MAKING CLUSTERS WORK
UNIDO Methodology

Foundation for MSME Clusters

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Contents

Preface

The cluster development methodology of UNIDO owes its origin and development to experiences gained in programme implementation in India and abroad, training programmes conducted nationally and internationally and literature review available on clusters.

Accordingly, a number of persons have made equi-important small and large contributions to the development of this methodology. These persons include the innumerable MSME representatives and other stakeholders with whom the Cluster Development Agents (CDAs) have interacted and come up with valuable learning and realisations. These have been again fine-tuned with academic inputs and then discussed at over 30 training programmes during a span of five years.

Through this publication the MSME Foundation takes the opportunity to thank all those who contributed towards this methodology document.

Chapter 1
A Prelude to UNIDO Methodology

In both industrialised and developing countries, there are increasing evidences that micro, small and medium enterprises (MSMEs) can boost their competitiveness through networking and that this process is easier and more sustainable if the firms are situated and work very closely with one another in "clusters".

A cluster is a sectoral and geographical concentration of MSMEs, faced with common opportunities and threats. Such a configuration can:

- *Give rise to collective benefits, for example through the spontaneous inflow of suppliers of raw materials, components and machinery or the availability of workers with sector specific skills*
- *Favour the creation of providers of specialised technical, administrative and financial services*
- *Create a conductive environment for the development of inter-firm co-operation as well as of co-operation among public and private institutions to promote local production, innovation and collective learning.*

Moreover, MSME clusters are environments where it is easier and more effective to implement support initiatives to enlarge the production base, to identify new markets, to trigger growth, to create new employment opportunities and address regional economic imbalances.

However, only a handful of MSME clusters in the world are truly performing ones, where the above advantages can be readily observed. On the contrary, the largest number of MSME clusters is "underachiever". In such clusters the advantages (as described in italics above) fail to emerge. Acknowledging the barriers to a spontaneous upgradation of underachieving clusters, the United Nations Industrial Development Organsation (UNIDO) has developed a metholodogy (an approach) to help the public and the private sector co-operate to revitalise MSME clusters. This methodology draws lessons from global best practices and it has the capacity to adapt to the characteristics of various developing countries. Since 1996, India is one of the countries where this innovative programme is being implemented.

The cluster development approach sees the key problem faced by MSMEs as one of relative isolation rather than size. Isolated enterprises are unable to achieve economies of scale, lack negotiating power, find it difficult to specialize and have limited access to credit, strategic information, technology and markets.
Enterprises, especially small and micro ones, can significantly increase their comparative advantage by co-operating with one another and building linkages with private or public service providers. They can thus build their competitive strength through cost reduction, value chain up-gradation, and utilisation of collective economies of scale.

Cluster development focuses on reducing the isolation faced by MSMEs by strengthening the linkages among all key cluster stakeholders (that is other MSMEs, large enterprises, support institutions) to co-ordinate actions and pool resources for a common development goal.

In other words, the cluster approach views a cluster not merely as a concentration of micro and small firms, but as an inter-dependent network among the firms as well as between firms and raw material suppliers, equipment suppliers, subcontractors, support institutions, customers and service providers.

An introduction of the cluster stakeholders and their relationship appears in Chapter 2. This chapter also gives an overview of the wide presence of clusters in the world. Supporting clusters can be complex and long-winded and it requires careful planning and skilful implementation. The key elements of cluster development methodology are selection of a cluster, conducting its diagnostic study, initiating trust among stakeholders, formulation of action plan(s), implementation of action plan(s) and monitoring and evaluation of developments. While a synopsis of these techniques appear in Chapter 3, these have been detailed in Chapters 3 to 9. The entire activity is coordinated by a representative of a lead implementing agency. This representative, known as the Cluster Development Agent (CDA). The major duties and characteristics of the CDA appears in Chapter 10.

Throughout this publication, the emphasis will be on *bringing out the potential of cluster in local groups of existing firms*. This publication does not dwell on (1) successful clusters (except to provide examples), (2) creation of clusters with new enterprises, (3) development of industrial parks and/or enterprise incubators which can stimulate the creation of enterprise clusters engaged in the production of similar goods or services.

Chapter 2
Understanding MSME Clusters

2.1 What is an MSME cluster?

An MSME cluster is a sectoral and geographical concentration of micro or small and medium enterprises producing a similar range of goods or services and facing similar threats (e.g. product obsolescence or lack of markets) and opportunities (e.g. scope for increasing turnover through quality up-gradation or the introduction of new products or increasing exports through targeted marketing). Among such firms, geographic proximity can encourage the development of intensive business relations.

The firms producing the product by which a cluster is known are called *principal firms*. The number of principal firms can vary widely. In Austria, a successful wood cluster exists with less than a dozen firms. The knitwear cluster of Prato in Italy, on the other hand, has 9000 firms. In clusters with a small number of principal firms, the firms tend to be fairly large. Large clusters, with 1,000 or more firms, tend to be clusters of very small manufacturing firms. But there are many exceptions to the size rule: the Austrian wood cluster mentioned above consists of small firms.

The broad product category of the principal firms covers a range of individual products. Each firm specializes in any one or a combination of these products.

Table 2.1: Product category and product range in a cluster

PRODUCT CATEGORY	PRODUCT RANGE
Knitwear	Pullovers for men and women, children's' wear, shawls, blankets, etc.
Pharmaceuticals	Liquids, tablets, externals, injectables, bulk drugs, etc.
Processed food	Milk products, bakery products, pickles, sweets, juices, etc.

2.1 The knitwear cluster of Ludhiana, India

Ludhiana is a city in the State of Punjab, India. It has a variety of industries. These include knitwear, machine tools, bicycles, electrical products, metal parts, etc. The knitwear cluster of Ludhiana includes 70 manufacturer-exporters of knitwear items, 500 manufacturers for the domestic market, 500 spinners and dyers, 140 machinery manufacturers and machinery import agents, 300 accessory suppliers, 200 yarn dealers, merchant buyers, government and private financial and R&D institutions, regulatory institutions, private business development support providers, industry associations such as the Knitwear Club, the Apparel Exporters' Association of Ludhiana (APPEAL), etc. These cluster stakeholders share a business relationship and are all present in and around Ludhiana city.

The principal firms are interconnected with 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;
- Technical and financial service providers like consultants on quality, environment, design, energy, investment etc.

Various technical/financial institutions (both private and public) and interest groups such as product level and umbrella associations/forums 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* (also actors).

The cluster stakeholders share a business relationship among themselves. Such a relationship is generally very intense in a cluster in a small geographical area - a village, town or district. These intense business relationships may also branch into surrounding villages/districts. A cluster is identified by its place of major concentration.

In short, a cluster derives its name from two dimensions - product and place.

2.2 What is not a "cluster"?

Abstracting from the case of extremely small economies, a cluster should normally not be equated with the entire manufacturing sector nor with sectors thereof (e.g. the whole textile or leather industry in the country): sectors, while facing the same threats and opportunities, are generally too dispersed for the stakeholders to be connected in an intense web of interactions. The problems and opportunities of an industry or sector are broader in nature though they are often very much related to those of a particular cluster within the sector.

Again, networks (that is groups of enterprises cooperating with each other) are very important stakeholders in most clusters, but the network concept is much narrower, the cooperation is more focused on specific action(s) in a network. A cluster can have many networks, and these may serve as building blocks in cluster development.

An enterprise can of course leave a cluster, but will find that severing the intensive relationships with the other entities in the cluster, which often goes beyond a pure business relationship, may require a radical reorientation of its business and possibly a relocation.

2.3 Clusters as a tool for SME development

Until recently, it was believed that successful industrial development coincided with the emergence of large enterprises with great scope for internal specialisation (labour and equipment), resulting in high productivity and competitiveness through internal economies of scale. This belief was based on the decades of strong industrial growth based on mass production of goods with large volumes of fixed capital.

Technological and market developments have challenged this industrialization perspective. As a consequence of increasing reductions in the optimal scale of operation in many industries (stimulated by

the use of information technology) and the growing importance of markets where consumers put a premium on customized products, dynamic manufacturing branches are now characterized by flexible specialization leading to outsourcing of production and other firm activities. Outsourcing again increases the scope of quality of relations among firms and support institutions.

Changes in optimal firm size have emphasized the role of SMEs. The availability of comparatively inexpensive and small machines allowing faster adjustments in combination with the emergence of markets for customized products have created profitable niches for highly specialized yet flexible SMEs: a small unit (often managed by a single person with a strong entrepreneurial vision) for producing a typical commodity, is likely to be more competitive under these conditions than large-scale units relying on mass production technologies with heavy investments, high labour costs and multiple layers of decision making, which all reduce flexibility.

The trends described above have among others led to a great interest in the lessons which can be learned from long-established, successful SME clusters in Italy, also known as industrial districts. Authors such as Best, Sabel and Porter have explored these in depth. The manufacturing efficiency of SMEs in many Italian clusters is to a large extent due to the proximity of many providers of highly customized services such as transport and marketing of output, provision of investment finance, acquisition of knowledge, communication services, product testing and quality certification facilities. SMEs that want to focus on their core competence cannot afford to have any of these in-house.

Briefly, each SME in a cluster can attain a high level of specialization because a large number of "stakeholders" are located nearby, providing the complementary product and service range and allowing SMEs to save costs and also compete successfully.

2.4 Clusters in developed and developing economies

SME clusters have contributed to competitiveness in industries in countries across the globe. This has been confirmed by many authors (Porter, Enright, Schmitz, etc) and the World Bank's 1999 *World Development Report*. In some countries, high-performance clusters have made great contributions to national competitive advantage in specific products. Most of these are found in developed economies, but some are also found in developing countries.

2.5 Clusters in developed economies

Porter and other authors have highlighted the contributions of clusters to the competitive advantage of developed nations. Literature on the 'Third Italy' - the regions of Umbria, Marche, Emila Romagna, Friuli-Venezia-Giuila, Veneto, Trentino-Alto Adige and Tuscany in North and Central Italy - provides ample evidence of the advantages of clustering. The industrial districts of the Third Italy are typical examples of geographically concentrated SMEs providing similar products: the leather cluster of Arzignano, the knitwear cluster of Prato, the tile-making cluster of Sassuolo, the chair manufacturing cluster of Manzano, and so on. These clusters did well during the international recessions of the 1970s and 1980s, when large integrated firms producing similar products were finding it difficult to respond to fast changing consumer patterns and increasing demand for customized goods. In 1996, 199 industrial clusters of Italy provided 42.5 per cent of the country's manufacturing employment.

While not always clusters in the sense used here, intense local linkages have contributed to economic success in many other countries. In Sweden, local networks in the transport, forest products and metals industries account for over 50 per cent of total exports. Tuttlingen (surgical instruments), Munich (automobiles) and Frankfurt (chemicals) are some of the best known clusters in Germany. Wall Street epitomizes networking in America's financial sector, Los Angeles dominates its entertainment industry and Silicon Valley is the heart of the world's best known concentration of information technology firms. Dalton is home to 174 carpet mills accounting for 85% of USA's carpet output, and almost half of the world's carpet output.

2.6 Clusters in developing countries

Only a handful of the clusters in developing countries have shown some dynamism. Some examples of dynamic clusters follow.

2.2 The textile cluster of Prato, Italy

The Prato textile cluster has around 9,000 firms employing around 44,000 persons. The estimated turnover of the cluster is around US$ 5.3 billion/year. Around 60 per cent of its output is exported. Of these 9,000 firms, around 80 per cent are small firms with less than 5 employees.

The small, medium-size and large weaving firms depend on hundreds of spinning units, 300 dyeing and finishing units, 200 machinery manufacturers and 500 'impannatori' (independent entrepreneurs) who deal in planning, coordination of production processes and marketing, including delivering Prato's fabrics and yarns throughout Europe and overseas. In addition, a number of firms provide auxiliary materials like packaging, oils, dyes, detergents, etc., and services like fashion designs, maintenance, installation, repairs, computer applications, safety engineering, environmental protection, etc. There is also an extended network of banks providing financial services.

The growth path of the cluster owes much to the dynamics of the specialized small firms and the continuous product as well as process innovation by the principal firms and also by the support firms – yarn manufacturers, processing units and machinery manufacturers. Yarn and machinery have also separately become significant export products.

The local industry association provides support through market links and services related to environment. Technical institutions like Tecnotessile (a textile research centre) and the Textile Quality Centre also provide various support services. All these happened as a part of the natural growth process of the cluster.

2.3 The surgical instruments cluster of Sialkot, Pakistan

The remarkable surgical instruments cluster of Sialkot (Pakistan), with 300 manufacturers, accounts for about 20 per cent of world exports. It is the second largest exporter of surgical instruments in the world, next to Germany. These manufacturers are backed by 200 input suppliers and 800 units providing various types of services. In 1992-93 the cluster exported surgical instruments worth US$ 100 million, 60 per cent of which went to USA. When the cluster faced a crisis – due to quality problems US imports were stopped - the response was impressive. By late 1997, 133 firms had adopted US Food and Drug Administration (US FDA) standards and 153 firms were either going through training or awaiting certification. Exports rose to US$ 125 million and the number of exporting firms also rose to 400, after a decline due to closures during the crisis.

Apart from the examples just mentioned, there are many other examples of SME clusters in developing countries, although cooperation is in most cases not very intensive. It is estimated that India has around 400 SME clusters and some of them are very large. The township of Panipat in Northern India, for example, produces 75 per cent of all blankets in the country. Ludhiana in Punjab produces 95 per cent of the country's woolen knitwear, 85 per cent of the country's sewing machines and 60 per cent of the nation's bicycle and bicycle parts.

UNIDO has identified over 30 SME clusters in Thailand. These include the ceramic clusters of Lampang and Chiangmai, the rice milling clusters of Maechan and Ayudhya, the canned fish clusters of Trang and Songkhal, the rubber cluster of Hajai, the

2.4 The Sinos Valley shoe cluster of Brazil

In a span of little over two and a half decades, the Sinos Valley shoe cluster of Brazil transformed itself from a cluster of small enterprises producing mainly for internal markets to a combination of 500 SMEs and a handful of large firms exporting 70 per cent of their output. Brazil's world share of leather shoes exports increased from 0.5 per cent to 12.3 per cent during this period. The shoe manufacturers are supported by 1,000 suppliers of specialized inputs and providers of services, including tanneries, producers of the full range of components and machinery, and transport companies. Various producers' associations and organizers of international trade fairs, spearheaded by. FENAC, a professional trade fair organisation, and ACI/NH, a local business association, also emerged.

2.5 The hosiery cluster of Tirupur, India

In 1935 the first hand-operated hosiery firm was set up in Tirupur. Till the 1960s, the cluster produced grey and bleached vests for the domestic market. In 1968, other items, mainly innerwear, began to be manufactured. In 1974, the first export consignment was shipped abroad. From 1980 onwards, some Mumbai and Delhi based exporters started opening offices at Tirupur, adding momentum to exports. Some of the producers at Tirupur also developed independent contacts with foreign buyers. This further widened the scope for exports.

Rapid growth of exporters operating with narrow margins led to unhealthy competition. Sub-contracting (which was widespread) often led to inter-firm disputes across the value chain. Moreover, the rising demand for various infrastructural facilities like communication, power, road, export related infrastructure, etc. remained largely unaddressed till the late eighties.

Some forward-looking cluster stakeholders decided to address the above-mentioned problems. They founded the Tirupur Exporters' Association (TEA) in 1990. To ensure proper power supply, TEA purchased a plot of land by mobilising funds from its members, where an electric sub-station was installed by the local electricity authority. This was a turning point in the development of the cluster. Since then, TEA has taken lead in several initiatives including establishment of a modern industrial complex, promotion of an internal container depot, a facility for exhibitions of international level, a fashion institute, a public school, etc.

