro-finance institutions (MFIs) across select handloom and handicraft clusters in Orissa have demonstrated the potential to alleviate poverty. Similarly initiative by a local industry association to ensure improved social compliance in Jalandhar is a case in point. (See box below)

Box 4.1: Sports Goods Manufacturers at Jallandhar take social responsibility seriously

Thirty soccer ball manufacturers and exporters at Jalandhar in Punjab set up Sports Goods Foundation of India (SGFI), constituting 80% of the export turnover of the cluster in 1998. This came about in the face of international media allegations about child labour being used in the industry. They set up a self-monitoring transparent mechanism across 3000 stitching centers in rural areas of Jalandhar where 15000 artisans hand-stitched inflatable balls for the exporters. Encouraged by the success of the initiative, the Foundation has since ventured into education for the children of their stitchers through 27 special schools and 30 free tuition centers. Besides 4 schools are being run successfully with funding support through the local government. On the health front, the business community has undertaken 25 free medical checkup camps that have helped about 9000 workers. In the year 2006, it was felt that some of the stitchers could be displaced by the onset of machine stitching. Accordingly, under a cluster initiative by UNIDO, the Foundation has organized several SHGs to help them find alternate livelihoods and link up credit provision through banks.

There is need to develop specialised financial products that cater to the specific needs of sectors and clusters to augment credit flow to the micro and small enterprises.

12. **Establish cluster-oriented free trade zones,** industrial parks and other common facilities that can help clusters realise their growth potential and upgrade facilities that individual enterprises may find difficult to achieve. Such initiatives need to be taken by respective ministries such as Ministry of MSME, Ministry of Textiles, Ministry of Industry & Commerce, Ministry of Food Processing and relevant departments in the respective state governments.

13. **Undertake initiatives to develop specific financial products suited for clusters:** Different sectors and clusters have specific credit needs that are not fulfilled by the limited number of financial products that the various banks currently have in their domain. One of the positive measures that can help augment

credit flow to the micro and small enterprises is to develop specialised financial products that cater to the specific needs of sectors and clusters. Some of the banks particularly in the private sector have designed 'downscaled' products in the last few years with success. Reserve Bank of India had also identified 60 clusters with high success potential to link credit to SMEs. Small Industries Development Bank of India (SIDBI) has initiated a project in this regard with support drawn from multi-donor funded facility in the year 2007.

Box 4.2: Mutual Credit Guarantee Scheme - The Italian Experience

The Italian Mutual Guarantee Associations (Confidi) are solidarity groups established, in the form of non-profit consortia or co-operatives, by small firms without access to credit. They have strong local ties and are promoted by the active assistance of artisan associations and local chambers of commerce. A Confidi has a large member base, implying a vast amount of funds for back guarantees. The small firms directly contribute to create a risk fund, which provides mutual guarantees to their members for borrowing finance from the banking system. Additional funds are contributed by external support entities, such as Local Authorities, Chamber of Commerce and Industrial Associations. Through their capacity to reduce asymmetric information, these associations are able to achieve considerable financial and economic advantages.

Confidi evaluate their members' request of loan and recommend them to the lenders, provide guarantees and pursue defaulting borrowers for loss recovery. They do not extend credit directly to their members. The decisive characteristic of Confidi is that they are based on social capital in addition to financial capital. Confidi have a competitive advantage in screening and monitoring borrowers as well as in post-claim loss recovery over other forms of guarantee organizations and banks due to their social proximity to borrowers. Confidi have extensive knowledge of the operating sector of a member and are thus aware of factors such as competition within the sector, market trends or production techniques.

Additionally, they assess the viability of an applicant's project by taking the entrepreneur's background, business performance and reputation into account and are able to make better-informed decisions than banks. Since defaults of Confidi members are about 10% lower than in the case of non-guaranteed loans (in the case of well structured clusters like those in Marche the default percentage is less than 1%), banks actually compete with each other to work with the local Confidi.

14. **Draw up initiatives that help select clusters to undertake innovation** by linking them up with international value chains and international benchmark clusters. Most of the currently established technology development institutions tend to focus their initiatives for the upper end of the clients in SME sector, thus benefiting only a handful few. Ministry of Science & Technology through its several affiliated organisations and National Manufacturing Competitiveness Council (NMCC) with support from Ministry of MSME may take lead to evolve the level of technology and innovation across select sectors and clusters. This can be enabled by:

- Provision of financial support and knowledge linkages to early innovators to help them develop new products, services and processes
- Sponsoring independent testing, producer certification and rating services for cluster products/ services
- Linking up with high-end buyers of cluster's products and services
- Drawing up specific multi-stakeholder initiatives for research to commercialisation of new ideas translated into beneficial products, processes and practices.

- Linking up research & development programmes of the publicly funded laboratories with private sector participation and steering. (See Box below)

Box 4.3: Rajkot Diesel Engine Cluster: Network for common R&D

The Diesel Engine Cluster Rajkot, Gujarat was facing competition from imported light weight Diesel Engine (DE). Because of the light weight characteristics people could carry it in cycles and other rural transport system. Thus it could penetrate the rural diesel engine market within a short time span. The local manufacturers of relatively heavy weight DE started experiencing slowdown in market sales. Moreover, sales realization also declined in export market especially in African countries. 7 firms manufacturing DE in Rajkot joined hands and formed an informal network under a cluster initiative by Entrepreneurship Development Institute of India (EDII), funded by Ministry of MSME. The objective of the network was to develop a light weight DE which has a potent demand in the local and abroad market. Moreover, it was also believed that the light weight DE could reduce material cost and enhance cost competitiveness. Thus the consortium engaged itself in R&D work. Apart from utilizing in-house expertise, experienced technical persons from outside were also engaged in this endeavor. After a number of trials and error they could finally develop a light weight DE as per the market requirements. Being a new initiative, no one was quite sure of the success, yet the members thought it prudent to take a calculated risk and invest on R&D work. It is quite likely that the new product will be launched in the market by Jan 2008.

15. **Draw up national and regional initiatives to augment the supply of skilled human resources** to the clusters that are facing acute shortages in the wake of emerging high demand supply gap. These initiatives should be nationally coordinated but implemented at the National and State level depending on the domain). There are successful pilot examples available such as shoe manufacturers up-gradation programme undertaken at Agra for 60,000 workers by CLRI in the year 2005-06 (see box below), 100 workers for protective equipment stitchers at Jalandhar by Deptt. Of Science & Technology (DST), 400 workers for garment stitching in Ludhiana, Welders training programmes at Tiruchirapalli with support from DST. This would require:

- Reorientation of the curricula of the existing educational and technical institutions (State Government and private sector).

- Training of the existing faculty by providing them with necessary exposure to the small enterprises and augmenting the faculty resources by getting entrepreneurs, BDS providers and supervisors to also become special faculty members (State Government and private sector).

- Involvement of the local and sectoral industry associations along with machinery suppliers to work with existing institutions (State Government and private sector).

- Undertake workers' certification programmes with grading to help them undertake jobs suitable to their potential (Nationally coordinated, State Government implemented).

National Ministry of Labour & Employment in collaboration with International Labour Organisation has in the year 2007 begun to assess the potential of scaling up skill development and formalisation of the same while targeting them on specific clusters.

Box 4.4: Standardisation of training for shoe workers in Agra

Agra is home to shoes in India. More than 100,000 artisans earn their livelihood from shoe making. The workers were only able to get work in 4 months in a year. In the meantime, around 30 large firms in the organised sector needed skilled operators (new entrants) in the areas of stitching, cutting, lasting, pasting and sole attaching. The total number of formally trained operators available in entire India is estimated not to exceed 1000 per annum. Younger generation in Agra is not inclined to take up the same vocation. Central Leather Research Institute (CLRI) with support from DIPP under Human Resource Development Mission undertook an initiative in the year 2006 to target 60000 artisans. During the now concluded initiative, 40,000 artisans have been assessed as per their skills and certified as A, B and C grade operators in different type of operations. In the next phase short-term modular curriculum varying from 1-3 months will have to be developed to upgrade the assessed artisans.

16. Leading chambers of commerce and sectoral associations to initiate cluster development initiatives: The national, state level and sectoral industry associations must initiate their own cluster development initiatives with or without support from the public funds. This would not only enable to build private sector capacities to design and implement their development initiatives but also set new benchmarks among the public and other knowledge based development agencies to augment the quality of such initiatives. 'Confederation of Indian Industry' (CII), 'Federation of Indian Chamber of Commerce & Industry' (FICCI) and 'Indian Machine Tool Industry Association' (IMTMA) have undertaken successful initiatives in certain sectors, with some good successes to emulate. These need to be up-scaled significantly.

Box 4.5: Indian Machine Tools Industry sets new benchmark

The machine tools cluster in Bangalore is the largest concentration of machine tool enterprises in India with 400 enterprises and total revenue of Rs 300 crores in the year 2004.Under a cluster development initiative by UNIDO (1999-2003), it was identified that common procurement, joint marketing, skill development and setting up of common facility for exhibitions could help the enterprises grow significantly. While the initial start was provided by dynamic external facilitator under the development initiative, the local chapter of Indian Machine Tools Industry Association (IMTMA) took upon itself to not only continue the development initiatives in Bangalore, but also extend to other machine tool clusters in Ludhiana, Ghaziabad, Pune and Rajkot. Once the trust among members was strong enough, a total of 71 different activities were undertaken during May 2003 to March 2005 that cost the association and its members Rs. 70.55 lacs, but led to gross quantitative return of Rs. 298.08 lacs thus reflecting an output-input ratio of 4.2:1. Besides the measurable outcomes, the association members have felt a closer bonding among themselves, stronger association, increased linkages between public & private institutions and generated confidence to undertake increased investments for new markets, including the one of China.

17. Support initiatives for cluster development by large private/public sector enterprises: It is in the business interest of the large private sector enterprises to build up capacities of their SME supplier firms. Direct interest taken up by the mother enterprises will only induce positive response among the supplier enterprises and therefore most of the initiatives will be self-funded. However certain specific initiatives where direct business profits are low, especially in the small to medium term, public funding may be called upon in areas such as capacity building, setting up of common facility centres, augmenting local industrial infrastructure and social initiatives meant for the benefit of local communities and labour welfare. Aggregation of sufficient quantify of supplies especially from the unorganised sectors such as handicrafts and handlooms calls for financial stakes and capacity building to be taken up by large buyers. One initiative in this regard taken up by Fab India, a

handloom and Khadi garments/furnishing retail chain has based on a successful model in Chanderi (see box below), decided to upscale the initiative across several more clusters in the country through private equity shared along with the artisans and ICICI bank.

Box 4.6: Up-end marketing by private sector

Fab India is an established handicraft retail outlet with branches all over India. In July 2004, at the linkage support provided by the local MP, after several rounds of discussion, the core buying team of Fab India visited Chanderi to explore the possibilities of bulk Purchase. After initial discussions and assessment of Bunkar Vikas Sansthan (BVS), an organization comprising of the SHGs of local artisans, Fab India decided to open its own office in Chanderi and also signed an MOU with BVS. The MOU with Fab India ensured BVS an order of Rs. 50 lakhs in the first year with a likely increase of Rs. 25 lakhs every year. BVS was given the responsibility of managing the production of its SHG and through them with other SHGs in the cluster. The CEO of BVS was entrusted withthe responsibility of managing the entire business. Actual sales to Fab India are estimated at Rs 27 lakhs in 2004 and Rs 42.4 lakhs in 2005. The figure is likely to reach Rs 70 lakhs in the year 2006. While the CEO of BVS was the chief manager to start with, soon a number of weavers rose from the ranks to deal directly with Fab India. The activities with Fab India trained the weavers in timely and quality production.

18. **Support cluster-specific transportation, communication and other infrastructure** as per the cluster requirements where needed. These initiatives should be implemented preferably on PPP basis but it need not necessarily be the only way. Cluster stakeholders stake in terms of financing and management should be ensured with safeguards to ensure wider participation and higher support for weaker clusters.

Box 4.7: Kalady Rice Millers Consortium Pvt. Ltd.

Kalady Rice Millers Consortium (KRMC) is a special purpose vehicle (SPV) that was formed in October 2003, as a private limited company. It is situated in the Kalady Rice Mill cluster of Ernakulum District, Kerala. The consortium has 44 members. The cluster firms were losing large sums as they were unable to sell or use the rice bran (which is a high value yielding by product) as their yield was low. The cost of bran is normally inbuilt into the sale price of rice and thus even their rice was becoming overpriced. This triggered the need for setting up the bran extraction plant by firms that were otherwise competing. A bran extraction plant worth Rs. 50 million with a capacity of 3000 MT was set up by the network by availing a loan of Rs 15 million, own fund of Rs 35 million and an assistance of Rs. 500,000 from Government of Kerala under public-private partnership. Subsequently it has set up a testing laboratory, weigh bridge, mill store, training Institute and a high yield rice cultivation project spread in 4 acres. The consortium is in the process of setting up a rice bran oil refining plant with the support of DC(MSME), under MSECDP (Government of India). The consortium has initiated product innovation with research support of CFTRI and looks for higher project support for the risk involved.

19. **Support cluster specific information compilation in the areas of** BDS providers listing, subcontract exchanges, product & process standards, technical and other support institutional listing, raw material and machinery supplier listing, bulk tender requirements etc. and dissemination mechanisms across clusters. This can be done by sectoral industry/ artisan associations to implement failing which state agencies can coordinate.

20. **Undertake a national initiative to strengthen capacities of the industry associations** to increasingly undertake collaborative development initiatives in contrast to provision of only lobbying services to their members. These initiatives should lead to rating of industry associations and other business membership organisations (BMOs). The BMOs should

be horizontally linked with one another within each distinct sector as also geographically across diverse sectors, duly federated at the national level to address issues that need to be dealt with at different levels. Such initiatives may be nationally coordinated, implemented by sectoral/ regional associations and other sectoral agencies with support also drawn from the state government. Chambers of commerce and apex industry associations have a significant role to play in providing knowledge inputs, training to the secretariats of cluster specific associations and linking them up with national and state level policy.

21. **Undertake national and regional initiatives to augment the supply of key business development services (BDS):** There are five key areas that require augmentation for providing suitable BDS for the clusters. These are international marketing, technology, financial services, designing and management inputs. One can draw lessons from the some of the successful initiatives in the past that have helped to augment both from the supply and demand side of BDS.

22. **Follow an appropriate framework for monitoring & evaluation (M&E):** M&E framework for cluster initiatives should ideally enable corrective action during the ongoing process and provide policy lessons to re-work strategies at the cluster level and across the clusters for policy makers. For this purpose both quantitative and qualitative information needs to be accounted for since both have their significance that complements each other. New tools need to be evolved that balance accountability with flexibility. Excessive focus on standardisation and uniformity for administrative convenience leads to loss of focus on process based local strengthening and customisation as per specific local needs. There are three broad levels at which M&E needs to capture information to undertake corrective measures when they can be undertaken. The lowest level is at the **cluster level,** second one at the **scheme/programme level** and the third is at the **policy level.**

At the cluster level, the results to be measured should be:

- Economic benefits by counting the increased profits, improved turnover, expanded capacities, increased credit off-take, local infrastructure set up,

- Social changes including the extent of collaborative behaviour improvement measured through number of collaborative initiatives, strengthening of local associations, forging of new public-private partnerships, employment levels, working conditions and safety

- Environment sustenance by counting the extent to which environment damage could be reduced, recycling of natural resources undertaken etc.

At the scheme/programme level, the results to be monitored should be:

- Impact on programme objective.

- Contribution by other agencies and private sector.

- Cluster based M&E at the Ministry level.

- Documentation and dissemination of learning

- Upscaling

At the policy level M&E may be done based on the following criteria:

- What is the extent of synergy enhancement among various cluster initiatives both in terms of funding, information and knowledge flows among public and private institutions?

- What is the extent to which institutional capacity gap has been bridged?

- What is the extent to which cluster initiatives have become private sector driven in terms of their management as well as funding of local development initiatives that may be motivated either based on business potential and/or social responsibility factors.

- How have the cluster initiatives met the diversity of objectives within the overall vision of inclusive development and growth? Regular ratings of clusters on various factors over a 3-year time frame can help assess the progress or otherwise.