The cluster, which had only 200 hosiery units in 1961, had more than 4,000 small and medium scale units in 1997. These included 450 exporters and 1,500 manufacturers for the domestic market. They were supported by 650 dyers and bleachers and 1,500 process sub-contractors like knitters, embroiderers, compacters, mercerisers, etc. The cluster employs nearly 200,000 persons directly and indirectly.

Starting in 1974, the value of exports reached Rs. 40 billion (US$ 800 million) in 2001, while garments manufactured at Tirupur but exported through Bombay and Delhi accounted for another Rs. 10 billion (US$ 200 million). The value of garments manufactured for the domestic market is estimated at another Rs. 20 billion (US$ 400 million). The cluster produces undergarments, T-shirts, cardigans, jerseys, pullovers, nightwear, ladies' blouses, skirts, trousers, sportswear, etc.

garments clusters of Chiyapum and Bangkok, etc. Among the 50 clusters identified in Pakistan, apart from the Sialkot cluster, the clusters of electrical fans (Gujarat) and farm machinery (Daska) stand out.

Mexico's footwear industry is clustered around Leon and Guadalajara. The Peruvian shoe industry consists of about a thousand small and micro firms manufacturing footwear and tanneries clustered around Trujillo. Internationally, Brazil is a leader in leather shoe exports. Apart from the Sinos Valley, export-oriented shoe manufacturing (specializing in men and women's shoes) is concentrated in Franca. Other examples of clusters in Latin America are the metalworking cluster in Tegucigalpa in Honduras, the handicraft, hammock and ceramic production cluster in Masaya in Nicaragua, the ceramic tiles and furniture cluster of Santa Catarina (Brazil), etc.

African clusters include the clothing cluster of Eastlands (Kenya), the metal products cluster of Kamukunji (Kenya), the processed fish cluster of Lake Victoria (Kenya); the metal work cluster of Suame (Ghana); the clothing cluster of Western Cape (South Africa); the leather products cluster of Aba and Onitsha (Nigeria) and the automotive spare parts cluster of Nnewi (Nigeria).

Unfortunately, most clusters are not exploiting their potential through cooperation. In such *under-performing clusters*, the level of collaboration among stakeholders, and therefore their ability to specialize, is low. Most of the production process is completed in-house and external services are rarely used. The firms do not have a unified agenda for development, continue to perform in isolation and therefore encounter more obstacles and lose more opportunities. Under-performance breeds under-performance.

The characteristics of successful (overachiever) and under-performing (underachiever) clusters are summarized in Table 2.2.

Table 2.2: Broad Typology of Clusters

	Successful cluster	Underperforming cluster
Number of principal firms	H	H
Domestic market share of principal firms	H	H/M/L
Export market share of principal firms	H	L/N
Structural efforts for growth by principal firms	H	N
Number of support firms	H	M/L
Domestic market share of support firms	H	H
Export market share of support firms	H	L/N
Structural efforts for growth by support firms	H/M	N
Relationship between principal and support firms	Hierarchical	Non-hierarchical
Presence of support service providers	H	L/N
Presence of technical institutions	H	L/N
Proactiveness of technical institutions for growth of principal firms	H	N
"Planned efforts" for growth through cooperation framework	H	N

Key: H= High, M= Medium, L= Low, N = Negligible or Nil

Chapter 3
Cluster Development Approach of UNIDO

3.1 Background

Lack of communication and scepticism towards common ventures characterize traditional business practices in underachieving clusters. Moreover, local firms in such clusters rarely make use of business development services (BDS) and are not accustomed to presenting articulated calls for action to the local policy makers. Left on their own, such underachieving clusters remain trapped in a vicious cycle of cut-throat competition, falling profit margins and decreasing business performance.

To improve their business performance and comparative advantages – to become dynamic clusters – such clusters must learn to undertake targeted joint action and increase their stock of social capital.

3.2 Objective of cluster development

The cluster development approach sees the key problem faced by SMEs as one of relative isolation rather than size. Its aim is to help cluster actors to (1) develop a consensus-based vision for the future and (2) strengthen their capacity to act upon that vision. To elaborate these two points, the objective is to:

- Strengthen linkages within the cluster – with other SMEs, larger enterprises, support institutions local government, banks, business schools, etc. At times such linkages are also created with important organisations (private/public) outside the cluster;
- Assist cluster stakeholders to develop a consensus-based vision for the cluster as a whole;
- Help stakeholders to coordinate their actions and pool their resources to move towards a shared vision for the cluster as a whole; and
- Create an autonomous governance framework, in a step-by-step process that will sustain dynamism and change in the cluster after the withdrawal of the implementing agency.

3.3 Implementing agency

Attaining these objectives requires external assistance in the form of sensitisation, trust building, conflict resolution, network creation, project implementation, etc. As explained later, private (that is profit-oriented) agencies are unlikely to initiate such activities since the outcome here is uncertain that they are unlikely to be profitable in the short term, and at the same time, since the beneficial effects

are freely available to all the cluster stakeholders, it is nearly impossible to price them appropriately, the latter being a pre-requisite for private sector involvement in initiating cluster development.

3.4 Basic principles

The key characteristics of the cluster development approach are:

3.4.1 A need-based approach

Cluster development does not start with a predetermined agenda. The developmental agenda for each cluster is based on the demands articulated by its stakeholders. In the medium term, only those activities that are endorsed by the stakeholders are implemented. In those instances when supply-driven activities are launched, this is only to create interest among stakeholders. While each cluster faces a wide range of challenges and opportunities, some priority areas for action ("pressure points") can be quickly identified. In all cases, however, pressure points and the way in which they should be addressed depend on the peculiar features of the cluster.

3.4.2 Flexibility

As the approach must be applicable across a wide range of sectors and countries, a flexible intervention mechanism is required to produce a customized action plan. The success of a cluster development initiative thus depends on the flexibility and empowerment of the programme designers and implementers, and in particular to the CDA who works directly with the stakeholders. The approach acknowledges that a sizeable part of any annual plan cannot be known in advance, as it emerges naturally from day-to-day interactions with the cluster stakeholders. The process of development of cluster through this approach therefore warrants that the implementing agency should be willing to support a cluster in a variety of activities.

3.4.3 Intermediary driven support

An integral part of the approach to cluster development is to give responsibility to intermediary institutions such as industry associations, NGOs, institutionalized firm networks, service providers, etc. In underperforming clusters, they often have very poor implementation capacities and may need to be revived, depending on the nature of the cluster and types of intervention. These intermediaries are expected to take increasingly a leading role in the identification and implementation of activities, with the aim of "institutionalizing" the process of cluster development – of creating a system of self-governance in the cluster. In due course, most of these intermediaries become fully empowered and emerge as the centre point of the governance framework in the cluster.

3.1: Needs-based approach in Indian clusters

In providing assistance to Indian clusters, UNIDO has addressed the most urgent problems of the individual clusters. In the case of the processed food cluster of Pune this was 'quality', in the handicraft cluster of Jaipur 'marketing', in the Ludhiana knitwear cluster 'marketing and HRD' and in the hosiery cluster of Tirupur 'HRD' and quality'. Activities in the Jaipur cluster, for example, started off with marketing training, joint marketing, etc. Innovative marketing ventures (of increasing complexity and duration) remained part of the action plan of this cluster throughout the intervention. Activities in the Pune cluster started with training and provision of BDS services to improve quality, and these types of activity took place throughout the programme.

3.5 Steps of cluster development approach

The principals of the approach are:

- **Selection of clusters**: A judicious selection based on the cluster's importance, promotability, viability and sustainability helps to ensure an effective and wide-reaching impact. This ensures that the available resources are concentrated on clusters where the approach can have significant impact by contributing towards business gains

3.2: Role of intermediaries in Indian clusters

During implementation of a cluster development approach in Pune, the local Chamber of Commerce emerged as the umbrella association providing critical services related to consultancy, information and testing (through a newly created laboratory). In Ludhiana, the Apparel Exporters Association of Ludhiana (APPEAL), was created in the framework of the project and was gradually empowered by the CDA. In Tirupur, a partnership was forged with an existing exporters' association; a training institution became a real service provider for the industry. In Jaipur, an existing NGO was empowered to take up economic development initiatives hitherto not covered by it's operations. In several cases, networks had to be created from scratch. For example, a network of domestic knitwear manufacturers was created in Ludhiana and it triggered many changes, while the network of exporters (COTEX) and printers (self-help groups) initiated numerous marketing activities in Jaipur.

of the SMEs, revitalization of systemic interactions among stakeholders, dissemination of best practices, etc.

- **Diagnostic study**: Implementation of the cluster development initiative starts by gathering information about the cluster in a strongly participatory manner. Such information includes constraints faced by the stakeholders, untapped potential, local linkages and support mechanisms available, etc. The participatory process helps to build initial trust with the local stakeholders.
- **Trust building**: Establishing an atmosphere of trust within a cluster is an essential prerequisite to earn the support from those involved in the cluster. Here the CDA must first develop "bilateral" trust with individual stakeholders and then use it to create/enhance trust among the other stakeholders. The process starts with informal/formal interactions and later takes the route of trust building through participation in activities.
- **Action plan**: This list of activities (generally for a year) which is more than the sum total of demand from the different cluster stakeholders; starts with inputs from the diagnostic study. It is a roadmap that will help foster relationships among the stakeholders while delivering visible results. It is also an attempt to embody the vision for the cluster as a whole in a set of activities that can be implemented through stakeholder collaboration. Action Plan is made annually.
- **Implementation**: This is not simply the realisation of the targets set, but involves a radical change in the way the cluster stakeholders interact and conduct activities. The responsibility for implementation of various activities is progressively shifted to the stakeholders, particularly those in the private sector, with support from local institutions. In the implementation of the action plan the stakeholders discover the advantages of closer cooperation. Joint activities with intermediaries also enhance their capacity and strengthen the governance structure of the cluster. The last phase of implementation consists of execution of an exit plan.
- **Monitoring and evaluation**: Monitoring of the quantifiable and qualitative outcomes of implementation helps to disseminate best practices and strengthen trust among stakeholders. It also allows the identification of emerging changes in the relationships among cluster stakeholders and the adaptation of cluster activities and governance structures to these.

3.6 A process approach

The process of cluster development is non-linear because the volume of activities is a positive function of social capital of the cluster. As long as social capital is low, activities move very slowly and gather momentum only slowly. As confidence builds up and linkages increase, the activities pick up, which again increases confidence in each other. Mistrust can again slow down the process.

As the programme matures, certain activities may lose significance either because they were of a purely instrumental nature (such as activities to "break the ice" among stakeholders) or because of better understanding of the real issues confronting the cluster. For this reason it may be counterproductive to insist on pre-conceived milestones to gauge the development of the programme. It should on the other hand not be a

surprise to learn that a significant proportion of the activities implemented (up to twenty per cent) are unplanned.

3.7 The role of CDAs

The approach calls for the appointment of a full-time cluster development agent (CDA) for a fixed time period by the implementing agency. The CDA plays a pivotal role in the assessment of the development potential of the cluster. Especially in the early stage of the intervention, the CDA being neutral and mandated to encourage group activities with direct or indirect business relevance - are also the engine behind cluster development. Increasingly, as trust is built up among the stakeholders, the CDA leaves "routine" activities to others and passes on the task of initiation as well as implementation of activities to local intermediaries. Through these intermediaries, the CDA can upscale activities in the cluster, especially where initial success leads to higher demand for those. The final task is to fill the gaps in the ability of intermediaries to identify tasks and implement activities on a continuous basis, to establish a system of self-governance in the cluster.

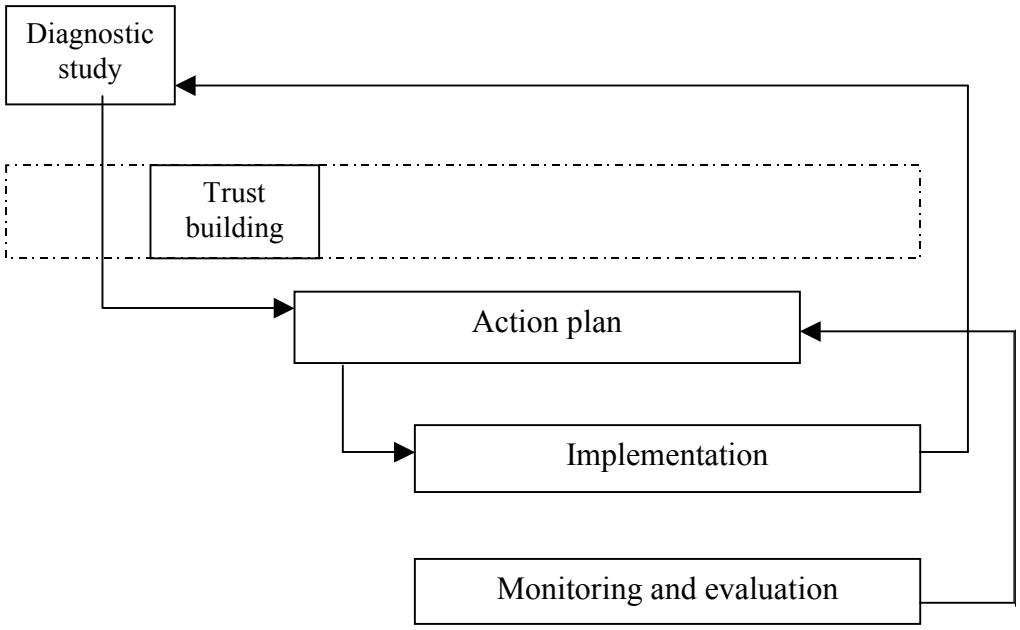
3.8 The loop approach

The various stages of cluster development are not mutually exclusive. They often overlap. In particular, the trust building phase is a continuous one. There are formal ways of building trust (discussions, workshops, etc.), but trust building between the implementing agency and the cluster starts even during the process of project selection, and also during the diagnostic study. Trust is also an integral part of the interaction among stakeholders during action plan formation, implementation and monitoring and evaluation.

The diagnostic study is basically a continuous process. As trust between the CDA and the stakeholder increases, more relevant information emerges and a clearer picture regarding the cluster is revealed. The diagnostic study is thus revised (at least internally, if not formally) and the action plan is modified accordingly.