Annex 1.1

Clusters Around the World (Excluding India)

	Nation	Total No. of Clusters	Hi-Tech	Traditional Manufacturing	Artisanal
Australian sub continent					
1	New Zealand	10	6	4	-
2	Australia	4	1	3	-
	Total	**14**	7	7	-
	%		**50**	**50**	**0**
Asia					
3	China	101	11	77	
4	Pakistan	43	-	32	11
5	Thailand	35	2	28	5
6	Bangladesh	23	1	17	5
7	Japan	18	15	3	-
8	Sri Lanka	15	1	12	2
9	Palestine	9	-	9	-
10	Nepal	8	-	-	8
11	Israel	6	1	5	-
12	Philippines	6	-	6	-
13	Jordan	4	-	4	-
14	Maldives	4	-	-	4
15	Bhutan	3	-	-	3
16	Lebanon	3	-	3	-
17	Singapore	3	1	2	-
18	Malaysia	2	2	-	-
19	Taiwan	1	1	-	-
20	Bahrain	3	1	1	1
21	Kuwait	3	-	3	-
22	Qatar	8	-	7	1
23	Oman	24	4	7	13
24	Saudi Arabia	21	4	10	7
25	UAE	17	5	6	6
	Total	**360**	49	232	79
	%		**12.3**	**69.7**	**18**
Africa					
26	Morocco	5	1	4	-
27	Kenya	4	-	4	-
28	South Africa	2	-	2	-
29	Ghana	1	-	1	-
30	**Total**	**12**	**1**	**11**	-
	%		**8.3**	**91.7**	**0**

	Nation	Total No. of Clusters	Hi-Tech	Traditional Manufacturing	Artisanal
Europe					
31	U.K.	165	36	126	3
32	Italy	152	3	149	1
33	France	95	7	88	-
34	Germany	31	1	30	-
35	Denmark	19	4	15	-
36	Switzerland	13	-	13	-
37	Finland	11	-	11	-
38	Austria	7	-	7	-
39	Netherlands	6	1	5	-
40	Spain	6	-	6	-
41	Portugal	4	-	3	-
42	Sweden	4	-	4	-
43	Andorra	2	-	2	-
44	Ireland	2	1	1	-
45	Belgium	1	-	1	-
46	Norway	1	-	1	-
47	Turkey	1	-	1	-
	Total	**520**	**53**	**463**	**4**
	%		**10.2**	**89**	**0.8**
North America					
48	U.S.A.	152	20	132	-
49	Canada	8	1	7	-
50	Mexico	7	-	7	-
	Total	**167**	**21**	**146**	-
	%		**12.5**	**87.5**	**0**
Latin & South America					
51	Brazil	4	1	3	-
52	Ecuador	3	-	3	-
53	Costa Rica	2	1	1	-
54	Venezuela	2	-	2	-
55	Chile	1	-	1	-
56	Colombia	1	-	1	-
	Total	**13**	2	11	-
	%		15	85	0
	Grand Total	**1010**	**119**	**836**	**55**
	%		**11.8**	**82.8**	**5.4**

Note: (a) List of clusters for the individual countries is no way exhaustive and is a reflection of the extent of data collected. The actual numbers are much more. (b) Since data for India is quite exhaustive, we have shown it separately, least it will bias the table.

Sources: P. Bianchi, L.M. Miller, S. Bertini (1997)
http://www.lged-rein.org/solar/solar_sre_clustervill.htm (Solar Energy Programme under Sustainable Rural Energy, LGED)
www.smeda.org.pk (Small and Medium Enterprise Development Authority)
www.ahan.org.pk {Rural Enterprise Modernization initiative of the Government of Pakistan (AHAN)}
www.competitiveness.lk/ceramics.htm (The Competitiveness Programme, Sri Lanka)
Dr.Claas Van Der Linde (2002), The cluster meta-study- list of clusters, Harvard Business School.
OECD Reviews of Regional Innovation, Competitive Regional Clusters, National Policy Approaches, OECD 2007

Annex 1.2

Law on Clusters in Italy (Law 317)

The original measure that gave an institutional framework for policymaking targeting regional clusters was the law 317 which was approved on 25 September 1991. The main innovation of this law was its focus on SMEs and, in particular, the scope that it gave for providing support to groups of small firms rather than concentrating only on single, usually large firms. This was an admission of the crucial importance of the industrial district model in the Italian economy and recognized that such districts had, or potentially had, different policy needs. Article 4 of the law was particularly significant because it formalizes the concept of "consortia" between small firms and gave prominence to the provisions of collective services for groups of firms (often known as "real service"). In general, the legislative framework has been overtaken by decentralization, with regions now in change of increasingly broad areas of innovation and enterprise policy. While this law seems to have had only a limited impact in practice for a variety of reasons, the objective of promoting structural relations among firms and between firms and other economic actors in a region remains a high priority and has emerged in other forms in more recent national programmes.

Annex 2.1

Cluster Initiatives and Agencies Involved: Global Experiences

Transition Economies (Low and Middle Income Countries)
Afghanistan Type of Clusters: Artisanal Scheme: Afghan Carpet Cluster Intervention (2005) Agencies: Global Network, an international trade consulting firm and Cluster Pulse (a cluster development initiative NGO) and Afghanistan Competitiveness Project of USAID Approach: Technology , Bank facility , Transport & Market access (Linking with global market)
Pakistan Type of Clusters: Traditional Manufacturing Schemes: 1. Dairy Pakistan (2000) and 2. Pakistan Readymade Garment Technical Training Institute (PRGTTI) (1997) Agency: National Government Approach: Training and R&D Cooperation.
Philippines Type of Clusters: Artisanal, Traditional Manufacturing and High-tech Scheme: Davao Regional Development Plan (DRDP), 2004-2010 Agency: State Government (South Mindanao) Approach: Promotion of clusters, fostering regional specialization, export promotion, job creation.
Guatemala Type of Clusters: Artisanal Scheme: Guatemalan Ornamental Plants, Foliage and Flowers (2005) Agency: State Government and Private Groups. Approach: Mapping of clusters and linkages.
Peru Type of Clusters: Artisanal and traditional manufacturing Scheme: SME Development Initiative Agency: National Government Approach: Credit support and registration of clusters.
Georgia Type of Clusters: Traditional manufacturing Scheme: Tea Cluster Development (2003) Agency: Government
Mexico Type of Clusters: Traditional Manufacturing and Artisanal Scheme: Empresas Integradoras Program (1993) Agency: National Government Approach: Preferential tax regime, easy access to bank loans and access to training programs.
Poland Type of Clusters: High-tech and Traditional Manufacturing Scheme: SME Clustering and Networking Programme (1998) under the EU PHARE Programme Agencies: National Government (Polish Foundation for SME development and Promotion) and EU Approach: Provision of infrastructure and funding

Hungary
Type of Clusters: Traditional Manufacturing
Scheme: PKG
Agency: National and Regional Government
Approach: Financial and non-financial (infrastructure) support.

Slovak
Type of Clusters: Traditional Manufacturing
Schemes: Affairs Study for an Action Plan in the framework of the European Charter for Small Enterprises (2000)
Agency: National and Regional Government (Regional Advisory Boards and Information Centres)
Approach: Research Access, Education, Training and link-ups with global markets.

Estonia
Type of Clusters: High-tech
Schemes: 1. Competence Centre Programme (2003) and 2. Technology Programmes (planning phase)
Agency: National Government (State-owned Foundations like "Enterprise Estonia" and KredEx)
Approach: Supporting financially and conceptually the creation of technology competence centres between related industry and academia.

Latvia
Type of Clusters: High-tech
Schemes: "Support to Industrial Cluster Restructuring" study under the EU PHARE programme (2000-2001)
Agencies: EU and National Government
Approach: Export Promotion and improving the collaboration between the academia and industries

Lithuania
Type of Clusters: High-tech
Scheme: Analysis of Preconditions for Clustering in Lithuania and Guideline Development (2002)
Agency: National Government
Approach: Establishment of business and innovation support structures (incubators, innovation centres), industry-academia-government collaboration.

Turkey
Type Of Clusters: Traditional Manufacturing
Schemes: 1. Bartin Agriculture Cluster Development Project (2003)
2. Bartin Furniture Cluster Development
Agency: National Competitiveness Research Association, KOSGEB(Medium And Small Enterprises Development Directoriate), National Government And State Planning Organisation (State Government)
Approach: Starting of clusters, Provision of infrastructure, Training and credit facilities

South Africa
Type of Clusters: Traditional Manufacturing
Scheme: Durban Metropolitan Council's Economic Development Department (2001)
Agencies: National and State (Natal) Government and academia
Approach: Funding and popularization of clusters, partnership between researchers and firms.

Czech
Type of Clusters: High-tech and Traditional Manufacturing
Schemes: 1.Cooperation Programme under the SME support policy (2001-2004) and
2. CLUSTERS (KLASTRY) (2004-2006)
Agency: National Government
Approach: Financial assistance of up to 50%, mapping of clusters, and disbursing subsidies.

Developed Economies
Finland Type of Clusters: High-tech Schemes: 1. Centres of Expertise (1994) and 2. National Cluster Programme (1990s, over now) Agency: Government Approach: Collaborative private-public work with provision of technology centres (technology parks) to house them.
France Type of Clusters: High-tech Schemes: 1. Pôles de Compétitivité (2005) and 2. Local Production Systems (SPL) (late 1990s) Agency: National Government Approach: Promotion of triple helix projects involving research institutes, firms and the government. Also, for small low-tech firms, providing assistance in marketing.
Germany Type of Clusters: High-tech Schemes: 1. BioRegio (1995) and 2. INNOREGIO (1999) and 3. Ga (joint taskforce) for network building (2005) Agencies: Government (for 1st scheme) and Government and EU for the rest. Approach: Promoting R&D activities through EU or central and regional funding schemes.
Italy Type of Clusters: High-tech and High-end traditional manufacturing Schemes: 1. Law 317(91) (1991) and 2. Technical districts (2003) Agency: National Government Approach: Recognizing the importance of traditional clusters through promotion of cooperative servicing known as "real servicing". "Technical Districts", while fostering effective relationship between funding, research and practical application, looks into the social issues like health and environment.
Norway Type Of Clusters: High-Tech Schemes: 1. Arena Innovative Networks (2001/2002) And 2. Centres Of Expertise (2005) Agency: National Government Approach: Technological upgradation through R&D funding and R&D cooperation between the clusters.
Spain Type of Clusters: High-tech Scheme: Competitiveness clusters (1991) Agency: Regional Government Approach: Technical upgradation to move up the value chain to improve competitiveness owing to the threat of integration with EU
Japan Type of Clusters: Education Clusters and Industrial Clusters Schemes: 1. MEXT (2001) and 2. METI (2001) Agencies: National Government and academia Approach: Reform and upgrade the R&D systems in regions; improve the flow of research by networking the principal actors; and provide seed funding for joint activities. Ensuring a more proactive role for the institutes in the regional R&D system through effective technology transfer.
South Korea Type of Clusters: High-tech Scheme: Innovative Cluster Cities (2004) Agency: Government Approach: Systematic integration of R&D intensity (infrastructure) and development of networking among academia, industry and research institutions (management tool).

Note: The countries are classified according to World Development Indicators (WDI) 2005, World Bank. We have lumped together the Lower-middle and Low income countries in the WDI (2005) classification in our classification into low income countries here.

Annex 2.2

Typology of Cluster Activities- An indicative list

Trust Building	Market Development
1. Awareness programme 2. Demonstration workshop 3. Special purpose meeting 4. Cluster visit 5. Joint Pilot initiative 6. Association formation 7. Networking 8. Formation of Consortium	1. Market survey 2. Product development & value addition 3. Product line extension 4. Brochure development/ product catalogue 5. Development of common website/ portal 6. Product Directory/ Manufacturers' Directory 7. Marketing consortium & joint marketing 8. Establishment of common showroom 9. Distribution channel planning 10. Design development 11. Diversification 12. Fashion forecasting 13. Market targeting (domestic/export) 14. Organising trade fair / trade fair participation (domestic, international) 15. Buyer-seller meeting 16. Common branding 17. Catalogue show 18. Marketing seminar 19. Export development programme 20. Delegation visit abroad 21. Common warehousing 22. Visual merchandising 23. Virtual exhibition 24. Niche marketing 25. Cluster twining 26. Intervention on packaging 27. Sub contraction exchange programme 28. Vendor development programme 29. Corporate linkage programme 30. Organising fashion show/ jewelry show (for RMG/Jewelry cluster) 31. BDS for Marketing

Technology Upgradation	Capacity Building & Skill Development
1. Technology mapping 2. Process demonstration 3. Technology Upgradation Programme (TUP) 4. Adoption of appropriate technology/ installation of new machines 5. Technological implementations 6. Technology counselling 7. Energy conservation programme/ energy audit 8. Technology sourcing/ hunting 9. Technology transfer 10. ISO 9000/14000/FPO/HACCP/ CE mark/WHO-GMP etc. implementation 11. Sharing best practices 12. Reverse engineering 13. Technology benchmarking 14. Indigenisation 15. Technology incubation 16. Technology tie up 17. Hiring technical BDS jointly 18. Factory improvement programme (FIP) 19. Quality audit & quality circle 20. Adopting quality control measures 21. TQM/ TPM 22. Just in Time manufacturing 23. Waste minimization 24. R&D under PPP initiative 25. Calibration workshop 26. Linkages with technical institutions/ CSIRs/ ICAR/ IITs etc.	1. Strengthening of the local industry association 2. Training for the association secretariat 3. Newsletter 4. BDS data bank 5. FAQ 6. Training/seminar for the cluster stakeholders 7. On the job training/ skill development training 8. Benchmarking 9. Documenting best practices 10. Creating a knowledge bank 11. Information/knowledge dissemination 12. Provisioning of handholding services 13. CDE programme 14. Research and knowledge sharing 15. GI/ patent 16. Creating an ICT enabling environment 17. Engaging NDA 18. Social capital development 19. Networking with support institutions 20. Creating informal knowledge bank in clusters 21. Shop Floor Management 22. Establishing /strengthening BDS-enterprise linkages 23. Training of Trainers (ToT) Programme 24. Organising Growth programme 25. Establishing training centre for skill formation (PPP mode).

Strengthening Backward Linkages	Finance Related
1. Ensuring smooth supply of quality raw material 2. Formation of Input Purchase Network (IPN) 3. Raw material bank 4. Buyer-seller meet 5. Ensuring smooth supply of quality inputs 6. Quality awareness programme for suppliers and users 7. Quality audit 8. Inventory management	1. Training on project report preparation/ project appraisal 2. Liasoning with banks 3. MCGF 4. SHG formation 5. Micro credit & micro finance 6. Promotion of CLCSS/ TUFS schemes 7. Training on working capital management 8. Cost audit 9. NGO Banker interface 10. Credit facilitation 11. Sick Industry Revival Programme (SIRP)/ Industrial Rehabilitation Programme (IRP) 12. Artisan credit card
Social Compliance Imitative	**Infrastructure Related**
1. Adoption of H&S measures 2. Group insurance for workers/ artisans 3. Group mediclaim 4. ESI 5. Adoption of welfare measures like proper lighting, ventilation, drinking water, canteen, recreation facilities 6. CSR initiatives/ SA 8000 7. BSCI (Business Social Compliance Initiative) 8. Pollution audit & adoption of pollution control measures 9. Common RO plant/ CETP	1. Technology incubation centre 2. Common testing laboratory 3. Liasoning with schemes like IIUS etc. 4. Technology Park/ Food Processing Park/ Bio Technology Park/ Science & Technology Entrepreneurs Park (STEP) 5. Establishment of common captive power plant 6. Design Centre 7. Common Raw Material Depot
Policy Sensitization:	
1. Research & policy advocacy 2. Facilitating dev. of cluster specific schemes (demand driven) 3. Imbibing cluster competitiveness through suitable policy measures	

Annex 2.3

UNIDO Cluster Development Approach

1. Fundamental Principles:

- Micro or SME development is an interlinked phenomenon that cuts across several themes (Technology, Skills, Marketing, Financial etc.) - *Remember Holistic*
- Efficiency and effectiveness of cluster initiatives for enterprises is enhanced significantly by promoting 'targeted' (planned) Joint Action, at the core of which lies mutual trust - *Remember Social Capital.*
- Every cluster resembles a live organic entity and thus requires customized support - *Remember non-Schematic*
- A cluster can respond to the future challenges if the ability of its key stakeholders with private sector in the lead, is enhanced significantly to undertake collective action - *Remember Local Governance framework and Sustainability*
- Fostering a competitive market for Business Development Services (BDS) is essential to develop dynamic clusters but requires a strong thrust on stimulation of articulated demand among the MSMEs - *Remember Demand Articulation*

2. Unique Objectives:

- Stimulate collective efficiency among enterprises
- Build Culture of competitive Cooperation among key cluster stakeholders
- Build Local Governance framework (Enabling a local system of interconnected private and public institutions with private sector in the lead to respond to cluster needs)
- Create competitive market of BDS

3. Unique Methodology:

- Target every cluster activity simultaneously at Micro (enterprise) and Meso (network, associations and local institutional) level
- Deploy full time empowered Cluster Development Agent(s) i.e. CDA(s) with no business stake in the cluster (to diagnose, plan activities, respond fast, resolve conflicts, get activities implemented and monitor development
- Invest a minimum of 3-4 years time frame for a cluster
- Prioritise Issues of focus: (what needs to be done and when)
- Integrate BDS from outside
- Rarely, if ever, support individual firms
- Articulate demand by groups
- Provide linkages with multiple govt. schemes/support programme
- Cluster stakeholders

4. Expected end of project result

- Culture of competitive cooperation built to solve collective problems
- Significant investment of financial resources shared by private sector for developmental initiatives
- Vibrancy and capacity of key industry associations/networks ensured
- Entire value chain representative groups and institutional framework agreeable to a common articulated or unarticulated cluster vision.