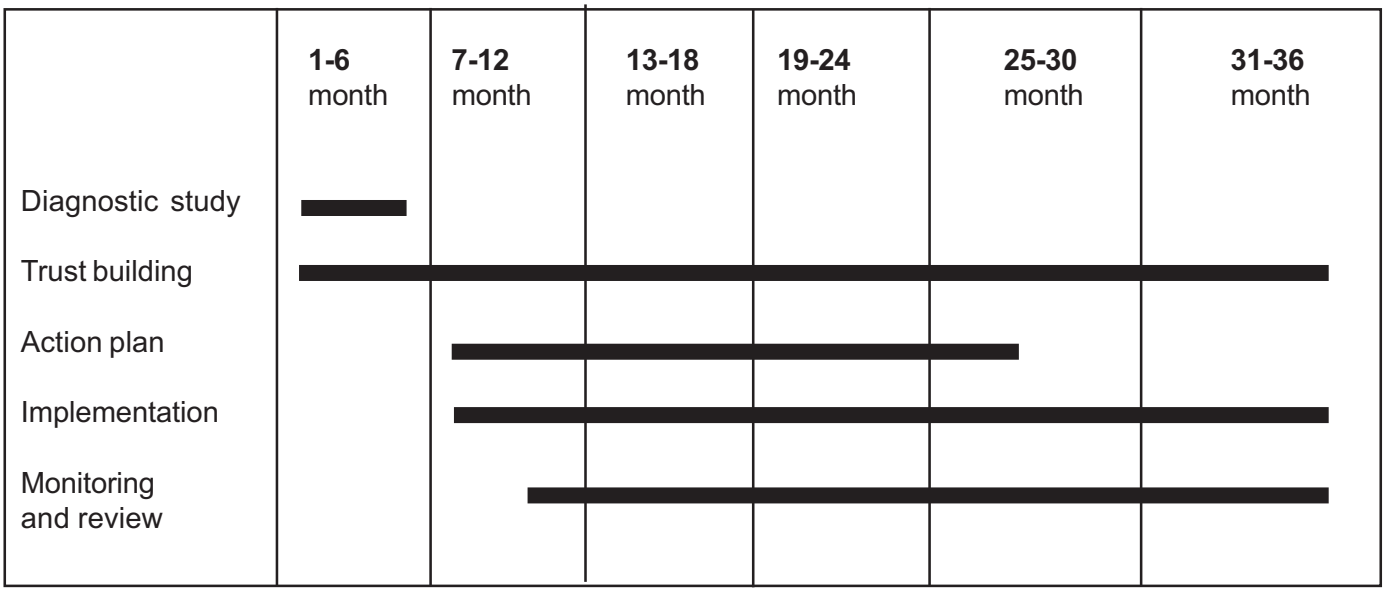
The information the CDA gathers during implementation is vital for updating a diagnostic study and the subsequent revision of action plans or formulation of new ones. During the monitoring and evaluation phase, vital information similarly emerges regarding the speed, scale, coverage and resource requirements of activities that are being implemented. These have their effects on new or revised action plans which in turn determine the partners for implementation, degree of up-scaling, etc. The cluster development approach is therefore not linear; it is a loop – a dynamic approach (see Figure 3.1).

Figure 3.1 Cluster development – a loop approach



The approximate duration of each phase is presented in Table 3.1.

Table 3.1 Approximate duration of stages of cluster development approach



The time period can easily stretch to 4 to 5 years for some clusters, especially artisanal clusters.

Chapter 4
Selection of Clusters

4.1 Need for Selection

The cost of launching a cluster development project can be substantial, especially in the least performing clusters, and the human and financial resources required to prepare and implement an action plan, to monitor the process of cluster development and to institutionalize the lessons of implementation are frequently scarce. An organization should therefore use its resources economically, aiming at:

- *Generating a visible impact at the cluster level*: It helps to focus on MSME clusters that play an important role in the local economy because of their size or market potential. Successful intervention in such clusters will have a highly visible impact and will readily demonstrate the potential and appropriateness of the approach.

- *Maximising the scope for learning*: Implementing agencies that are capable of handling more than a cluster at a time should select a portfolio of different clusters (e.g. handicraft vs. industrial, export vs. domestic-oriented ;), so that implementation can generate wide-ranging experiences. There is a limit to the extent to which scale effects can be created by applying lessons to clusters of the same nature, because of their typical local conditions.

- *Maximizing spillover effects*: The more (potential) linkages exist between industries, the greater is the potential development impact on the local economy.

4.2 Steps for cluster selection

Selection of clusters generally includes the following steps:

- Identification of clusters in a country;
- Creation of country cluster table and map;
- Preliminary selection and shortlist of clusters;
- Formulation of final selection criteria;
- Collection of primary data;
- Final selection of cluster(s)

4.2.1 Identification of clusters

A broad guideline for selecting potential clusters would contain elements such as location, product, whether vertical or horizontal, major growth factor, etc. Where a good database exists and where previous work has been undertaken in clusters, the selection process is fairly simple. Since cluster development is a relatively new approach in the field

of MSME development, an inventory of clusters in the country with the information required for proper cluster selection is often not available.

Clusters can be identified through secondary sources combined with expert opinion.

Secondary sources of information

In countries like Italy and the United Kingdom (UK), SME clusters have been defined using statistical parameters such as employment shares in particular industries in particular areas. In the UK such data – which are strictly speaking only indices of concentration, and say nothing about successful clusters or cluster potential - were complemented through primary data on (a) the stage of cluster development (embryonic/established/mature); (b) depth (variety of cluster stakeholders) (c) dynamics (growing or declining) and (d) economic significance (regional/national or international). In addition to statistics, development plans, policy documents, etc. can be used.

One major problem of this approach is that comprehensive data on the proposed parameters are not available in many countries. Moreover, the statistical approach is very sensitive to the parameters used: the same locality would show up as a cluster using one set of census data but may fail to do so using a different set. Also, the follow-up work undertaken in the UK often indicates that people working in the presumed cluster or leaving it are entirely unaware of its existence. This point to a major drawback of this approach: it does not pick up evidence on the extent and frequency of cooperation among stakeholders. Policy documents in most countries likewise do not pay much attention to interrelations among firms yet. Finally, this type of information is always a few years out of date. Secondary material should therefore be combined with the following approach.

Case study or expert opinion approach

In this approach, a team of experts, who are familiar with the MSMEs of the region/country, or an agency working in the field of MSME development is entrusted with the task of cluster identification. MSME support institutions can play a useful role in assisting these teams.

The major guidelines for data collection at this stage are to (a) identify clusters with their places of major concentration and broad product ranges, and (b) get some minimum qualitative information on its type (natural/induced), nature (vertical/horizontal/large unit centred), major growth facilitating factor (technology/product/export) and key problem(s).

Many data can generally be collected from secondary sources like annual economic plans, industrial policy documents, industry review journals, or reports published by development organizations. Discussions with knowledgeable people from development organizations or SME support institutions can help to check data, remove overlaps and fill in gaps. Such information collection is a cumulative process.

This approach still may not answer some questions. Given the fact that all stakeholders in the cluster should be able to frequently interact on a face-to-face basis – what sort of contact frequency determines the geographical “reach” of a cluster? Is there a minimum number of firms below which we cannot speak of a cluster?

4.2.2 Country cluster table

The data of clusters can be plotted on map of a country. A cluster table can also be used. The cluster table provides details on each cluster, based on some chosen criteria (Table 4.1). A suggestive country cluster table for a few clusters appears below.

Table 4.1: Country cluster table

S.No.	1	2	3	4	5	6	7	8	9	10	11
1	Drugs & Pharmaceutical	Ahmedabad	NA	N	Y	HZ	M	M	H	Mkt.	Quality
2	Textile Hand Block Printing	Sanganer-Bagru Belt	NA	Y	N	HZ	L	M	H	Mkt.	Marketing
3	Hosiery	Tirupur	NA	N	Y	HZ	M	M	H	Mkt	Infrastructure
4	Machine Tool	Bangalore	IN	N	Y	L	M	M	H	Mkt.	Marketing

Explanation of Columns 1 to 11

1. Name of Cluster

2. Location in India

3. Natural (NA)/Induced (IN) cluster

4. Whether the product belongs to traditional art/ craft

5. Modern SME

6. Large unit Centred (L)/Vertical (V)/Horizontal (HZ)/both (B)

7. Degree of Product Specialisation

8. Need for Technology Upgradation

9. Export Potential

10 . Market based (Mkt.)/Resource based (R)/ infrastructure based (I) cluster

11. One Major Problem

(Note: Y=Yes, N=No, H=High, M=Medium, L=Low)

4.2.3 Shortlist of clusters

Using the above tools, a preliminary shortlist of clusters can be made. The shortlist will differ according to development priorities. A regional agency will concentrate on a cluster or the clusters in its territory. A sectoral/functional specialized agency will select similar clusters in different regions. An agency with no regional or sectoral bias can select a mix of clusters distributed over regions and products, if it has the capacity to handle more than one cluster, and if there is added value (in terms of cumulative development effects) in assisting a mix of clusters.

4.2.4 Formulation of final selection criteria

The set of short listed clusters is the basis for the selection of the cluster(s) to be supported. The following criteria can help the implementing agency to make the final selection:

Importance of cluster(s)
Clusters with a great number of small-scale firms, clusters that absorb a significant share of the local workforce or that have high export potential have a great potential impact. The location of the cluster (urban, semi-urban or rural) is also an important element if the responsible institution has a specific development mandate/competence, such as rural development. Choosing one of a number of similar clusters enhances the chance of replicability (although, as pointed out above, differences in local conditions limit replicability). Linkages of a cluster with other sectors increase the likelihood that its development impact on the overall (local) economy will be greater. More and more, strategies also stress the importance of sustainability in all respects: reducing social and/or environmental costs or – better – building up clusters with a positive social impact (for example, clusters which increase demand for skilled labour) and environmental impact (for example, the prefab “eco-housing” cluster in Lower Austria).

Viability
Cluster selection should focus on industrial sectors with solid growth prospects; effective government policies for promising industries can be an additional factor in selecting clusters. Clusters serving higher-end markets can generally be considered to have the best long-term growth prospects, but low education levels and competition among enterprises which focuses on prices rather than product quality can be obstacles to the development of such clusters.

Promotability
The promotability of a cluster refers to the presence of institutions or associations in the cluster that enjoy the trust of the entrepreneurs, capable leadership, adequate business infrastructure and a conducive policy framework. Such clusters provide the best framework conditions for development and creating leadership by local stakeholders.

Complementarity
Optimal use of resources is also promoted by exploiting synergies. For example, the effectiveness of a technical upgrading programme can be greatly enhanced if complemented with a marketing related programme. Isolated activities by different institutions at different periods of time tend to lead to sub-optimal results.

4.2.5 Information needed for cluster selection

Whether these criteria are met can be ascertained by using the following checklist.

Table 4.2: Primary data required for cluster selection

1	**Does the cluster have a minimum critical mass ?**
	* Number of firms, firm distribution (large/medium/small)· * Estimated turnover of broad groups· * Contribution to employment (men and women) and income· * Contribution to exports· * Importance of product in the chain * Sales trends · * Seasonal/mainstay activities
2	**Location of cluster**· *Within a city/village/linkage with nearby cities/villages (if executing agency has a specific rural/urban mandate) · *Presence of support firms and service providers
3	**Replicability**· *Size of the industry, number of similar clusters· *Linkage with other clusters at that location
4	**Social and environmental conditions**· *Sketchy profile of typical owners/managers, and workers and of their economic status · *Average yearly earnings (man/woman) of workers/unit owners *Drudgery in activity, if any· *Pollution related issues· *Legal issue related to quality
5.	**Viability**· *What are the prospects of upgrading production technology?· *Does the product has a future in current national/global settings?· *Main markets (geographical, consumer segments)· *Major threats · *Stage of product in the product life cycle· *Value chain position
6	**Promotability**· *Have firms undertaken product upgrading or diversification, explored new markets, made *technological innovations, invested significantly in or updated equipment, etc.· *Does the birth rate of firms substantially exceed closure rate?· *How sensitive are firms to major issues that are bothering them?
7.	**Complementarity**· *Potential for complementing other development· *Scope for value added of a support project

This information can be collected in the following steps:

1) Get secondary data on the industry trend in general.
2) Ask for a broad write-up on the cluster and on-going SME support activities from appropriate local agency or a knowledgeable person with a connection to the cluster stakeholders.
3) Prepare a fact sheet on the lines of Table 4.2 and identify gaps.
4) Request the same agency to organize some meetings with some principal stakeholders in the cluster. Meet them in groups if possible.
5) Request the same or another suitable agency to organize one/two factory visits. Focus on the production process.
6) Organize a two-day visit to the cluster. Meet the agency representative, if possible the person who interacts with the stakeholders of the cluster. Then visit two dissimilar units (SME and large or local and export-oriented firm, etc.), discuss the value chain and production/finance/market related problems and try to gauge the aspirations of the firms. Meet association executives and other principal stakeholders. Have an open forum discussion with the principal firms.
7) Share the programme objective, findings and probable future actions with the cluster stakeholders in a concluding discussion.

4.2.6 Final selection of clusters

Different values are given to each criterion on the basis of the information gathered. The scoring system for each criterion proposed below can be adapted to the nature of the cluster and the priorities of the implementing agency. However, it is suggested that criterion 1 (minimum critical mass) is the minimum prerequisite and criterion 5 (market potential) may dominate the score. To facilitate the final selection of cluster(s), a table with the weights and the scores of the different clusters can be made. The conclusion from Table 4.3 would be that cluster X is the most promising one for intervention.

4.3 Final cluster selection table

	Weight	**Score**			**Weighted score**		
		X	Y	Z	X	Y	Z
Existing contribution to local economy	10	5	4	6	0.5	0.4	0.6
Location of cluster	10	4	8	5	0.4	0.8	0.5
Outreach	20	6	4	6	1.2	0.8	1.2
Socio-environmental condition	0	2	8	4	0	0	0
Market potential	40	8	3	5	3.2	1.2	2.0
Promotability	15	4	5	5	0.6	0.8	0.8
Subsidiarity	5	5	6	3	0.3	0.3	0.2
Total weighted score	**100**				**6.2**	**4.3**	**5.3**

Note: W => Weight; W. Score => Weighted Score; X, Y and Z are the three clusters.The scores vary from 1 to 10 and the total weight is 100.

Assuming that the organizational hierarchy of the implementing agency can be divided into top, middle and implementation levels, the following role matrix is suggested for an agency for selection:

	Top management	Middle management	Implementation level
Creation of macro guidelines			
Collection of secondary data			
Creation of country cluster map and country cluster table			
Initial selection of clusters			
Creating final selection criteria			
Collection of primary data			
Final selection			

Chapter 5
Trust Building and Social Capital

5.1 What makes a cluster work?

Enterprises can benefit from being located in close proximity to each other. Such positive effects can be called *"passive external economies"* because they accrue despite any planned efforts by the firms. Such gains are a necessary but not sufficient condition for cluster growth. The benefits of clustering are the outcome of explicit *"joint actions"* among stakeholders – the firms in the cluster and a range of other entities playing a supporting role, such as service providers, banks, government and non-governmental support institutions, associations, policy makers, retailers, wholesalers, inputs providers, etc. Targeted joint actions lead to what has been called *"active external economies"*. In such actions, the stakeholders break down ventures, which would be too risky for them individually, into small steps, which they can handle together and which minimize the risk of failure.

In an overachiever cluster, stakeholders address challenges and opportunities by jointly agreeing on priorities, strategies and activities and implementing the same. Such cooperation is not all pervasive. In fact a strong element of competition constantly propels the stakeholders.

Intense competition is often observed to control resources (natural, human and capital) and to access infrastructure (physical, administrative, information, science and technology). This secures efficiency in factor use and, most importantly, breeds specialization, which are essential for the shift to a *"high-growth"* path.

How can cooperation and competition be combined, how can the forces of competition be harnessed to ensure high growth throughout the cluster? This depends on the existence or development *trust* and *social capital*.

Trust in the present context, is not an absolute concept. For the present purpose it is a level of understanding among stakeholders that facilitates a joint activity, ensuring that all relevant information for that joint activity are shared and that the best of efforts are made for achieving the objective of that joint activity. It could be called *functional trust*. The more complex an activity, the higher the level of involvement (sharing and dependence) of different stakeholders, and the higher the level of functional trust required among those stakeholders. The stock of all such relationships based on shared values and a culture of (local) belonging, enshrined in long-accepted practices and ways of behaviour but also underlying formal agreements or codes of association, is the *social capital* of a cluster.

It is obvious that the two are closely related. Trust is a key element in the creation of widely accepted business practices: without it, every contingency would have to be spelled out for every business transaction. Without shared values, people cannot be expected to trust each other.

5.2 How to build trust

The process of building functional trust starts with formal or informal interactions and bears fruit in tangible improvements in interaction. Discussions alone may not lead to any tangible results, but they certainly help to create the momentum. An external catalyst, the cluster development agent (CDA), who enjoys the trust of each cluster stakeholder, helps in the creation of trust among stakeholders.