5. Policy Level

- Create an acceptance of the approach at the policy level
- Train and prepare local institutions to widespread this approach

Cluster Facilitators (CDAs): Three key roles:

Most clustering initiatives around the world have a facilitator (or a facilitating team) in place, usually resourced in part by a public agency. Typically, the role of the facilitator includes:

1. **Communicator and boundary crosser:** Connecting stakeholders and opening up communications across the cluster. Providing a neutral voice to facilitate linkages.
2. **Strategist:** Strategically understanding the cluster, its competitive position, its culture and its development options.
3. **Change agent:** Facilitating the establishment of collaborative initiatives to upgrade the cluster's competitiveness, ideally **acting as the lubricant rather than the engine.**

Annex 2.4

Select Cluster Schemes in India

1. Ministry of Textiles

Scheme for Integrated Textile Parks (SITP)

Objective: Provide the textiles industry with world-class infrastructure facilities.

Implementation: At each cluster a special purpose vehicle (SPV) will be formed with representatives of local industry, financial institutions, State and Central Government. Ministry of Textiles (MOT) will sign an MoU with IL&FS or a similar professional agency, which has considerable experience in infrastructure development, as Project Management Consultant (PMC) for implementing the Scheme. PMC will report to MOT, who will directly supervise the implementation of projects under the superintendence and control of Secretary (Textiles). The role of the State Government is to provide all the requisite clearances, assist in land identification, providing flexible & conducive labour environment, exemption of stamp duty, dovetailing other related schemes etc. The ongoing projects sanctioned under the TCID/APE Schemes will be given an option to switchover to the proposed Scheme.

(Source: Ministry of Textiles, Government of India- http://texmin.nic.in))

Baba Saheb Ambedkar Hastshilp Vikas Yojana (AHVY)

Objective: Organise artisan's clusters into SHG's/ Cooperatives to take up economic activities, make artisans active entrepreneurs cum primary stakeholders for easy access to domestic & oversees mkt., upgrade skill through appropriate design & technology Intervention, provide infrastructure support, ensure effective participation of all members involved in production & marketing. process & create centres of excellence with well integrated forward & backward linkages.

Implementation: AHVY scheme devised as an integrated approach for sustainable development and promotion of identified handicrafts clusters, envisages external intervention of four types- social, technological, marketing and financial. The schemes may be implemented by any of the following implementing agencies (IAs)- reputed NGO's / Cooperatives / apex Cooperative Societies / Trusts / COHANDS / EPCH / CEPC / MHSC / IICT / NCDPD / NIFT / NID / University Department , DRDA / NIMSME, EDI , Central / State Handloom & Handicrafts Development Corporations / Agencies , federation of NGO's / SHG's Consortium etc.

The process start with diagnostic survey of the identified clusters in the form of detailed project report indicating the needed interventions in order of priority, sequencing of the implementation of the interventions and concurrent activities etc. Mobilisation of the beneficiaries shall be undertaken in the clusters where diagnostic survey has been completed. Technological, marketing, financing activities will follow as per cluster need.

As the Implementing Agencies, specially the smaller ones do not have enough exposure of current developments in the field of design, technology & management, Guiding & Monitoring Agencies may be involved for monitoring and supervision as per the requirement, guiding IAs in terms of market intelligence, technology and design input as per the cluster's need, linking with other developmental partners both Govt, and Non-Govt., including banks and financial institutions and putting in place a reliable and sustainable supply chain mechanism.

(Source: DC (Handicrafts), Ministry of Textiles, Government of India, http://handicrafts.nic.in/ahvyscheme.htm)

Integrated Handloom Cluster Development Programme (IHCDP)

Objective: Empower and build capacity of handloom weavers to meet the challenges of the market and global competition, facilitate collectivization of handloom weavers and service providers, provide common infrastructure, encourage convergence of schematic assistance and support service from various schemes and programmes of government and other agencies. IHCDP is an attempt to facilitate the sustainable development of handloom weavers located in identified clusters into a cohesive, self managing and competitive socio-economic unit.

Implementation: Development Commissioner (Handlooms) is the nodal agency responsible for holding and disbursement of funds to the identified implementing agencies (IAs). Overall monitoring of the project is under the supervision of an Apex Committee. The IAs can be institutions of the Central and State Governments, semi-Government institutions, NABARD, EDI, NHDC and NGOs with suitable expertise and experience to undertake a scheme. IA shall identify and support a CDA exclusively for each cluster, who will be responsible for conducting diagnostic study, preparation and implementation of cluster action plan, promoting linkages with institutions, building the local governance framework, etc. The Apex committee will identify and engage the National Resource Agency (NRA) in identification of clusters, conducting training of CDAs and other officials of the NA, validation of cluster action plans and monitoring and evaluation. The role of the Apex Committee is to provide overall strategic directions to the project, approval of the projects, budgets and action plan submitted by the implementing agencies, periodical review and monitoring of the progress made by various cluster-developing agencies etc. The State Government can assist by constituting necessary provision for allotment of land free of cost/subsidized cost to the cluster for construction of common facility center /dye center etc.

(Source: DC(Handlooms), Ministry of Textiles, Government of India, http://handlooms.nic.in/hl_comp_scheme_main.htm).

Cluster Development Programme, Textiles Committee of India

Objective: Capacity building of SMEs, through a cluster based approach, by way of fostering the collective efficiency of SMEs and improving the support systems, so that the emerging opportunities on account of globalization and liberalization are exploited.

Implementation: The Scheme will be implemented by the Textiles Committee itself. A Diagnostic Study will be conduced in selected clusters to identify gaps and support initiatives required to be provided by various organisations. An Action Plan will be drawn up based on such Diagnostic Study, to fill the identified gaps, within a time period of 3 years. While the regional offices of the Textiles Committee will act as nodal offices for the concerned clusters, an experienced officer within the concerned office is designated as Cluster Development Agent (CDA) exclusively, for implementation of the programme. The local industry and the Support Service Institutions will be involved through Cluster Co-ordination Development Group (CCDG). The impact of the programme will be assessed periodically by adopting scientific methodology.

(Source: Ministry of Textiles, Government of India,)

2. Ministry of MSME

Micro and Small Enterprises Cluster Development Programme (MSECDP)

Objective: Enhancing productivity/competitiveness of small enterprises, facilitate economies of scale in terms of deployment of resources, integrated and focused development of micro and small enterprises and gainfully link them to value chains with higher gains at lower cost.

Process of Implementation: A lead Government institution to be the prime mover of a proposal for cluster development in the initial stages of its conceptualisation, design, determination of technical parameters, project preparation and documentation, etc., in consultation with the cluster beneficiaries. It will, however, be necessary to constitute the SPV at the earliest possible, with clear indication of the time frame for completion of this essential requirement while submitting the proposal for Government assistance.

An officer/executive of the cluster-based SPV or the implementing agency (other than the SPV) has to be selected and trained to act as the Cluster Development Executive (CDE). The CDE is required to conduct the Diagnostic Study, prepare the Action Plan based on the former and get the Plan implemented with full participation of the Cluster Actors, so as to build up the collective capacity of the units in the Cluster to sustain and carry on the promotional as well as commercial activities in the long run even after the project comes to an end.

The main steps for cluster development programme will be selection of cluster(s), selection of Cluster Development Executive(s), trust building, diagnostic study, preparation of action plan, approval of budget and leveraging of funds from various institutions, implementation of the action plan, monitoring and evaluation, handing over and exit, self-management phase.

Funds will be released by the Office of DC(MSME) directly to SPV/IA, under intimation to the govt. Monitoring & evaluation is done by State Govt. if implemented by State or by Ministry of SSI if not implemented by State Govt.

(Source: DC(MSME), Ministry of Micro Small and Medium Enterprises)

Scheme of Fund for Regeneration of Traditional Industries (SFURTI)

Objective: To develop clusters of traditional industries in various parts of the country, make them more competitive, strengthen the local governance systems, and build up innovative traditional skills, improved technologies, advanced processes, market intelligence and new models of public- private partnerships.

Process of Implementation: KVIC and the Coir Board will be the Nodal Agencies (NAs), driving the scheme. The cluster development proposals received from the NAs will be considered by the Scheme Steering Committee (SSC). The SSC is entrusted to see that the selected clusters are spread over the country reasonably evenly, with at least 10 per cent located in North-Eastern Region. The SSC will identify Technical Agencies (TAs) having expertise in cluster development methodology for providing technical support to the Nodal Agencies and the Implementing Agencies (IAs) undertaking cluster development activities. With the help of the TAs, the Nodal Agencies will identify the clusters and IA for each cluster. Each IA will identify and appoint a Cluster Development Agent (CDA), exclusively for each cluster, who will be located in the cluster full time and will be responsible for implementing the Scheme in the assigned cluster. The CDAs will conduct the diagnostic studies in the clusters and prepare annual action plans which, after validation, will form the basis for the development of the cluster.

(Source: Ministry of Micro Small and Medium Enterprises, http://msme.gov.in/msme_sfurti.htm)

3. Ministry of Commerce and Industry

Industrial Infrastructure Upgradation Scheme (IIUS)

Objective: To enhance international competitiveness of the domestic industry by providing quality infrastructure through public-private partnership approach in selected functional clusters/locations which have greater potential to become globally competitive. The improvements in performance will be secured in selected competitiveness indicators to be developed in consultation with each industrial group.

Process of Implementation: The development of the cluster will be through a Special Purpose Vehicle (SPV) which will carry out the business of developing, operating and maintaining the infrastructure facility created in the industrial locations. SPV will be a Corporate Body/Association registered under the Companies/Societies Act. The structure of SPV will be approved by an APEX Committee which will also decide & approve the cluster/ industrial locations for development under the scheme. Financial Institutions (FIs) will help DIPP (Secretary to Apex Committee) in project structuring, implementation and leverage of funds. For projects where costs are borne by FIs, the appraisal done by FIs is accepted by DIPP. For projects not funded by FIs is appraised by DIPP through an independent agency. Monitoring & Evaluation will be carried out by DIPP.

(Source: DIPP, Ministry of Commerce and Industry, http://dipp.nic.in/iius/iius_index.htm)

4. Other Techno- financial Institutes

Schemes on Micro finance, NMDFC

Objective: Help artisans to seize opportunities & meet the challenges of a rapidly globalising world, dovetail with various government schemes, strengthen network, policy focus on employment generation, fuelling growth through creation of new craft based enterprises & revitalising them. Other specific goals include increasing the availability of financial services, social security & create a conducive & pro poor environment within developmental institutes & governmental agencies operating locally.

Process of Implementation: NMDFC is the financing institution. It has dovetailed with the existing scheme of DC (Handloom) & DC (Handicraft) on cluster development to work jointly & effectively on development of Minority Craft Cluster. The implementation of the cluster is done through Local Implementing Agencies, which can be identified by DC (Handloom), DC (Handicraft) or NMDFC. The local agency is responsible for identification of target groups & assessing the requirement of each member with regard to credit & related needs. Certain activities like infrastructure support (CFC, process house, effluent treatment plant etc.) and marketing support (marketing information, guidance, participation in various fairs & exhibitions, etc.) will be provided under the schemes of DC(Handicrafts) & DC(Handlooms). However, NMDFC through its regular programme of marketing exhibitions would give preference to such clusters. The monitoring & evaluation will be done by an Apex level committee constituting NMDFC (MD), DC(Handicraft) or representatives, DC (Handloom) or representatives and representatives of UNIDO & NABARD.

(Source: NMDFC)

Financing and Development of SMEs, SIDBI

Objective: Making SME lending an attractive and viable financing option as also facilitate increased turnover and employment in the sector. One of the component of the project is Technical Assistance (include clusters), which aims at strengthening the policy/legal/ regulatory framework and its enforcement, improve credit information of SMEs, build institutional capacity of the banks to reduce transaction cost, provide BDS and institutional support to Project Management Division and M&E.

Process of Implementation: This is a World Bank-led multi-agency/multi activity project, where SIDBI has been assigned with the responsibility of implementing it and the Banking Division, Ministry of Finance, Government of India is the nodal agency. The IBRD, DFID UK, KfW Germany and GTZ Germany are the international partners in the Project.
(Source: SIDBI, New Delhi)

Cluster Development Scheme, NABARD

Objective: Strengthening of existing clusters and development of new clusters in exceptional cases towards sustainable competitive advantage through technology upgradation & transfer, raw material access, skill development, managerial inputs, credit support and marketing assistance.

Process of Implementation: Identification of clusters, conduct diagnostic study and preparation of cluster status and action plan, identification of solutions to problems / issues, selection of NGOs/ VAs / Developmental Agencies, constitution of Cluster Development Committee, assignment of clear roles to various partner agencies, approval of Action Plan / Launching of the Programme , sensitisation for the partners of the programme, awareness / Skill development of artisans, increasing product range and improving quality and productivity, supporting technology upgradation / transfer, implementation of credit linked promotional programmes through NGOs / VAs / Developmental Agencies, monitoring the progress closely through the Cluster Development Committee at regular intervals, development of Management Information System.
(Source: Website of NABARD http://www.nabard.org/nonfarm_sector/pp_ad_cluster.asp and personal meetings)

Project Vikas, NMCC

Objective: To stimulate manufacturing competitiveness of SMEs across clusters in the country, demonstrating Microsoft's commitment to IT innovation by facilitating knowledge based business and skill environment.

Process of Implementation: The intervention will take place in three phases:
Phase I- Understanding cluster needs and preparing a cluster action plan, improving local participation in cluster level activities.
Phase II- Improving skill sets of the cluster based on the action plan with an aim to increase the level of ICTin the business process.
Phase III- this phase will see actual increase in the productivity due to ICT usage in different firms and organizations in the cluster.
(Source: Website of NMCC, http://nmcc-vikas.in/Pages/default.aspx)

5. State Government

Marginal Money Loan and Grant Assistance for Cluster Development Activities, Government of Kerala

Objective: To serve the needs of cluster and their development.

Process of Implementation: Common Corporate Entity (CCE) shall form a consortium registered as a Private Ltd. company under the Companies Act and approved by the Director of Industries & Commerce. The application shall be given to the General Manager, District Industries Centre by CCE, who will forward it with due recommendation to the DI&C. Recommendation of the financial institution/bank shall be obtained before the loan is sanctioned. Director of Industries shall have sanctioning powers for margin money loans to any entity including MML for both working capital and term loan. MML will be disbursed to the entity only through the financing institution concerned. The CCE shall be bond to pay the interest (9% p.a) from the date of withdrawal of DD. The Financing agency shall advise the Director, along with its recommendation, the schedule of repayment of the loan so as to enable the Director to prepare the repayment schedule for the MML. Margin Money loan granted under this scheme is to be repaid by the borrower in 16 equal quarterly instalments. No-collateral security or charge on assets of the CCE during the pendency of loan by the CCE to the financial institutions or banks is required for the MML. But the Government shall have a charge on the assets of the CCE once the term loan liabilities are serviced.

(Source: Department of Industries, Government of Kerala, http://www.keralaindustry.org/cluster_mml.htm)

Scheme for Assistance to Cluster Development, Government of Gujarat

Objective: Strengthening existing clusters by providing necessary support to improve competitiveness and meet the global challenges ahead. As part of these initiatives, the State Government intends to encourage Industries Associations for creating necessary common infrastructure facilities at lower cost.

Process of Implementation: The project proposal should preferably be prepared by a recognized institution and should ensure that it contains essential features of a project document. The State Level Approval Committee will grant the approval to the proposals received for cluster development and decide the quantum of assistance for each proposal. The Committee will also prescribe the terms and conditions for implementation of the project and monitor the progress. Applications under the Scheme for various proposals/projects from Clusters of industries at various locations will be received and processed by the Industries Commissionerate, Gandhinagar.

(Source: Office of Industries Commissionerate, Government of Gujarat, http://ic.gujarat.gov.in/promo-sch/cluster-state-gr.htm)

Integrated Cluster Development Programme, Government of MP

Objective: The main aim of this scheme is to develop important clusters of traditional products of KVI & tourism centres to attract tourists in coordination with various departments of the State & Government of India. Provide facilities to sericulture activities as per scheme directives. To take up comprehensive development of living heritage clusters to increase employment opportunities.

Process of Implementation: Under this scheme, on the basis of Cluster's requirement, special project proposal can be entertained & assistance can be granted at a time for total development. Power of assistance approval will be with the State Level Approval Authority.

(Source: Department of Rural Industries, Government of MP)

Craft Village Scheme, Government of Orissa

Objective: To create sustainable self employment opportunities for craft persons, higher level of production and design efficiencies in the cluster, market oriented development of major craft clusters of Orissa, building capacities of SHGs so that they sustain on their own and create synergies between the various stakeholders for promotion of craft clusters.

Process of Implementation: (i) Each cluster picked up for intervention will be diagnosed in details. An action plan based upon the gaps identified would be prepared for intervention. (ii) Promoting the concept of collective efficiencies, joint action and self reliance through SHG or other modes of cooperation (iii) Dissemination of best practices from other clusters and awareness building programmes such as exposure visit, workshop, seminars etc. (iv) Market led and need based interventions in skill upgradation, technology, design and product development (v)Joint efforts of crafts persons to link with the markets through multiple channels like NGOs, exporters, marketers, entrepreneurs etc. (vi) Synergy of all support institutions (vii) Effective usage of Business Development Service providers for collective efficiency of the cluster (viii) Building of local capacities for sustenance of the developmental efforts in the cluster. SIDAC would be the apex monitoring & coordinating agency responsible for selection of CDA and would deploy need-based mechanisms of actual implementation, monitoring and review of the programme.