Visits to better performing clusters can create a positive atmosphere and get rid of many doubts and inhibitions among stakeholders, as negative atitudes are often picked up through secondary sources and do not have a factual basis. New areas of cooperation can also evolve during such visits, from discussions and comparisons of performance.

When there is a total lack of motivation, innovative ways to build trust can be used, as Box 1 shows.

5.1: Strengthening co-operation among the block printers of Bagru

Marketing had been a serious issue for the artisans of Bagru - a village belonging to the hand block printed textile cluster of Jaipur. Availability of look-alike screen-printed products added to this problem. Many printers tried to survive by cutting costs and quality. As a result the level of business trust among many of them fell.

A diagnostic study showed that an attempt to cooperate had failed some twenty years before. No further move had been made since. The reluctance of the firms to participate even in an introductory meeting to work out a development plan unearthed the severity of the issue.

The Cluster Development Agent (CDA), therefore shifted the focus of awareness building towards the sons of the artisans, who are block printers themselves. The CDA hoped that the younger generation would be more forthcoming and their superior education would equip them with a longer-term approach to business.

A series of meetings (one to one, groups and small groups of likeminded people) were conducted to identify the needs and priorities of these young artisans. This was a very time consuming task without any tangible short-term result. But the meetings led to a keen shared interest in strengthening marketing skills, and the young artisans agreed to contribute for a suitable training course.

In conjunction with a local non-government organisation - Indian Institute for Rural Deveopment (IIRD) - and with the support of the Small Industries Development Bank of India (SIDBI), a market-orientation training programme was organised in Bagru for 23 young artisans with an average age of 21. Besides classroom teaching on market promotion, quality testing, product development, advertising and distribution, the programme included a visit to Delhi (to showrooms and representatives of artisan support agencies) and Jaipur (to the larger block-printers and export houses).

The young artisans were enthusiastic. They became more confident about their marketing skills. They also became interested in various existing artisan support schemes, of which many had been unaware. They were surprised about the gross profit margins showrooms earned from products bought at Bagru. The enthusiasm available in-house (literally) spread to the parents, who started to show up at the following meetings, now convinced by the sons of the ability of the CDA to deliver services that were important to them.

Concrete activities are important to ensure that trust building picks up momentum. They should ideally revolve around areas of prime business interest and lead to the realization of some short-term goals. New issues will emerge as these activities are implemented. The stakeholders will decide together which of these are important, and trust is created for handling the new issue together. Over a period, stakeholders gain trust to tackle broader objectives together.

Functional trust depends on the nature of the activity and is therefore needed at various levels for different joint activities, for example trust within a business network, between a network and a financial institution, between a network and a technical institution, between technical and financial institutions. If a CDA is involved in the creation of trust, then (s)he should also develop trust bilaterally with all cluster stakeholders.

5.3 Indicators of trust building

The emergence of trust in a cluster can be monitored. Several developments provide useful elements to judge the evolution of such a process, such as:

- *Creation or revival of focused networks/associations in the cluster* is an indicator that greater consensus is spreading in the cluster.

- *Increased level of participation* of networks/association members in decision making

- *Increased level of stakeholder commitment*: They not only prepare their own long-term vision and consequent action plans, but are willing to commit their own resources and explore additional sources of funding for common plans and activities.

- *Stronger co-operation among the stakeholders* resulting in a free flow of information, participation in fairs, common purchases, training of manpower, joint marketing, etc. These forms of co-operation are a sign that long-term relationships begin to emerge.

The CDA should keep track of the development of trust. This can be done with a table containing the above elements in rows, and columns where a qualitative judgement of progress (or lack of it) is entered at certain time intervals (e.g.: Level of participation, 1/1/2003: low, 1/6/2003: improving, 1/1 2004: high)

5.4 Breakdown of trust

Trust may break down due to wrong expectations which result from sub-optional communication. This needs to be remedied immediately through open discussion. Intermediary stakeholders who enjoy the trust of all parties should be involved in such a discussion. A good, continuous information flow among stakeholders is very helpful in handling such contingencies.

5.5 Social capital

Social capital is similar to other forms of capital, such as machinery (physical capital) and training (human capital), in the sense that its presence significantly increases the productivity of labour. Like other forms of capital it is accumulated over time. The social capital accumulated during a long common history in performing clusters is the reason why stakeholders find it natural to disclose their problems and agree on a set of activities that can help solve those problems. Each successfully solved problem or efforts made for the same increases the quantum of social capital and leads new joint activities in the cluster.

An example: building on their social capital, a group of high end manufacturers can shift from a mindset focused on domestic competition to competing for a share of high-value products in a new market. The manufacturers can jointly identify and use the services of a designer for products for the targeted market, share a big stall at a fair and get a discount or a better location, develop a profile as a group to facilitate trust building with new buyers, etc. During the fair they will of course strongly compete with each other for orders through product differentiation. Thus, by creating linkages, sharing concerns, identifying a joint action route and competing, they enhance the competitiveness of the cluster and enlarge its share in exports.

5.6 How can social capital be activated?

In a cluster, level of social capital can be enhanced by:

(a) Promoting forums for a dialogue among cluster stakeholders by re-activating of networks/associations,
(b) Encouraging cross-fertilization of ideas via the umbrella associations of the different cluster stakeholders,
(c) Disseminating awareness about the advantages of joint action through the cluster, and
(d) Enabling cluster leaders to conceptualize and implement joint initiatives.

The creation of social capital is often not a considered a priority area because the fruits of social capital are less visible than other forms of capital investment. In a performing cluster, sound infrastructure, new technologies and good support services are more visible than the focused joint actions that were often required to generate them. Therefore, this requires investments of resources (time, capital, manpower) and some well-tested techniques , to achieve the same.

5.7 Cooperation matrix

One can gauge the current status of social capital in a cluster with the help of a cooperation matrix. Each cell in the matrix assigns a value to the strength of linkage between two stakeholders in the cluster. There is not necessarily a linkage between two stakeholders. For example, a network of small knitwear manufacturers for joint marketing will have no reason to build linkage with a BDS provider in the field of energy. A network of dyeing machine manufacturers which aims to standardize some parts (so as to enable production in volume) will have no linkage with the above networks of knitwear manufacturers. BDS providers in energy unlikely to have linkages with designers.

Table 5.1 presents a hypothetical picture of the relationships in a cluster at a certain point in time. It is important to trace the developments of linkages in a cluster. This can be done with yearly matrices, or with more complex matrices covering several years

Table 5.1: Hypothetical cooperation matrix of a cluster

	NW 1	NW 2	AN 1	AN 2	UF 1	BDS 1	BDS 2	SI 1	SI 2
Network 1	1	NA	0	NA	0	0	0	1	0
Network 2	NA	2	NA	1	0	1	1	1	1
Association 1	0	NA	1	0	1	0	0	0	0
Association 2	NA	1	0	2	1	0	0	1	1
Umbrella forum 1	0	0	1	1	NA	0	0	1	1

Key:
AN = Association, NW = Network, UF = Umbrella Forum, SI = Support Institution, BDS = Business development service provider, NA = not applicable.
Score values: 0 - no linkage and/or open conflict; 1 - stakeholders barely know of each other, no impact on the cluster as a whole; 2 - positive linkages and some history of mutual help, some impact on the cluster; 3 - strong propensity to cooperate based on a supportive history; 4 - excellent existing linkages with significant impact on the cluster as a whole.

It can be readily seen that the social capital of the cluster is low as the linkages are weak. This is usually also true for network linkages, where cooperation tends to be limited to specific areas.

Chapter 6
Diagnostic Study

6.1 Purpose of a diagnostic study

After identifying the under performing cluster(s) to be assisted, the task of the implementing agency is to obtain a more in-depth picture - to identify the cluster(s) strengths and weaknesses, the environment in which it or they operate and the steps to be undertaken for sustainable development. This information is obtained through the diagnostic study of cluster(s). It is important to stress that, in a complex and highly interdependent environment such as an SME cluster, no one-off study can be expected to identify all relevant aspects. A diagnostic study provides a broad framework, which will need to be regularly fine-tuned and revised with the stakeholders. In a nutshell, the objectives of a cluster diagnostic study are to:

- Understand the socio-economic environment of the cluster;
- Identify the most effective leverage points for intervention;
- Provide a baseline for future monitoring and evaluation;
- Build initial trust with and among the stakeholders.

Building on the findings of the diagnostic study, and working with the cluster stakeholders, a vision for the cluster and a strategy to achieve it and the cluster action plan is drafted.

6.2 Who will do it?

Depending on the complexity of the cluster, the diagnostic study can be made by a small team or a single consultant. After completing the diagnosis, the consultant or the team (or at least its senior professional) can act as facilitator in drafting, validating with stakeholders, and initiating the implementation of the cluster action plan. The CDA should preferably be appointed before the diagnostic study, so that (s) he can be a part of/supervise the exercise.

6.3 Steps in cluster diagnosis

Before introducing the research agenda that lies at the core of the diagnostic study, it may be useful to recall that an SME cluster can be a very complex environment. It contains firms as well as a range of other stakeholders. It is crucial that the CDA and the entire team that undertakes the diagnostic study are fully aware that the study may be a very complex one. The diagnostic study will uncover

interdependencies that have never been noticed by the cluster stakeholders before. The steps can be summarized as follows:

- Collect basic data about the cluster (number, type and size of firms, types of product, location); Analyse the business segment in which the cluster operates;

- Conduct interviews with representative samples of the principal firms, other cluster firms, support institutions and SME associations;

- Make an appraisal of the cluster's structure;

- Make an appraisal of the strengths and gaps in services provided to the principal firms;

- Make a diagnosis of the governance structures;

- Combine these analytical steps in an overall diagnosis and summarize the challenges and opportunities faced collectively by the principal firms.

- On completion of the Diagnostic Study one should also draw up a cluster map that reflects the relationship dynamics of stakeholders with the principal firms.

The completed diagnosis should provide the basis for a cluster vision and strategic plan.

6.3.1 Collect basic data about the cluster

This part of the exercise can be based on the information collected during the cluster selection phase. Here the cluster table created during the selection phase can be used to explore specific aspects of the cluster in more detail.

6.3.2 Analysis of the business segment

In the current globalised markets, even those SME clusters, producing traditional products face continuous, strong pressures due to changes in technology, competition and market regulation. For example, in traditional rural metal or clothing sectors, SMEs producing for local markets may find those markets swept away by changes in agricultural techniques, by customers moving upmarket as they become more prosperous, or by cheaper and/or superior incoming urban or imported products.

For this reason, it is important that, prior to extensive fieldwork, the diagnostic team should become familiar with the broad environment in which the cluster operates, which in turn entails the following steps:

- Identify the market segment in which the principal firms operate and study the characteristics of and trends in:

  - Size, location and product requirements of national and international markets;

  - Market shares by product;

  - Size, location and strategies of the main competitors in the national and world economy;

- Type of technology used by product type;

- Supply conditions of other major inputs (e.g. skills, raw materials, components, energy);

- Any other significant features of the business segment, such as the influence of trading blocs and environmental issues.

- Identify a few (one/two) performing clusters operating elsewhere under near comparable conditions and study relevant characteristics such as their size, product range and methods of adding value to products, market share by product type, types of stakeholder, major markets, technologies used and strategies of the lead firms. Here one can even take a preliminary stock of the various performing and lead agencies and their areas of operation, major activities, etc. over the years and at present.

Sources of information can be surveys and censuses, national and international trade statistics, general and sectoral newspaper/magazines, speeches by industry leaders/agency chiefs, publications of national/international product associations/councils and the internet.

This preliminary study (which should not exceed a week of full-time work) may be contracted out. It is crucial that the information gathered is as up-to-date as possible.

6.3.3 Selection of samples and setting up interviews

After completing the preliminary analytical work, the field interviews must take place. It is crucial that representatives of all stakeholders are interviewed. Field practice suggests that the great majority of interviewees should be representatives of the principal SMEs, with a few interviewees representing large and supplier firms, support institutions, associations and/or networks. In addition, one or two policy makers and one two persons who know the cluster and the industry as a whole really well, should be interviewed. For a single individual, it is realistic to assume that three to four interviews can be carried out in a day.

Ideally the process should start with a meeting with an association executive and/or a knowledgeable person. It can provide general insights of the different types of firms and their performance. This information can complement information from secondary sources gathered in the first phase to make a representative sample of firms. While a balanced picture of the cluster is essential for a good impression of its character, potential and problems, the selection should largely include the more dynamic enterprises as these may help to identify ways forward for the cluster as a whole.

Interview schedules should preferably mix stakeholder types, to facilitate cross-checking of information and focus later interviews. The entire process should conclude by interviewing a knowledgeable person who can provide (a) insights on issues that have remained unanswered and (b) ideas about a vision and/or broad objectives to be pursued, a broad picture of which starts germinating within the mind of the interviewer (e.g. the CDA) by that time.
The CDA and the team should keep in mind the following points when meeting firms and institutions:

- The diagnostic study is NOT a formal survey.

- It is better to have in-depth discussions with relatively few enterprises and institutions, and cross-check issues, processes and insights than to obtain complete but mechanical responses from the maximum number of enterprises or the full range of institutions.

- Limiting the number of topics for an interviewer helps to have an insightful, structured analysis.

- Topics should not necessarily be introduced in the order of the format, but rather as dictated by the flow of the discussion.

- The interview should not last more than 90 minutes. Experience indicates that most people dislike longer interviews.

- Each interview (discussion and findings) should be recorded in a visit report. However, it is important to concentrate on the interview and not to making notes during the interview.

- On the basis of the information gathered from various stakeholders, a cluster map needs to be drawn up which summarizes the relations among the different stakeholders.

6.3.4 Interviews with principal SMEs

The aim of interviews with principal firms in this sample is to gain an in-depth impression of the actual business environment in which the SMEs producing the typical products of the cluster, operate (which is often very different from what secondary sources may suggest). All their main business functions, business relations and wishes for further development of business-related services should be covered.
The following points should be remembered when interviewing SMEs:

- Concentrate on qualitative information. Attempts to collect detailed quantitative data distract the interviewer from the goal and alienate the interviewee.

- However, basic information should be acquired on total employment and/or investment, percentage of sales abroad, amount of credit obtainable from suppliers or a bank.

- Questions may serve as "markers" for topics or lines of enquiry to be pursued in more detail if this helps to provide more insights into the particular SME being interviewed.

- If offered the team should tour the production and storage facilities at the start of the visit. This can reveal features and complexities of the enterprise that might not come out in a discussion.

6.1: Going in-depth in a particular area

Questions about machines, for example, introduce the whole topic of equipment supply. Where were the machines manufactured? How did the enterprise select them? What alternatives did it consider, and why did it choose the machines actually employed? Were they bought directly from the manufacturers, or from local dealers or second-hand from other enterprises? Are these dealers specialists in equipment or this type of equipment? Are they part of or close to the cluster? Were the machines bought as standard 'off the shelf' items, or were they customised by the suppliers or by the enterprise itself? etc. Do they provide after sales service? Are such services available easily in the cluster?

• The idea is to get some specialised interest only of the cluster through the thought process of the firms.

6.3.5 Interviews with other enterprises

The commercial relationships of the principal SMEs with other enterprises in the cluster, considered collectively, constitute the cluster's industrial organization, whose features go a long way towards explaining the cluster's innovativeness, dynamism, and growth (or lack thereof). The selection of these enterprises can take place on the basis of previous information about business links with the SMEs, or references to linkages during interviews of the first few SME samples.