(Source: UNIDO, Orissa)

Annex 3.1

Typology of Stakeholders Discussants

	Policy Level Institution
1	Ministry of MSME
2	Department of Industrial Policy & Promotion, Ministry of Commerce & Industry
3	DC(HC)
4	Department of Ayush, Govt. of India
5	NABARD
6	Commissionerate of Industries, Govt. of Gujrat
7	Director of Coir Development, Govt of Kerala
	TOTAL- 7
	Resource Organisations as well as Implementing Agencies
8	NIMSME
9	K-BIP
10	EDI
11	Global Network
12	Textile Committee
13	SBI
	TOTAL- 6
	Implementing Agencies
14	ILFS
15	APEX
16	STED
17	ATiRA
18	CGCRI
	TOTAL- 5
	List of Clusters
19	Allepy Coir Cluster
20	Bangalore Machine Tools
21	Rice Mill Kalady
22	Bidri Craft Cluster
23	Rajkot Diesel Engines and Engineering
24	Parlakhemundi, Dist Gajapati, Orissa cluster
25	Perumbavoor Plywood
	TOTAL-7

	Firms
26	Bidri Crafts
27	Subbaiah Enterprises
28	ETA Technology Pvt Ltd.
29	Ace Desighners Ltd
30	Ace Carbo Nitriders
31	Seepison Plyboards
32	Artisans of Orissa
33	Topland Engines Ptd Ltd
34	Diesel Engine Committee,REA
35	M/S Parag Casting
	TOTAL-10
	BDS Providers
36	Bureau of Indian Standards
37	Central Manufacturing Technology Institute
38	CGCRI
39	NSIC Technical Service Centre
40	IKON Marketing Consultants
	TOTAL- 5
	Financial Institutions
41	NABARD
42	KRISHNA GRAMIN BANK
	TOTAL-2
	CDEs
43	Common Facility Service Centre
44	CGCRI
	TOTAL-2
	Associations / Networks
45	Rajkot Engineering Association
46	Allepy Coir Cluster
47	Rice Mill Cluster of Kalady
48	SAUM, Ahmedabad
49	Pig Iron Committee
	TOTAL- 5

Annex 3.2

Suggested Selection Criteria for Implementing Agencies

	Criteria	Scoring Criteria	Reasoning	Score
1.	Specialized technical employees	Number and experience of employees	Higher the institutional capacities better the performance.	5
2.	Experience of involvement in sector	Prior experience in sector	Prior experience will benefit in terms of immediate results.	5
3	Location of the organization	Geographical presence / spread of the agency	Close proximity to the cluster will help networking & liasioning	10
4	Facilitate BDS	Ability to deliver BDS internally	Higher access & flexibility to provide services	5
5	Potential to tie up Public Private Partnership	Prior experience	Need for sustainable development	10
6.	Prior experience in similar initiatives/ cluster development	Years of experience in cluster development	Better understanding of the activities to be undertaken	10
7.	Record of Liasioning with financial institutions/ technical institutes	Ability to network with financial/ technical institutions	Potential to bring in such initiatives in the cluster	5
8.	Management related inputs to CDEs	Ability to guide	Better performance of implementing stakeholders.	10
9.	Similarity in objective with the scheme	Nearness of views in socioeconomic/sector/ entrepreneurship development	Whole hearted involvement of the organisation	10
10.	Understanding of the cluster development methodology	Exposure to cluster development methodology and number of employees trained	Can provide guidance with confidence.	10
11.	Market related interventions	Ability to take up market related interventions	This is the score of all understanding, which will shape the rest	10
12.	Prior experience in social development	Years of experience	Building blocks for CDP.	10
	TOTAL			**100**

The maximum score is 100. The selection for implementing agencies will be depending on the relative scoring of the organisations.
Source: EDI, Ahmedabad

Annex 4.1

Additional Resource Requirement Assessment Five year framework (2007-2012)

Three levels of financial resources: There are three levels of programmes, viz. national, regional and local. The national programmes tend to address cross cutting issues around sectors and across regions. Within a region, programmes can be developed that combine aspects related to multi-clusters within a district and across contiguous districts. Such programmes are referred to as regional development initiatives. At the local level, there are essentially three basic categories of cluster based initiatives. The three are not mutually exclusive, but reflect the primary focus as per details below.

1) **Ensuring service delivery and providing technical support for collaborative projects:** It focuses on delivery of services in one or more pre-identified areas such as skills, technology, design, working conditions, credit delivery, investment promotion, quality development, market development as per the mandate of the funding institution. These projects are generally short-term in nature and can be for periods ranging from 6 months to 3 years. The core expertise of the implementing agency is to deliver or get delivered the specified areas of support and may cost the public exchequer between Rs. 10 lacs to Rs. 2 crores depending upon the scale and scope of the project, averaging at Rs. 50 lacs per cluster.

2) **Engagement of local cluster stakeholder actors** to link and leverage upon the available resources and strengths. This is meant for a medium term horizon over a period of 3-5 years and generally costs the public exchequer Rs. 60 lacs to 1 crore over the entire duration. The focus of projects is to address some of the systemic issues seen from the perspective of linkages, relationships and synergies. The core expertise of the implementing agency is its ability to diagnose the critical issues and engage multi-stakeholders for collaborative initiatives.

3) **Development of capital intensive projects around heavy R&D or infrastructure:** Typically such projects have a long term horizon of 5-10 years and try to address long term bottlenecks. While there have so far not been any R&D focused cluster initiatives, there are several infrastructure based initiatives, already detailed out in chapter 2. The cost of infrastructure per cluster could vary from Rs. 10 lacs for a small cluster to Rs. 50 crores for a big cluster.

There are already several initiatives that are ongoing through a number of schemes by different ministries, either through new budget provisions or by using dovetailing existing options. This component of the budget is not calculated here, considering that the provision already exists. It is only the additional support that may be required for the following initiatives that are considered important to ensure effectiveness of the ongoing initiatives.

Capacity building for creation of cluster related institutional infrastructure and undertaking of initiatives that promote synergy across various initiatives may cost a total of Rs. 250 crores over 5-year period for the following specific measures:

a. BDS development across 10 main areas such as designs, export promotion, technology across various sectors, management, finance: @ 5 crore each will lead to Rs. 50 crore

b. Skills assessment across various sectors (20) and instituting initiatives to plug the gaps: @ Rs. 5 crore each will lead to Rs. 100 Crores

c. Industry association capacity building: Rs. 50 crores

d. Implementing agencies and resource institutional strengthening: Rs. 50 crores

e. Other programmes such as building of information database, creation of new knowledge around cluster development frameworks, development of monitoring & evaluation frameworks etc. can be supported from existing funding options.

End Note

[1] Piore et al : 1984, Pyke et al : 1990, Pyke : 1992 and Sengenberger et al : 1990

[2] Becattini: 1990, Best: 1990, Bianchi et al.: 1997 and Porter: 1990

[3] Along with/ without large firms.

[4] Law 317: A brief explanation of the law given in Annex 1.2.

[5] This is a revised definition (being considered) from the previous minimum of 5000 looms.

[6] As stated by Mr. Jawahar Sircar, Additional Secretary and Development Commissioner (MSME), at the Workshop on "Policy and Status Paper on Cluster Development in India" held on July 10, 2007 in New Delhi (organized by Foundation for MSME Clusters).

[7] As stated by Mr. Jawahar Sircar, Additional Secretary and Development Commissioner (MSME), at the second Workshop on "Policy and Status Paper on Cluster Development in India" held on October 5 2007 in New Delhi (organized by Foundation for MSME Clusters).

[8] Software Technology Park of India (STPI) is set up by the Department of Communication and Information Technology, Government of India in 1991, with the objective of encouraging, promoting and boosting the software exports from India. STPI Centres have come up across the country in as many as 21 locations, the major industry concentrations is at Bangalore, Noida, Chennai, Hyderabad and Pune, reflecting the natural technology clustering effect.

[9] While the handloom and handicraft clusters are well defined and validated at the primary level, the figures for other micro enterprise clusters is based on secondary data with wider product category and need to be further worked upon.

[10] This section draws heavily from OECD 2007, The Cluster Policies White Book, IKED 2004, The Cluster Initiative Greenbook, 2003 and A Practical Guide to Cluster Development, DTI (undated).

[11] Data collected from (1) www.ktm.fi/index.phtml?l=en&s=1971, (2) Industrial Development Report, UNIDO 2005. (3) www.janbo.gr.jp/relation/data/pdf/Cluster_Kenkyu_houkoku_english.pdf, (4) OECD: 2007.

[12] Subject to various clearances.

[13] CII has been continuously charting a Roadmap to enhance competitiveness of its dominant SME membership. A cluster is formed by voluntarily coming together of a group of 10-12 companies to work together towards a focused goal. Till date 75 clusters network / consortia as they better knows in internationally accepted terminology are formed impacting 297 companies.

[14] RUDA follows a sub-sectoral as well as integrated and cluster based approach for promoting rural micro enterprises. Till date, 12 clusters have been supported by RUDA in Rajasthan in cooperation with several institutions like UNIDO, CLRI, CGCRI etc. RUDA is now officially the nodal agency for cluster development in Rajasthan.

[15] Though they do not have any cluster development scheme per se.

[16] Broadly investment in infrastructure is referred to as hard intervention. Investment in capacity building (e.g. training), market promotion, technology development, network promotion, etc. are referred to as soft interventions.

[17] Over 100 artisans

[18] Estimated at USD 10 million by end 2002

[19] By 2002

[20] Estimated at USD 10 million by 2002-2003

[21] Including 8 units which are under process and 36 with those that started the programme on their own based on the work done in the 24 units

[22] Including 25 units which are under process at the time of writing the End of Project Report

[23] Including 28 units where work is in progress at the time of writing the End of Project Report

[24] Many of these issues were raised during the First Workshop on "Policy and Status Paper on Cluster Development in India" held on 10th July 2007.

[25] There are only a few isolated star clusters in India. For example only one cluster of Moradabad (Uttar Pradesh) brassware among 3000 handicraft clusters contributes to around one third of all handicraft goods. Similarly in the coir sector, almost 80% of all exports originate from Allapuzha in Kerala.

[26] Based on estimate of working with several industry associations in a number of clusters and also discussions with experts working in this field.

[27] See Chapter 2.

Bibliography

OECD Reviews of Regional Innovation, Competitive Regional Clusters, National Policy Approaches, OECD 2007

A Practical Guide to Cluster Development. A Report to the Department of Trade and Industry and the English RDAs by Ecotec Research & Consulting

Andersson, Thomas., Sylvia Schwaag Serger, Jens Sorvik and Emily Wise Hansson (2004), The Cluster Policies White Book, International Organisation for Knowledge Economy and Enterprise Development (IKED).

Awasthi, D. (2004), Labour Process and Productivity in Micro and Small Enterprises (MSEs): The Indian Experience, presented at the 46th Annual Labour Economics Conference organised by Institute of Development Studies, Jaipur.

Becattini, G. (1990), The Re-emergence of Small Enterprises in Italy, Sengenberger, Loveman & Piore.

Best, Michael H. (1990), Cluster Dynamics in Theory and Practice with Application to Penang, UNIDO Report.

Bianchi, P. and Tommaso (1997), The role of Small & Medium Enterprises in a changing global scenario: Towards a new Policy approach , Consorzio Ferrare Ricerche.

Bianchi, P. et.al. 1996. The Italian SME Experience and Possible Lessons for Emerging Countries. Nomisma. UNIDO

Ceglie G , Clara Michele & Dini Marco (1997), SME Cluster and Network Development in Developing Countries: The experience of UNIDO.

Clara, M. 1995. Real Service Centres In Italian Industrial Districts Lessons Learned From a Comparative Analysis. UNIDO. Case Study Prepared for project US/GLO/95/144/ UNIDO/Italy Programme for SME Development

DTI. 2004 A Practical Guide to Cluster Development.: Report to DTI and English RDAs by Ecotec Research and Consulting

Enright, M.S. 1998. The Globalization of Competition and the Localization of Competitive Advantage: Policies Toward Regional Clustering. School of Business. Hong Kong.

Humphrey, J. and Hubert Schmitz. (1995), Principles for promoting clusters & networks of SMEs, Small and Medium Enterprises Branch, UNIDO.

Industrial Development Report, UNIDO 2005

Linde, Dr. Class van der. (2002), The Cluster meta- study- List of clusters, Institute for Strategy and Competitiveness, Harvard Business School. October 3, 2002.

Marshall, A. 1974 (1890). Principals of Economics. 8th Edition. ELBS and Macmillan. London.

Nadvi, K. 1999. Collective Efficiency and Collective Failure: The Response of the Sialkot Surgical Instrument Cluster to Global Quality Pressure. World Development. Vol 27. No.9. Pergemon N.W. Sept. 1999, 1605 - 1626.

Paniccia, I, and G. Luiss (undated), Italian Industrial Districts: Evolution And Performance

Piore, M. & Sabel, C. 1984. The Second Industrial Divide: Possibilities for Prosperity. New York. Basic Books.

Planning Commission (2006), Towards Faster and More Inclusive Growth: An Approach to the 11th Five Year Plan, Government of India, New Delhi, p. 35.

Porter, Michael. (1990), The Competitive Advantage of Nations, Harvard Business Review.

Pyke, F. 1992. Industrial development through small-firm Cooperation. International Institute for Labour Studies. ILO. Geneva.

Pyke, F., G. Becattini and W. Sengenberger (1990), Industrial Districts and Inter-firm Cooperation in Italy Geneva: International Institute for Labour Studies

Rabellotti R. (1999), Recovery of a Mexican Cluster: Devaluation Bonanza or collective efficiency?, University of Piemonte Orientale, Italy.

Ray, Dr. Shovan and Dr. Tamal Sarkar (2007), Cluster Development and Poverty Alleviation: Policy Suggestions, UNIDO, unpublished.

Report of the Workshop on 'Policy and Status Paper on Cluster Development in India', July 10, 2007, New Delhi, organised by Foundation for MSME Cluster.

Rosenfeld, Stuart A. (1996), Does Cooperation enhance competitiveness? Assessing the impacts of inter-firm collaboration, Elsevier Research Policy.

Schmitz, H & K. Nadvi, (1999). Clustering and Industrialisation: Introduction. World Development. Vol 27. No.9. Pergemon N.W. Sept. 1999, 1503-1515.

Schmitz, Hubert. 1999 Collective efficiency and increasing returns. Cambridge Journal of Economics. 1999, 23, 465-483

Sengenberger, W., G. W. Loveman and M.J.Piore (1990) The Re-emergence of Small Enterprises: Industrial Restructuring in Industrialised Countries, Geneva: ILO

Solvell, O., G. Lindqvist & Christian Ketels (2003), The Cluster initiative Greenbook.

Third Census of SSI units, 2001-02.

UNIDO (2004) Approaches to Cluster Mapping.

UNIDO Methodology- Making Clusters Work (2006), Foundation for MSME Clusters

World Development Report (Special Issue). 1999. Industrial Clusters in Developing Countries. Vol 27. No.9. Pergemon N.W.

Websites

www.ahan.org.pk {Rural Enterprise Modernization initiative of the Government of Pakistan (AHAN)}

www.competitiveness.lk/ceramics.htm

www.goidirectory.nic.in

www.janbo.gr.jp/relation/data/pdf/Cluster_Kenkyu_houkoku_english.pdf

www.janbo.gr.jp/relation/data/pdf/Cluster_Kenkyu_houkoku_english.pdf (Japan Association of New Business Incubation Organizations)

www.ktm.fi/index.phtml?l=en&s=1971

www.ktm.fi/index.phtml?l=en&s=1971 (Ministry of Trade and Industry, China)

www.smeda.org.pk (Small and Medium Enterprise Development Authority)

www.wikipedia.org/wiki/Massachusetts_Route_128

http://www.blr.stpi.in/about_background.htm

http://www.indiabudget.nic.in/

http://www.lged-rein.org/solar/solar_sre_clustervill.htm (Solar Energy Programme under Sustainable Rural Energy, LGED)

http://www.nmcc.nic.in/NMCP.aspx

FOUNDATION FOR MSME CLUSTERS

Foundation for MSME Clusters was established in the year 2005. The Foundation strives towards

- Making cluster initiatives inclusive
- Preparing cutting edge policies, methodologies and tools
- Promoting effective linkages between clusters and important thematic institutions in the areas of finance, infrastructure, environment, investment, R&D, social responsibility and local governance
- Making available trained and competent professionals and institutions to facilitate cluster-based development
- Preparing models of strong community based civil society organisations to take up sustainable cluster based development initiatives

All these are targeted towards creating an economically progressive, socially connected, environmentally sustainable and spiritually rooted world composed of interconnected yet diverse local socio-economic systems.

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