In contrast with the interviewed principal SMEs, there is no need to get a full picture of the operations of this type of stakeholders - unless there are small enterprises among them which were specially mentioned in the course of the SME interviews, because of their particular relations with one or more of the principal SMEs.

The types of enterprise to be interviewed include:

• Large lead firms;

• Traders, export agents and exporters, typical buyers;

• Suppliers of inputs, equipment, technical and marketing services;

• Specialized BDS providers;

• Fellow-SMEs not covered by the first sample, which are found to be of particular importance.

The business interactions of these enterprises with the SMEs will normally be very diverse. It is neither practicable nor necessary to specify separate interview formats for all of them.

6.3.6 Interviews with local and national institutions and SME associations

As in the previous case, interactions with the principal firms in the cluster should be the focus of discussions. There is no need for a full picture of their operations; apart from basic information a perspective on their relations with the principal firm can be given. The institutions to be included are:

• Export promotion agencies;

• Agencies responsible for sub-contracting programmes;

• Technological and training institutes, local universities;

• Agencies providing serviced land, premises, common service facilities and advisory services; Providers of utilities;

• Financial institutions;

• SME and other relevant industry associations;

• Relevant government agencies (Ministry of Industry, local government departments, etc.).

6.3.7 Appraisal of the structure of the cluster

When all this information has been collected, the draft appraisal of the cluster is prepared. This is the first attempt to single out the elements on which a consensual development vision for the cluster can be based. The focus is on the operations and typical enterprise strategies of the SMEs and the nature and strength of business interactions within the cluster. Together, these will reveal the scope and dynamism of the cluster.

The two main issues are therefore:

• SME enterprise strategy

• Inter-firm industrial organization

SME strategy

The purpose here is to identify the operational and competitive strategies of the principal SMEs, to understand how they manage their central business functions (production, marketing, finance etc.) and what their strengths and weaknesses are. Innovative working-methods and procedures, if any, should be emphasized. These include:

• Improvement of products and processes;

• Development of new markets and customers;

• Specialization;

• Upgrading labour force skills;

• Replacing, upgrading and adding factory equipment, and

• Tapping new financial resources.

The pattern of outcomes is crucial to the design of the cluster action plan.

Inter-firm industrial organization

This of course includes the conventional exchanges of money, goods and routine services. A matter of special interest in the appraisal of inter-firm relations is how far, and in what ways, these relations include elements of jointly learning about markets, products, designs, processes, and the uses and sources of materials.

Of particular interest are forms of industrial organization in which the SMEs and/or their "enterprise-associates" have made deliberate cooperative efforts to foster the transfer, exchange, or practical absorption of information. A large manufacturer or exporter may, for example, have developed and harnessed the productive or design skills of its suppliers; an SME meeting a business contact's order may have made a point of learning as much as it could about that contact's final customers and their requirements.

This appraisal should cover not only the present state of interactions between enterprises but also the main features of their past development or of landmarks in the cluster's history. Knowledge of the past can significantly add to the understanding of the cluster's present functioning and its potential for further development, as the example shown in Box 6.2 . Such brief accounts can also provide an excellent complement to the analysis of the business segment.

6.2 The development of the Daska metalworking cluster

The small town of Daska in Pakistan has for several decades been a thriving centre of metalworking. A cluster of several hundred SMEs employing thousands of people has emerged. The cluster originally produced low-speed diesel irrigation pumps, through an intricate system of specialist inter-enterprise subcontracting of production and assembly.

In the early 1980s, the market for these pumps was sharply reduced by the introduction of high-speed diesel pumps, which the Daska SMEs could not manufacture. At about the same time, the large-scale Pakistani tractor manufacturers were facing cost-reduction pressures, which induced them to look for ways of outsourcing the production of certain components. An arrangement of mutual commercial advantage developed with the Daska SME Association, which obtained the orders and allocated them among its members.

As confidence grew on both sides, the large manufacturers have come to deal mostly with individual SSI suppliers and/or small, tightly knit supplier groups. This is not the only way the Daska SMEs have diversified. Some of them are now manufacturing metal-based consumer durables, on much the same basis of inter-SME process specialization as they used in producing low-speed diesel pumps. Their relations with the large tractor manufacturers have significantly broadened the Daska SMEs' markets and technical horizons.

6.3.8 Appraisal of support services

This appraisal will be based on interviews conducted with support institutions or private BDS providers, supplemented by comments by SMEs on the services provided by the institutions.

The appraisal should cover the following questions:

• Which useful business services are provided by institutions and commercial providers; how do they complement each other?

• How are these services organized; is there cooperation with the principal SMEs?

• What are the crucial weaknesses and gaps in these services - in terms of outreach, quality, cost, sustainability, or relevance - as perceived by the SMEs in the cluster and/or the team?

6.3.9 Assessment of the governance structure

The governance structure is easily identified and analysed in clusters that perform well, where more or less institutionalised frameworks exist to represent the various interests and demands of the cluster actors as well as to identify, prioritise and address the challenges faced by the cluster as a whole. The governance structure in a performing cluster consists of presence of industry associations/ consortiums and technical/financial institutions, which play pro-active roles in the development of the business environment of the cluster.

Besides there is close co-operation among these associations and institutions. The cluster also has various specialised service providers with close linkage with the firms and the associations/ institutions. Such institutional mechanisms are not always fully formalized. There may also be strong informal bond among a group of firms. Performance of the cluster depends to a great extent on the strength of relationships among various stakeholders who have learned to communicate effectively to address the ever-emerging set of problems/ opportunities in the cluster.
In under performing clusters such structures are weak or absent. During the field interviews (and even also after the appraisal has been drafted and cross-checked with the various clusters) stakeholder, the team should pay particular attention in identifying whether any structure(s) exist on which governance capacity, in terms of an organized capacity of cluster stakeholders to jointly react to challenges and/or opportunities, can be built. In the absence of these, the diagnostic study must establish which type of governance system would be suitable, whether it would have the support of the key stakeholders, and what resources it would require.

6.3.10 Overall diagnosis and SWOT

Having completed the different steps of information collection, the team prepares the overall diagnostic report on the cluster, with the following structure:

a) Development context: (1) A brief description of national and international markets for the typical product(s) of the cluster and the trends in those markets. (2) A brief description of one benchmark cluster and lessons thereof.

b) **Description of the cluster:** A brief summary description of the cluster as a whole in terms of location, product markets, number and size of firms, employment, etc. The summary may include a cluster map (see section 6.3.11 below), which shows the linkages of the principal firms with other stakeholders.

c) History and turning point: Presents the evolution of the cluster over recent years. The capabilities of the cluster to grow, compete and innovate should be highlighted. This part indicates the extent to which the cluster has been able to improve its products and processes, to enter new product markets and to broaden/deepen its production system.

d) Description of the cluster: A brief summary description of the cluster as a whole in terms of location, product markets, number and size of firms, employment, etc.

e) Organization: Describes how the cluster is organized, focusing in particular on the features which might explain the evolution of competitiveness and innovation. Of particular importance are the following elements:

• Strategies, organization and capabilities of the core producing firms and their relations of competition and cooperation;

• Organization of the system of production and distribution, and in particular the relationship between core producing firms, buyers and suppliers, and their cooperation in the improvement of products and processes;

• Description of the support system (marketing, technical and financial services). The role of intermediary institutions and associations in the organization of the cluster support system can be described here, as well as the role of regulatory agencies.

This relationship can be summarised into a cluster map (see section 6.4 below).

f) Social capital in action: Summarises the intensity of linkages, its institutionalisation, in particular with regard to the ability of stakeholders to respond to new challenges and opportunities through formulation of strategies and implementing joint activities to improve the organization of the marketing, production and other typical support systems of the cluster.

The diagnosis can be summarized in a table showing the strengths and the weaknesses, the opportunities and the threats of the cluster. This is the SWOT analysis.

Table 6.1 Model for SWOT analysis

	Current situation		**Future**	
	Strengths	Weaknesses	Opportunities	Threats
Markets				
Technology				
Inputs				
Innovation				
Skills				
Business environment				

On the basis of the above, the diagnosis should conclude with:

Vision, strategy and activity suggestions: An outline of the vision, strategy and activity suggestions comes out of the study and opens a “growth window” for the future and motivates the clients – the cluster stakeholders – for further action. The suggestive action plan (including broad groups and some activities) can be derived based on the SWOT and chances of achievability of the same, as understood by the study team.

6.3 Diagnostic study checklist for CDAs

- Get acquainted with the interviewees
- Interview length: around 90 minutes
- Questions should preferably be qualitative
- Collect as much secondary information as possible a priori so as to pose focussed questions
- Start by interviewing an association of principal firms and a knowledgeable person from any stakeholder category who knows the cluster well
- Use information received during earlier interviews to further sharpen questions
- Record the main results of the discussions *after* the interview
- Interview a mix of stakeholders to facilitate cross-checking
- Conclude the interviews with a discussion with someone (from any stakeholder category) who knows the cluster well.

6.4 Cluster map

The development of a cluster has multiple dimensions. As will be evident from the SWOT analysis of a cluster, it may include increasing turnover, establishing new markets, enhancing production efficiency, improving environmental conditions, etc. However, creation or improvement of linkages among stakeholders can be the key to progress in any front. For example, in order to establish new markets, competing firms may need to first agree to create a network and liaise with a range of other stakeholders like institutions, BDS providers, new suppliers, new customers, etc. These new linkages add to the social capital of the cluster and provides a governance structure, which again is the basis for undertaking new activities.

6.4.1 Need for a cluster map

Cluster map provides a summary diagrammatic description of (a) types and number of stakeholders involved, (b) nature of linkages of various stakeholders with the principal firms and (c) strength of such linkages.

The map drawn at the time when an agency starts working in a cluster is called the *current cluster map*. The cluster map projected by the agency at the conclusion of the project is the called the future *cluster map*. The visual difference of these two cluster maps provides information about linkages that need to be developed, critical stakeholders who need to be created/implanted in the cluster, the links that need to be created thereafter, etc.

Cluster map is also a very useful tool to demonstrate to cluster stakeholders, related institutions and policy makers regarding the importance of “linkages” in cluster development.

6.4.2 Techniques for drawing a current cluster map

A cluster map can be made with six modules, and is centred around the principal firms to which all other modules are linked, as shown in Figure 6.1.

The *tools used* for drawing a cluster map are shown in Table 6.2.

Table 6.2: Tools for drawing a cluster map

A thin-bordered rectangular box for a *group* of stakeholders. The firms in a group are near similar and are not necessarily linked to each other	
A thick/dotted-bordered rectangular box for showing a well/poorly functioning *network* of inter-related stakeholders	
A thick/dotted one-sided arrow to show a well/underdeveloped linkage between two stakeholders (or network of stakeholders); the point of the arrow meets the stakeholder that receives goods /services from the other stakeholder	
A thick/dotted two-sided arrow to show a well/underdeveloped linkage between two stakeholders that have a subcontracting relationship	
Parenthesis to show the number of stakeholders in a group/network	( )

Figure 6.1 Cluster Map

<table>
<tr><td rowspan="3">Forward Market Linkages</td><td colspan="2">Support Institutions</td></tr>
<tr><td>Principal Production System</td><td>Sub-contracting System</td></tr>
<tr><td>BDS Providers</td><td>Raw material / Machinery supplier</td></tr>
</table>

The modules are filled and interconnected as follows:

1. Principal production system

- Group the principal firms by size - large/medium/small - or by market - manufacturers for domestic markets/exporters, etc. - in thin-bordered rectangular boxes. Give the group a name or an acronym and put the number of firms in each group in parentheses in each box.
- Present the network of firms in dark/dotted boxes. Give each network an acronym.
- Link the groups/networks of principal firms if there is a subcontracting relation between them.

2. Subcontracting system

- Present the groups of sub-contractors in thin-bordered rectangular boxes. Write their names/acronyms and number of firms in parentheses.
- Present the network of firms of sub-contractors in dark/dotted boxes. Write the name/acronym.
- Present the links (if any) of the groups/networks of sub-contractors among themselves.
- Link up the networks/ groups of subcontracting units with those of the networks/groups of principal firms.

3. Raw material/machinery supplier

- Present the groups of input providers in thin-bordered rectangular boxes and link them to the groups/networks of principal firms.
- Draw the groups' networks (if any) of the raw material/machinery supplier and link them with the groups/networks of principal firms.

4. Forward linkage: the marketing network

- Present the groups of market providers in thin-bordered rectangular boxes and link them with the groups/networks of principal firms
- Draw the groups' networks (if any) of the market providers and link them with the groups/networks of principal firms.

5. Private BDS providers

- Present the groups of private BDS providers or a single BDS provider in thin-bordered rectangular boxes and link them with the groups/networks of principal firms.

6. Institutions

- Present the various institutions in thin-bordered rectangular boxes and link them with the various groups of principal firms and their networks.

Information required to draw a current cluster map

- Principal firms by type (small/medium/large): Number, turnover, sources of raw material, major markets, marketing channels, etc., status of linkages with other stakeholders (production, distribution, marketing, technical, financial and support system), and networks of principal firms.
- Support firms: Number, and status of linkages within the network of support firms and their nature of linkages with group/networks of principal firms. This information is required for each category of support firm.
- BDS provider: Type, number and status of linkages with networks/groups of principal firms.
- Institutions: Names and status of linkage with (networks/groups of) principal firms.

Information required to draw a future cluster map

- Principal firms by type (small/medium/large): Projected changes in macro variables, new markets/marketing channels envisaged, new networks planned and change in status of linkages with any stakeholder and networks (of principal firms).

- Other stakeholders: New categories planned, their projected linkages among themselves (networking) and with principal firms; projected changes in number and status of existing stakeholders and linkages within their network/groups and with networks/groups of principal firms.

To draw the future cluster map, superimpose the expected new stakeholders on the current cluster map, link them with the existing stakeholders, present the new networks, link them with the existing networks and change the status of linkages both among the existing stakeholders and between groups/networks of stakeholders wherever required.

6.4.3 How to "measure" linkages

Some qualitative indications of the current status of linkages between group/network of principal firm with an individual/group/network of other stakeholders are presented in Table 7.3

Table 6.3 Status of links between stakeholders

Strong	Weak
1. Relationship between a group/network of principal firms and a group/network of support firm(s)	
• Support firms have developed a niche in a product/ service • Principal firms are fully dependent on support firms for this product/service • Principal firms depend on support firms for continuous innovation in this product/service to remain competitive • There is a continuous growth of support firms in the cluster	• Principal firms sub-contract/source a product from support firms to reduce cost • Major changes in that product/service come from outside the cluster • Support firms engage in price based competition to get subcontracting orders· Profitability of support firms is decreasing
2. Relationship between a group/network of principal firms and a group of BDS provider(s) or a single BDS provider	
• Principal firms are regular users of the services of the BDS providers· BDS providers have specialized· BDS providers are creating external service providers by creating and delivering new training programmes· BDS providers have grown in size and number	• BDS providers are rarely used • BDS providers do business with different types of firms • BDS providers are very secretive about their trade • BDS providers are not growing
3. Relationship between a group/network principal firms and marketing channels	
• Principal firms contribute substantially in product conceptualisation • The principal firms earn a premium return from the channel	• Principal firms simply carry out the processes as suggested by the channel • The channel does price based negotiation with the principal firm
4. Relationships within a network of principal firms	
• Regular interaction for business generation/ developmental issues· Interaction generates business for the network members • Has opened up new areas of cooperation that were not initially envisaged by the network · Existing networks are increasing in size	• Infrequent interaction of members • Discussions on fiscal or regulatory issues • No or unimportant business related services • Number of active members is decreasing
5. Relationship of an institution with group/network of principal firms	
• Has regular interaction with (networks of) principal firms • Works on business/developmental issues with (networks of) principal firms • Actively promotes policy-related issues and introduction of new services • Institution grows by working with principal firms and new institutions become involved	• Infrequent interaction • The institution rarely visits the firms • The institution does not have any idea regarding the cluster's policy related issues • The institution does not depend on the growth of the cluster

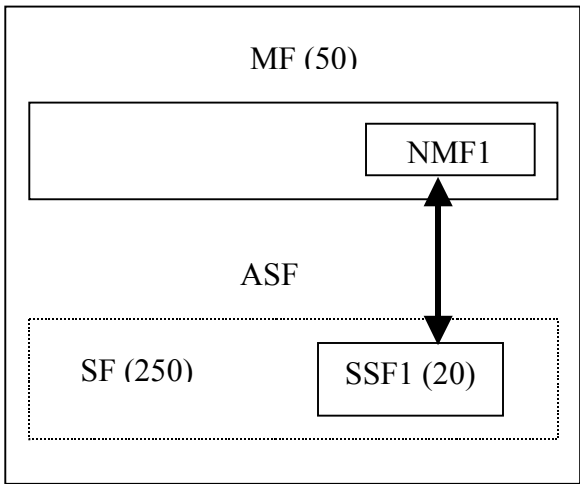
6.4.4 Creating a hypothetical cluster map

The data required to draw a current cluster map is normally to be found in the diagnostic study. In what follows we first provide the information required for each module. By interconnecting these independent modules we generate the current cluster map (Figure 6.8). By superimposing information on future developments for each module we get the future cluster map (Figure 6.9).

Module 1

Current map: There are 50 *medium* (MF) and 250 *small* principal *firms* (SF). There is a formal and active *network* of 8 *medium firms* (NMF1). NMF1 has a subcontracting relationship with 20 *specialized small firms* (SSF1), does common *raw material* (RM1) sourcing, jointly employs the services of a *BDS provider* (BDS1) and carries out joint R&D with a *technical institution* (TI1). They have a network manager. There is an *association of small farms* (ASF), but it is dormant. The 'principal production system' of the current cluster map is shown below in Fig. 6.2.

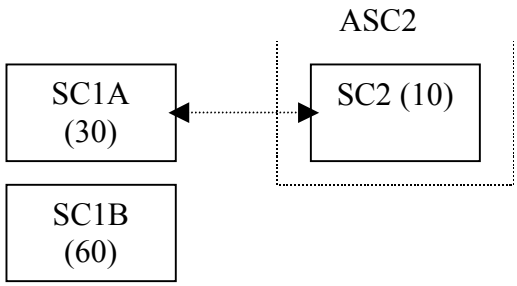
Figure 6.2: Principal Production System



Module 2

Current map: There are two principal *sub-contractors*, SC1A (30 firms) and SC1B (60 firms). These sub-contractors treat semi-processed goods provided by the principal firms. There is a *sub-contractor* SC2 (10 firms), which processes a *raw material* (RM3) for SC1A. SC1A uses it to process to the semi-finished goods received from the principal firms. SC2 has a dormant *association* (ASC2) that only fights against reducing import duty on processed RM3. The 'sub-contracting system of the current cluster map appears in Figure 6.3 below:

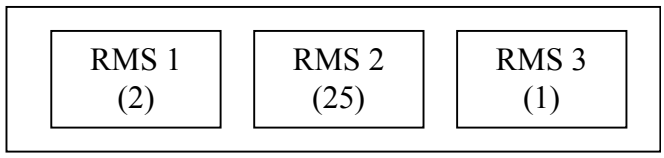
Figure 6.3: Sub-contracting System



Module 3

Current map: There are 3 types of *raw material suppliers*, RMS1 (two firms supplying *RM1*), RMS2 (25 firms supplying *RM2*) and RMS3 (one firm supplying *RM3*). RM1 is procured only by NMF, RM2 by all principal firms and RM3 by SC1A. The raw material/machinery supplier system of the current cluster map appears in figure 6.4 below:

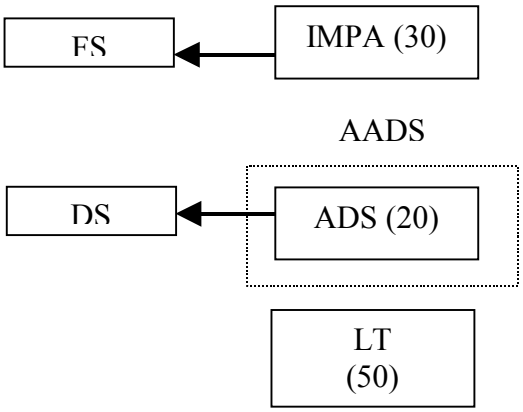
Figure 6.4: Raw material/Machinery supplier system



Module 4

Current map: NMF has access to *importing agents* IMPA (30 firms), which sell the goods to foreign departmental stores (FS) abroad. The MFs have direct linkage with *agents of department stores* (ADS) in the country, ADS (20 firms). The SSF1 have a linkage with ADS. ADS have an association (AADS) but it works only on fiscal issues. The small firms generally sell their goods to some 50 *traders* in the *local market* (LT). The *foreign stores* (FS) and *domestic stores* (DS) do not interact with the principal firms. The forward linkage section of the current cluster map appears in figure 6.5 below:

Figure 6.5: Forward Linkage



Module 5

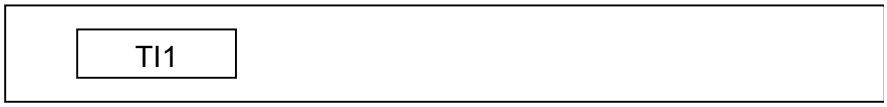
Current Map: There is only one BDS provider (BDS1) whose services are used by NMF1.

Figure 6.6: Private BDS Providers

Module 6

Current map: There are few technical institutions (TI1, TI2 and TI3) and one financial institution (FI1). TI1 does some R&D jointly for firms of NMF. The other institutions are not active.

Figure 6.7: Institutional Linkage



The figures 6.2 to 6.7 are then interconnected to create the current cluster map, that appears in figure 6.8.

CURRENT CLUSTER MAP

Based on the cluster aspirations and the desired needs as evident from the diagnostic study, the following issues were targeted for the future

• Two more networks of medium firms will come up. The number of specialized small firms will go up to 50 and there will be 4 networks of these firms. ASF will become active.

• All new networks of medium-size principal firms will have a strong relationship with SC1A and SC1A with SC2.

• All networks of SF and MF will have a strong relationship with AADS. The networks of MFs will create linkages with FS and DS and the networks of SFs will create a linkage with DS. AADS will become active.

• There will be 2 new types of BDS providers, BDS2 and BDS3. These will have linkages with the networks of small and large firms. The network managers in each network will promote joint service provision for each network. The number of BDS providers will also increase.

• The two remaining technical institutions and the financial institution will become active.

This information is then superimposed on the current cluster map to draw the future cluster map, which appears in figure 6.9 below.

FUTURE CLUSTER MAP

6.5 Special characteristics of a diagnostic study

A cluster diagnosis has an "open" character. Immediately after it is completed, it must validated through discussions with key stakeholders about the contents, the resulting vision and the suggested strategy, and these comments are incorporated. At a later stage, specific issues that have been identified as being important for the cluster, such as value chain analysis, marketing strategy, technology benchmarking, BDS profiling etc., may need in-depth studies. The need for these studies does not only emerge from the cluster vision and strategy: as the CDA develops a closer relationship with actors, it will become evident that are still certain gaps in her/ his understanding of the cluster which need to be investigated together with the stakeholders in question.

The study is obviously not an academic one. Its focus on critical issues is intended as a basis for a strategy and an implementable action plan. Hence the important role of the CDA. By being involved in the collection of data, opinions, etc., he or she gets a good feel for the cluster, which will help in developing a strategy for implementation (selection of leaders and implementers, etc.) and managing the cluster building project. Since the approach stresses the creation of linkages, the diagnosis covers all stakeholders who can bring new ideas and initiatives into the cluster, not just enterprises.

6.6 The diagnostic study and trust building

The diagnostic study provides the CDA (and the study team) with a major opportunity to build trust with the cluster stakeholders. As this is the first formal interaction, the response of the stakeholders to the CDA will be to provide non-controversial data. The CDA should therefore not question too intensively to obtain information – it should be willingly revealed by the stakeholder. The objective at this stage is to make the stakeholder feel comfortable and to understand area(s)of major concern. At this stage, the CDA may also try to suggest possible solutions and seek the response of the stakeholder to these. This will create confidence between the stakeholder and the CDA.

6.7 Validation of Diagnostic Study

On completion of the diagnostic study, a draft of targets and possible areas of activities are identified. These activities must be cluster specific and should be mapable to the SWOT analysis. The findings of the diagnostic study are then presented by the team to the stakeholders. Here opinions are taken and the study is further modified. The interaction meet can be organised by the team or by a group/network of principal firms. The team should try to give ownership of the study to the stakeholders.

6.8 Diagnostic Study is a first step

Diagnostic study is the first step in understanding the cluster. As the level of trust increase between the CDA and various cluster stakeholders, more 'correct' information flows in. As more and more real issues emerge and leaders and followers for those issues get identified, need for detailed studies emerge. The continuous interaction not only gives a better understanding of the value chain, which can now (say after 6 months) be undertaken but also pinpoints exact needs for various detailed studies e.g. Marketing/technology/benchmark/BDS profiling etc. Based on this continuous flow of information, updating the diagnostic study is almost a continuous activity.

TOOL 1 – INDICATIVE SME INTERVIEW FORMAT/VISIT REPORT

[If possible, start with a tour of the production/storage facilities of the enterprise, before proceeding with the discussions. The questionnaire may be further customised as per the need of the cluster conditions.]

[The notes in *italics* indicate what information should be obtained about other parties (enterprises, institutions) that have significant business relations with the SSI being interviewed. This will give the team an opportunity to interview these other parties later on during the field interviews.]

1. Basic Information

Date of Visit:	
Name of Enterprise:	
Name/Position of Respondent:	(E.g. owner, partner, owner's son, director)
Location:	(To identify the premises; exact address not necessary, although it may be recorded if easily available)
Main Product (s):	
Estimated Employment:	(Including owners)
Estimated Total Investment:	(Exclude land/buildings rented by the enterprise; but include stocks and working capital)
Form of Organisation:	(Sole proprietorship, partnership, family enterprise, limited company, etc.)
Date Established:	Approximate: e.g. 1990 not 20 June 1990
Recent Development:	(For example, employment 3 years ago versus now; or major diversification into new products or markets)

2. Other Businesses

• What (if any) other businesses are owned or significantly partly owned by the owner(s) of the enterprise, whether in manufacturing or other sectors?

3. Markets and Marketing

• Where are the enterprise's main products sold: locally, elsewhere in the country, export markets? (Obtain volume and/or value percentages if possible, by main product or product-line)

• (If the enterprise is a relatively old one in terms of the cluster's history). How do its main products and markets differ significantly from those of its early days, or of local SMEs in the same general line of business, which were well established at that time?

• What are the main marketing channels used (directly to the public or to other enterprises: manufacturers, particularly other SMEs or large manufacturers in the cluster, agents, intermediary traders, exporters, etc.)? If to other enterprises, are they local, or do they have a local subsidiary? Is the pattern of marketing channels changing significantly, and if so how?

• What, apart from orders, do these channels consciously or involuntarily provide (general market intelligence, designs, market requirements, technical assistance, training, credit in money or materials, etc.)? Is the pattern of such provision changing, and if so how?

[Names/addresses of significant parties should be noted for possible subsequent interview.]

• Who are the enterprise's main competitors: other SMEs in the cluster, other enterprises within the country, importers (distinguish by main product/ market if necessary)?

• What is the main product features used to attract customers (quality, constant upgrading or modification to customers' needs, assured/rapid delivery, advertising, price, etc.)? Is the emphasis shifting between these features, and if so how?

• What (if any) other aids to marketing and market intelligence has the enterprise found to be of significant use (joint marketing arrangements with other SMEs including order-sharing, process specialisation, sub-contracting programmes or schemes, use of private consultants, export promotion agencies, export credit)? How important are these aids? Are they becoming more important? *[Names/addresses of significant parties should be noted for possible subsequent interview.]*

• What are the enterprise's main problems in marketing (selection/design/quality/prices of its products, transport costs, lack of export credit, deficient market intelligence/information, etc.)?

• Has the enterprise obtained effective help or advice in solving these problems, which is not already covered by answers to the above? If so, from whom (enterprises and/or institutions)? What was the nature of this help? How important was it? Is it still needed?
[Names/addresses of significant parties should be noted for possible subsequent interview.]

• Does the enterprise have reasonably firm and fundable plans for further upgrading or diversification of its markets, market access, and marketing channels and methods within the next two or three years? What is the essence of these plans? What sources of support (in the sense used above, including cooperation with other enterprises) does it envisage will be most useful? What, aside from funding limitations, will be the most important obstacles?

4. Premises

• Are the premises on an industrial estate or other real estate specifically designed for industrial use? If yes, who is the developer (small industry agency, local authority, SSI association, private party, etc.)? Are the buildings pre-built by the developer, or is only serviced land provided? Are any parallel services provided (telecommunications, electricity) by the developer?

• Are the premises rented or owned? If rented, from a public or a private landlord?

• Are the premises 'formal' or 'informal' (ramshackle, temporary, etc.)?

5. Production, Technology, Training, Labour

• What is the source of most machines? What is their approximate average age?

• Whose advice did the enterprise take in selecting them?

• What are the principal sources of parts, servicing and repairs (including self-servicing by the enterprise itself)? Are these sources within or close to the cluster? Are they general mechanics/dealers, or specialists in these types of equipment?

• What are the main problems (if any) with the production equipment or with the processes of production?

• Has the enterprise maintained, right up to the present, a record of upgrading/diversifying its products and/or processes? What are the major (or typical) examples of this?

• In those examples where which parties did it receive support (ideas/impetus/know-how/ assistance/cooperation): its own skilled employees, suppliers, other SMEs, large manufacturers sub-contracting work, other external buyers such as export-agents and large traders, export promotion agencies, local R&D or technical institutes, etc? What was the nature of this support (designs, materials, advice on equipment and processes, training, etc.)? Was it mostly incidental, or deliberately conceived? How, if at all, was it paid for by the enterprise? Are there any trends in the pattern of

upgrading and its support - is it becoming more continuous and deliberate?

[If other enterprises or institutions, including consortia of same, and enterprise associations, have played a significant role, their names and (if necessary) addresses should be noted, so that they may be interviewed for their side of the story.]

• Does the enterprise specialize (in whole or part) in one or two stages of a production process? Does it rely for supplies on other SMEs? How did the specialization develop? Is it becoming more intense and important?
[N.B. Where specialization is significant, the names and addresses of customers or specialist suppliers (including common service facilities) should be noted, so that they may be interviewed for their side of the story.]

• Where did the owners and employees receive their basic *useful* training (on the job/in former jobs/from public or private training or educational establishments)?

• Has the enterprise maintained, right up to the present, a record of upgrading the skills of its workforce, whether owners or employees? What are the major or typical examples of this?

• From which parties did it receive support in upgrading skills?
[Repeat, with appropriate adjustments, the line of questioning above about product/process upgrading, including the noting of names and addresses of significant enterprises/institutions for possible subsequent interview.]

• Are there significant problems with the skills and training of the enterprise's workforce?

• Are any other significant learning/technology upgrading mechanisms used by the enterprise (e.g. use of private consultants or engineers, consultative meetings or learning groups of SSI owners, trade publications, public or common testing or design facilities?)? If so, what are their main uses, and how important are they to the enterprise? How did they originate, and how are they currently organised?
[Again, names/addresses of significant parties should be noted for possible subsequent interview.]

• Does the enterprise have reasonably firm and fundable plans for further upgrading or diversification of products, processes, equipment, or skills within the next two or three years? What is their essence? What sources of support (including cooperation with other enterprises) does it envisage will be most useful? What, aside from funding limitations, will be the most important obstacles?

6. Raw Materials and Intermediate Goods

• What are the principal customary sources for the main raw materials and intermediate goods used by the enterprise? Are many of these sources within or close to the cluster?

• If they are traders, are they general dealers or specialists in these materials who can and do offer useful advice on their choice and use?

• If they are manufacturers (large or small), do they similarly provide useful advice and/or technical assistance on the choice and use of their products? What is the nature of this technical support? Is it increasing in quality and importance?
[Names/addresses of significant parties - in this instance, suppliers - should be noted for possible subsequent interview.]

• Does the enterprise have any substantial problems with its supplies of raw materials or intermediate goods? If yes, what are they?

• Has the enterprise obtained effective help or advice in solving these problems, which is not already covered by the responses to the lines of enquiry above? From whom (enterprises or institutions)? What was the nature of this help? How important was it? Is it still needed?
[Names/ addresses of significant parties should be noted for possible subsequent interview.]

7. Finance

• How was the enterprise funded (owners' savings, profits of the owners' other enterprises, family members, enterprise inherited from father or mother, etc.)?

• Apart from short-term trade credit from suppliers or customers, has the enterprise received other external credit?

• If so, when? From whom (bank or finance company, equipment supplier, joint venture partner, savings club, etc.)? Overdraft facility or term loan? Interest rate? Size of loan or credit-limit? Date of most recent credit? Did the enterprise use services of any party, institutional or private, in securing external credit?
[Names/addresses of significant parties, including credit sources themselves, should be noted for possible subsequent interview.]

• Is the enterprise generating a surplus over costs, including a living income for the owners and their immediate dependants? In real (inflation-adjusted) terms is this profit increasing or decreasing? Why?

• Where do the owners (intend to) invest the bulk of the surpluses? In expanding this enterprise? If so, in what manner? In other enterprises? If so, in which sectors? In other types of investments (land, houses and other buildings, financial instruments, etc.)? What is the reason for this investment pattern (in the enterprise/in other investments)?

• What (if any) are the enterprise's main problems with sources and terms of either equity or credit finance?

8. Infrastructure, Policies, Regulations, etc.

• What are the principal customary sources for the main infrastructural facilities and services used by the enterprise (electricity, telecommunications, water, gas, transport facilities, waste disposal and effluent treatment, etc.)?

• Whether or not these primary sources are publicly owned or regulated utilities, has the enterprise supplemented them in any significant way by itself, through cooperation with other SMEs, or through the services of specialist private initiatives (e.g. building/ improving access roads, electricity from private stand-alone generators, common waste disposal services, common fax or other communications facilities)? How was this financed and organized? How long have they been operating?
[Names/addresses of significant parties - in this instance, service-suppliers - should be noted for possible subsequent interview.]

• Does the enterprise still have any substantial infrastructural problems? If yes, describe the most serious problems.

Does the enterprise have any substantial problems with laws and regulations (licenses, tax law and administration, contract/sale/damages law, land titles and access, zoning and building development regulations, import policies and tariffs, safety and labour regulations, work permits for non-nationals, laws on acceptable loan-collateral, etc.)? If yes, describe the most serious problems.

• Where has the enterprise obtained effective help or advice (if any) in solving these problems (e.g. consultation and advice from private consultants/ professionals or local officials, representations by SSI associations or other institutions)?
[Names/addresses of significant parties - in this instance, sources of advice/help - should be noted for possible subsequent interview.]

9. Associations

• Is the enterprise a member of business associations? Which (e.g. Chamber of Commerce and Industry, Garment Exporters' Association, small metal workers' association, local block or precinct trade association, etc.)? Since when?

What effective help or services has the enterprise received, and in what fields *(under any or all of the above headings*), from any of these associations, whether acting independently or in cooperation with other institutions? How are these services financed and organized (e.g. are they made available to SMEs individually, or in groups)? Was this help of decisive importance? Is it becoming more important? Should and/or could it be further improved? How?
[Names/addresses of significant parties - in this instance, associations and any institutional partners cooperating with them - should be noted for possible subsequent interview.]

10. Recapitulation/Summary of Main Problems and Strategy of the Enterprise

• Recapitulate - very briefly, in a single short phrase per problem - the *three* main problems of the cluster (if it has any main problems), as seen by the interviewer while discussing with the firm

• These problems may be among those noted by the enterprise itself, or by the interviewer but not by the enterprise (e.g. poor management, disputes between the owners, no skilled floor supervisors, etc.)

• Summarize, in *two to three* lines, the enterprise's core competitive *strategy* and strengths, and its most valuable interactions with other parties in the cluster (e.g. technical excellence and upgrading, market diversification, specialisation, low costs/prices, using other enterprises for specialised job-work, producing for distant markets via large buyers, etc.).

TOOL 2 - RELATED SME UNITS/ LARGE MANUFACTURER INTERVIEW FORMAT/VISIT REPORT

[If possible, start with a tour of the production/storage facilities of the enterprise, before proceeding with the discussions. The questionnaire may be further customised as per the need of the cluster conditions.]

[The notes in *italics* indicate what information should be obtained about other parties (enterprises, institutions) that have significant business relations with the SSI being interviewed. This will give the team an opportunity to interview these other parties later on in the field interviews.]

1. Basic Information

Date of visit:	
Name of Manufacturer:	
Name/Position of Respondent:	(e.g. General Manager, Purchasing Manager, etc)
Location:	(To identify the premises; exact address/telephone number not obligatory, though it will usually be readily available and should be recorded if available)
Main Product (s):	
Main Markets	
Estimated Value of Total Sales:	
Estimated Employment:	
Approximate Total Investment:	(Exclude land/buildings not owned by the enterprise; but include stocks, and working capital generally)
Team's Impression of Enterprise's Technology	(High, Enterprise's Technology medium, basic)
Form of Organization:	(Family enterprise, limited company, public enterprise)
Date Established:	(Approximate: e.g. 1986 not 19 August 1986)
Recent Development:	(For example: employment or investment 3 years ago, versus now; or major diversification into new products or markets).
Other Businesses Owned or Part-Owned	(In manufacturing, or other sectors; specify sub-sectors as far as possible)

2. Business Relations with SMEs in the Cluster

[It may be appropriate to start discussion with reference to comments by SMEs on their relations with the enterprise; enquire how the enterprise itself sees these relations; and let the discussion flow from that point. This will be a useful tactic, and will also provide the advantage of specifically cross-checking the SMEs' remarks. However, the primary purpose of the interview is to discuss the topics below, insofar as they are relevant to this particular large manufacturer.]

What is the basic business orientation of the enterprise vis-à-vis the SMEs in the cluster (customer, supplier, technical partner)?
If supplier
• What are the main items supplied to the SMEs?
• Is this business expanding/diversifying?
• How did it start, and how long has it been going on? What is its total sales value now?
• Along with the core items supplied, what else is supplied (service, parts, advice, training, technical assistance, credit, etc.?)? Are these "supplements" paid separately by the SMEs?
• What, if anything, have the SMEs learnt - whether directly from the enterprise, or subsequently by diffusion among themselves - from this business relation: has it helped them expand, diversify, upgrade, increase their productivity, etc.?

If customer/technical partner
• What are the main items and/or services sourced from the SMEs?
• What is the main motivation for such sourcing (low costs, local supply, convenience, save on enterprise's own investment, high quality, special SSI capabilities, etc.)?
• How did it start, and how long has it been going on?
• What is the annual total value of purchases now?
• How is the business relation organized (enterprise-enterprise business, with small groups of SMEs, via SSI association or sub-contracting exchange)?
• How many SMEs in total are significantly involved?
• Along with the orders placed by the enterprise, what else, if anything is provided (designs, advice, training, equipment, technical assistance, materials, credit, etc.?)? Are any of these "supplements" (partly) paid the SMEs?
• What are the main problems experienced with sourcing from the SMEs, and how have they been/ are they being solved?

In either case (i.e. supplier or customer/technical partner)
• Has there been any significant involvement of, or impact from, other parties in the development and conduct of the business relation, which is not covered by the responses to the above (government via taxation, local content, etc., policies; intermediary enterprises or agents, training or technical institutes, banks, local authorities, training levy boards, etc.)?
• What has been the nature of the involvement(s) or impact(s) has it been positive or negative, and is it becoming stronger of weaker?
• What can be done to intensify support or minimize hindrance? If better support implies deployment of more resources, where would these come from?
[Names/addresses of significant parties should be noted for possible subsequent interview.]

Does the enterprise have reasonably firm plans for further expansion/upgrading/diversification of its business relations with the SMEs in the cluster or network within the next two or three years? What is their essence?

• Do these plans involve cooperation with third parties; and if so, which and how?

3. Recapitulation/Summary of Main Relations with SMEs and Strategy of the Enterprise

• Recapitulate - very briefly - *up to three* main types of relation of the enterprise with SMEs in the cluster or network (WHY ALL AT ONCE NETWORK???), together with the enterprise's core motive for maintaining (each of) these relations, as seen by the interviewer.

• Summarize, in *two to three* lines, the enterprise's core competitive strategy, including relations with other parties (e.g. technical excellence and upgrading, market diversification, specialisation on core functions, low costs/prices, cooperation with other enterprises, etc.)

TOOL 3 - SME ASSOCIATION INTERVIEW FORMAT/VISIT REPORT

1. Basic Information

Date of visit:	
Name of Association:	
Name/Position of Respondent: Location:	(e.g. President, Gen. Manager, Exec. Director, etc.) (To identify the premises; exact address/telephone number not obligatory, although it may be recorded if easily available)
Sectoral and Geographical Coverage	E.g. metal working SMEs in ___ City; National Small Garment Exporters Association)
Estimated No of SSI Members:	
Estimated No. of Other Members:	
Estimated No. of Paid Staff:	(Full time, part time)
Estimated No. of Unpaid but Active Officials	(Exclude simple Board Members, Sub-committee Members, etc. if their activities do not extend beyond periodic attendance of meetings)
Approximate Annual Revenues:	(From all sources: specify main ones if possible)
Approximate Total Assets:	(Land, buildings, equipment, vehicles, working funds)
Form of Organisation:	(Chartered, charitable, informal, etc)
Date Established:	(Approximate: e.g. 1988 not 2 April 1988)
Recent Development:	(E.g. membership 3 years ago, versus now)

2. Business Relations with and Services to SMEs in the Cluster

[It may be appropriate to initiate discussion with reference to comments by SMEs on their relations with the association, services provided by it, etc.; enquire how the Association itself sees these relations and services; and let the discussion flow from that point. This will be a useful tactic, and will also provide the advantage of specifically cross-checking the SMEs' remarks. However, the primary purpose of the interview is to discuss the topics below, insofar as they are relevant to this association.]

What are the main services the association provides to the SMEs in the cluster?

Production, Technology, and Training
• Common service facilities (specialist production; testing)
• Information and/or training on new technologies/ processes
• Providing consultancy or R&D facilities
• Technical skills upgrading
• Business and management training

Markets and Marketing
• Arranging contacts with large manufacturers/buyers
• Securing and allocating orders from these
• Providing new designs or information on design sources
• Providing market information, e.g. export requirements, subcontracting exchanges

Infrastructure
• Negotiating for land access, industrial estate sites, etc.
• Providing or arranging for premises or serviced land
• Providing or arranging other common services (waste disposal, telecommunications, electricity, etc.)

Finance
• Promoting and/or managing savings and loans programmes
• Helping with credit applications to banks, etc.
• Providing credit guarantees

Other
• Bulk purchasing
• Business consultancy, help with business plans, etc.
• Meetings with national and local governments on policy issues (taxation, protection under contracts, zoning, electricity supply, tariffs, etc.)

Concentrating on the main effective services, as perceived by the SSI informants themselves and/or the interviewer, for each such service:
• How did it start and develop, and how long has it been going on?
• How many (a) SSI members (b) other SMEs in the cluster use it regularly?
• How do they pay for it (if they do)? Does it, overall, pay for itself?
• In providing services, does the association work with other actors (e.g. large enterprises, training or technical institutes, government)? And if so, how (technically, financially, etc.)?
• What are the main problems, if any, associated with the service (technical, financial, logistical, organizational)?
• Do the customers have suggestions for upgrading or expanding the service? If so, which? Are they realistic?
• Have any private enterprises started providing similar services, prompted by the association's example?
[Names/addresses of significant other parties should be noted for possible subsequent interview.]

• Does the association have literature (brochures, periodic or special reports, videos, etc.) providing further information on any of these main services, or on their extent and impact?
[If so, take or borrow copies to provide further input to the cluster diagnosis]

• Does the association have reasonably firm and fundable plans for further expansion/upgrading/ diversification of its services to the SMEs in the cluster or network within the next two or three years? What is their essence?
• Do these plans involve cooperation with third parties; if so, which and how?

3. Recapitulation/Summary of the Main SSI Services and Strategy of the Association
• Recapitulate very briefly the 3 main types of services provided to SMEs in the cluster, together with the association's basic strategy for those activities and any main problem in providing them, as seen by the interviewer.

Chapter 7
Action Plan

7.1 What is an action plan?

The vision statement (which emanates out of the diagnostic study) helps to identify the strategic objectives that need to be realized to upgrade an underachiever cluster. These strategic objectives in turn suggest a range of activities (based on the strategy adopted) that are required to achieve each of those objectives. However not all of theses activites are immediately (at a point of time) implementable. Not all require joint efforts too. The set of implementable joint activites (for a strategic objective) at any point of time depends on the level of trust that exists among all relevant stakeholders and also the level of maturity of each stakeholder for each activity. Thus each long run objective gives birth to a short run objectve (at a point of time), that consists of a few implementable joint activities. These short run objectives along with the respective implementable joint actvities (along with other necessary detailings) forms the action plan of a cluster.

Assume for a cluster, an objective is 'to create new market linkages'. There can be variuos activities to achieve this objective., e.g. participation in international fair, training in marketing, understanding the need for proper marketing startegy through visits of successful marketing outlets, joint participation in local fair, joint participation in national fair, joint participation in international fair, creation of new products, location of new channels of marketing, creation of a common brand, etc. In a highly developed cluster with high trust level (due to already prevailing joint activities) one can start with joint design development and also target activities like joint participation in international fair, promotion of common brand, etc. However in an artisanal cluster with very low level of trust one needs to target activities like understanding the need for proper marketing startegy through visits of successful marketing outlets, training in marketing, joint participation in local fair, etc. and then go for an activity like joint design development. In no case an activity like finding a marketing person for a firm (which is a commercial activity) can be an activity of the cluster action plan.

Thus, the *action plan* is based on (a) the strategic objectives to be realized to achieve the agreed vision and (b) the existing linkages in a cluster, which give an indication of the trust levels.

It must be stressed that each joint activity in an action plan serves *at least* a dual purpose. The more overt one is the realization of the immediate objective

spelled out for that activity in the action plan (for example joint participation of exporters in Hemtextil Fair or providing a demonstration of the benefits of a new machine, etc.). The non-stated but equally important purpose of a joint activity is the creation of functional trust through the interaction that takes place among stakeholders during each pahse of that activity . The linkages that gets generated in the process add to the social capital of the cluster and enhances it capacity to implement more such joint activities in the future.

7.2 Duration of an action plan

During the process of cluster development, there will be other developments inside and outside the cluster, and some of the objectives identified in the initial diagnostic study may be rescheduled or discarded as unfeasible. For this reason, it is unrealistic to expect a useful action plan to span the entire duration of implementation (three to four years). Experience indicates that an action plan should cover the activities that are expected to take place in one year. Hence, during the lifetime of the cluster development project, several action plans may be needed.

7.3 Who prepares the action plan?

In a fully performing (overachiever) cluster, the cluster stakeholders can be expected to have developed capabilities for preparing an action plan. A CDA may still help to facilitate the process of implementation, though the cluster stakeholders would retain leadership. Individual networks or groups in a cluster can also have their own action plan. Some of these may be at too early a stage to be shared with the cluster as a whole. In an ideal situation the cluster action plan should include all the developmental activities of these networks.

But in an underachiever cluster, the stakeholders usually do not have the governance structures allowing them to jointly prepare an action plan. In such an environment, the CDA should initially take the lead in preparing a draft action plan on the basis of dialogue with the stakeholdsers and seek their endorsement of the concerned stakeholders before finalizing it. Since the process of cluster development is usually triggered by an external support agency, the CDA should also ensure the submission of the plan to such an agency (to which it generally belongs), especially if the financial support of the latter is needed. It is imperative that the CDA then (a) generally builds up the capacity of intermediary stakeholders to identify shared objectives and draw up their own action plans, and (b) ensures that selected stakeholders are capable of preparing an action plan for the cluster after the CDA has left.

7.4 The action plan document

A comprehensive *action plan document* consists of the following sections:

1) *Cluster status prior to intervention*: This section provides a brief description of the product range, turnover and size distribution of principal firms and institutional set-up of the cluster prior to intervention. The product range, turnover and size distribution guides the spread of an action plan, such that it covers various categories of firms present in the cluster. The institutional set-up serves as a baseline data for (a) planning the introduction of new linkages and (b) assessing the social capital generated in a cluster. (This section should take about half a page.)

2) *Vision*: This section presents the vision of the cluster. It is a constant guide for the CDA and the stakeholders regarding the overall long-term objective of all activities in the action plan. (This section should take at most a few lines.)

3) *Major outcomes:* This section presents a summary of major outcomes achieved in the previous years of project implementation. Past achievements show how the project is making a difference and identified obstacles can be rectified in the current action plan. This section is also very useful for roping in other support institutions, as past outcomes are often a better indicator of future outcomes than any list of proposed activities, no matter how detailed. (This section should take one to two pages)

4) *Description of past activities:* This section contains a table of past activities with respect to output, coordinating institution, stakeholders involved and linkages developed in the process. This table throws light on the maturity level of an implementing organisation (network, BDS provider, or support institution), the likely partnerships that can be created among stakeholders for present or future activities and the effectiveness of past activities in terms of their expected outcomes. This section provides vital

clues with respect to the right choice of activity, implementing institution, and stakeholder composition for the current year. (This section should take one to two pages.)

5) *Overall cluster development strategy and objectives for the current year:* A review of strategies adopted so far to achieve the broad objectives and the direction in which they have pushed the cluster helps in identifying the broad short-run objective(s) to be pursued in the year. An example is provided in Box 7.1

6) *Details of short-term objectives*: The realization of each short-term objective requires activities are detailed with respect to the resources required, sources of finance, implementation period, expected outcomes, responsibilities and time requirements of CDA and non-CDA implementers. (Each short-term objective should take about a page.)

The action plan document allows systematic progress in the realization of the vision by:

- Reconfirming that vision;
- Evaluating the current mix of short-term objectives in terms of their joint conduciveness to the realization of the cluster vision;
- Identifying the current action plan:

7.1 Cluster development framework – identified short run objectives

(Jaipur handblock printed textiles cluster)

Skills upgradation

- technical training of trainers
- training in basic drawing and designing skills of artisans
- training of second line managers in information technology
- training in product diversification

Strengthening of linkages

- participation in international trade fairs
- organization of exhibition cum sales at national level
- showroom renovation and operation
- creation of directory of designers
- documentation and preservation of traditional art forms

Innovative product development

- specialised skills uprgrading programme of the rural artisans
- specialized buyer-seller meetings to test results of skills upgradation
- joint participation in trade fair/buyer-seller meet in europe

Institutional capacity building

- creation of specialised consortia
- regular meetings of local associations

- Short-term objectives that can be pursued, given the degree of social capital in the cluster
- Activities that can lead to the achievement of these short-term objectives
- The combination of stakeholder inputs, competences and resources required

7.5 Characteristics of an action plan

A good action plan has the following characteristics:

- *Transparency*: The action plan is not a secret document; it should be shared with all stakeholders. Stakeholder feedback is important for developing an implementable action plan. The sharing can take place through cluster-level workshops or informally during group-based activities. However, since the CDA should support an actitivtiy the minimum to make the process sustrainable, it is advisable not to declare support a priori for an acitivity.

- *Realistic:* The action plan should be as *realistic* as possible. An ambitious action plan increases the chance of failures, which will reflect poorly on the CDA and will send a negative message to the cluster.

- *Focussed :* While preparing an action plan the CDA may often come under pressure to include activities which might not fit in the framework of the cluster programme. The CDA should avoid taking such actions on board.

- *Demand led as well as supply induced :* While majority of activities should be *demand-led*, but to stimulate action by the cluster in some new areas, the CDA may need to include in the action plan some activities for which demand may be low because cluster members overlook opportunities or undermines threat for such activities. The latter activities should ideally be introduced in the form of informative or knowledge enhancing mode, since at an early stage stakeholders are unlikely to invest resources in those activities. Participation may be limited to a few stakeholders.

- *Unwanted but needed:* Often, a major category of issues where the CDA may have to take the initiative is related to *environmental and social needs*. Due to short-sightedness and entrenched routines, stakeholders may miss out on critical issues such as environmental pollution, minimum wages or child labour, and may actively resist actions to address them. Even if a legal ban looms, stakeholders have been found to resist pollution control or minimum wage initatives, at least up to the point that the threat becomes imminent and manifest. Stakeholders only see the added burdens. The action plan should therefore also include awareness-building activities for joint activities on these issues. During the initial trust-building phase, activities can be limited to information on pollution control, a visit to a cluster where pollution control measures have been taken, etc. As trust levels increase, the business perspective can be introduced: e.g. stakeholders can be made aware that adherence to environmental and child labour norms can open up new markets.

- *Balanced :* The action plan should accommodate (by size distribution) all categories of principal firms in the cluster. Unhealthy competition may otherwise arise among firms and lead to an obstacle in trust building.

- *Intermediary as implementer* : Barring some preliminary activities, which can be implemented by a CDA, all activity should be implemented by an intermediary organization like a network, institution, BDS provider or a specialized firm. The CDA should *at best* facilitate the implementation of the activity.

- *Achievement of multiple objectives*: Where possible, activities should be so designed that they help achieve multiple objectives. Encouraging participation of manufacturers from a cluster to attend a trade fair, for example, can have different purposes: it may demonstrate the scope for reducing marketing costs through common participation; it may help eliminate non-value adding middlemen by creating direct business contacts, and it may also serve as a trust building exercise.

- *Spin-off activities*: The formation of small networks of SMEs to purchase raw material together to save costs may lead to spin-offs. One benefit could be a greater awareness of better purchase

management and opportunities to increase efficiency.

- *Balance between short- and long-term activities:* In the early phase of any cluster-development initiative, the bulk of activities should be result-oriented and of a short-term nature. It is important that cluster stakeholders see immediate results. These serve as encouragement for more complex activities which follow. In very weakly developed clusters, the focus should be on one or a few simple activities. For clusters with higher levels of trust, the action plan may include complex activities from the very start. Long-term activities cannot generally be realised in the span of a single action plan and therefore need to be broken down into a chain of realisable short-term activities in each action plan.

- *Flexibility:* At the time of implementation the CDA may see the need to change the composition of stakeholders or the resource contribution; also, the cluster may not be ready for certain activities. Therefore, the plan should be flexible. Flexibility also means having the ability to launch a new activity not mentioned in the action plan. Even after meticulous planning a sizable fraction of planned activities may be finally implemented and unplanned activities may need to be taken up. This happens because of (a) inadequate information and (b) unexpected spin-offs from a current activity (new activities emerging out of a successful implemented activity have a good chance of succeeding as the confidence of the cluster actors is obviously high).

- *Joint activities only*: An action plan should above all *consist of joint activities:* only whenever at least three stakeholders should either be involved in its implementation (e.g. as a source of expertise, funding or demand) and/or receive relevant benefits therefrom. An activity that benefits an individual stakeholder both in the short and long run should *not* be included in an action plan. However, a few supply-driven activities based on the intuition of the CDA may also find a place in the action plan, even if initially there are no interested stakeholders, for a very limited amount of time (at best one year).

7.6 Types of joint activity

The types of joint activities include:

- *Trust building activities*: These are activities without any other stated objective and they are extremely frequent in the early stages of the project, to eliminate conflicts among stakeholders which prevent joint activity. As time progresses, the number of pure trust-building activities should in principle diminish. Trust building activities can include visits to firms, lectures, workshops, social gatherings, etc.

- *Pilot activities*: The purpose of these is to test the cooperativeness of stakeholders through a limited activity. This may include demonstration of a new technology; recruitment of an expert, training, etc.

- *Capacity building*: The cluster stakeholders must be enabled to implement activities with a minimum of external support, or without it. Capacity building includes formation and/or strengthening of networks, associations or institutions; assisting/ training of network development agents or network brokers; exposure visits; etc.

- *Regular activitive :* These activities, include those ones which may have started as pilot activities and later proved to be sustainable. These activities can include participation in trade fairs, quality and skills upgrading, training, consultancy, sourcing international expertise, etc.

- *Strategic initiatives*: These are medium/long run activities such as brand building; creation of laboratories; establishment of product testing., information, design and R&D centres; technology development; relocation to better areas; policy changes, etc.

- *Monitoring and review*: These constantly guide the cluster to an optimum growth path by incorporating lessons learnt in action plans. They include cluster-level review workshops, assessments by knowledgeable experts and evaluation programmes.

7.7 From short-term objectives to activities

The short-term objectives targeted in an action plan are broken down into a list of activities, and each activity is further broken down into implementation time frame, stakeholders and their contributions, expected output, etc. - as shown in Box 9.1.

Box 2: Enhancing marketing linkages and reach of Hand Block Printed Textile (HBPT) cluster of Jaipur (north India)
(based on a UNIDO project)

Necessity: The textile printers in Bagru, India, need better marketing. Efforts have already been made to provide exposure to national and international markets but the scope of these marketing efforts needs to be widened, the products must be advertised better and regular production of unconventional high-demand products must be undertaken.

Expected outcome:Creation of a retail outlet, product diversification, enhanced capacity utilisation, product promotion and better know-how of current international trade practice.

Beneficiary: Printers and exporters.

Executing responsibility: Calico Printers Cooperative Society (Calico), Consortium of Textile Exporters (COTEX), Self Help Groups (SHGs) of Bagru, Non-Government Organisations (NGOs) and business development service (BDS) providers in design.

Proposed Financial aspects (value in US$)

	Activities	Time period	Total	Agency	Networks	Support institutions
1.1	Exclusive retail outlet	Q2-Q3	8,700	500	7,200	1,000(SIDBI/RCCI)
1.2	Exclusive fairs in major cities	Q1-Q4	12,000	1,700	6,300	4,000 DC(H)
1.3	Promotion of website	Q2-Q3	1,700	300	700	700 (SIDBI)
1.4	Participation in international fairs	Q1, Q4	11,000	2,300	7,000	1,700 (RCCI/SIDBI)
	Total	**Q1-Q4**	33,400	4,800	21,200	7,400

Key: Q = quarter, DC(H): Development Commissioner (Handicrafts) – a developmental agency of the Government of India, SIDBI: Small Industries Development Bank of India – a developmental bank, RCCI: Rajasthan Chamber of Commerce and Industry – the State (of Rajasthan, north India) level apex chamber of commerce

Agency's functional responsibility: To guide the cluster actors in preparing a detailed action plan for each activity, provide linkages with support institutions and monitor overall progress.

Person days: 50(agency) +265 (non-agency)

Each activity in the framework needs to be detailed further. An example for activity no.1.1 in Box 7.2 is given in Box 7.3.

Box 3: Establishing exclusive retail outlet

Necessity: Renovating(Phase I) the Calico Showrom will give the printer of Sanganer (a township near Jaipur, which is a part of the Jaipur HBPT cluster) a permanent marketing outlet.

Expected outcome : Joint effort for cooperative activites, permanent sales outlet for weaker printers base for common initiatives.

Target beneficiary: All printers of Sanganer.

Executing responsibility: Calico printer Cooperative Soceity Ltd. (Calico)

Venue : Sanganer, Jaipur.

Proposed Financial aspects (value in US $)

Item	Total	Responsibility
Renovation (phase 1) of showroom	700	Agency: 500, Calico: 200
Adverts, running costs, showroom stock	8,000	Agency: 500, SIDBI/RCCI (support institution): 500, Calico: 7,000
Total	**8,700**	

Person-days: 10 (agency) + 15 (non-agency)
Implementing Agency's functional responsibility: organize Calico, provide inputs and linkages with support institutions
Calico: coordinate with its members, draw up an action plan, define the regulations, organise funds and renovate the showroom.

Recapitulation

- The need for an action plan is to help plan resources contribution from various actors, fix responsibilities for implementation, prepare a timeframe for implementation and monitor progress.
- An action plan should be flexible, transparent and represent the beliefs of cluster actors. Firmness of an action plan improves over time.
- The activities in an action plan include trust-building activities amongst actors in a cluster, the launch of pilot activities and organisation of regular activities for the benefit of the actors. It may also involve strategic and capacity building initiatives amont others.
- An action plan need have inbuilt flexibility for change. It may have the following content structure :
  1) Nature of activity
  2) Target beneficiary actor or group
  3) Sequencing of implementation
  4) Fixation of responsibility for implementation
  5) Finalisation of resources needed for implementation
  6) Specification of contributions
  7) Specification of temporal specifics.
- A CDA should act as a catalyst in the process of evolution of an action plan.

Chapter 8
Implementation

8.1 Introduction

Implementation refers to the *range of activities* that lead to the realisation of the long-term objectives enshrined in the "vision statement" of a cluster. For the CDA, implementation includes not only the organization (directly or indirectly through local intermediaries) of each activity in the annual action plan. Implementation is first and foremost an opportunity to enhance the social capital of a cluster, leading to the establishment of an efficient and lasting governance mechanism, thereby empowering the cluster stakeholders to draw up their plans for "targeted joint action" without the CDA. The steps required to attain this objective include:

1) Implementation of annual action plans;
2) Up-scaling (expansion) of activities with the help of professionals;
3) Creation of a "governance mechanism";
4) Preparation and execution of an exit strategy for the CDA.

8.2 Short and long-term objectives of implementation

The implementation of any action plan requires listing a number of activities to be completed within a given time frame, subject to resource constraints. Each activity of an action plan needs to have a clear short-term objective. Improving sales or the creation of linkages with buyers, for example, are the immediate objectives of organizing a fair.

The peculiarity of a cluster action plan is that, over and above the achievement of the stated short-term objectives, each activity should lead to the creation of an efficient and lasting governance mechanism: the cluster stakeholders must eventually be able to initiate and manage further development themselves. The CDA should keep this long-term objective clearly in view, especially because the cluster stakeholders often lose sight of it. The intermediaries that are required to build governance capacities must therefore be involved at the earliest possible stage, and stakeholder empowerment must be a continuous process, through delegation of responsibilities, creation of governance support mechanisms wherever needed, appropriate sequencing of activities, and transparency in implementation.

8.3 Implementing an annual action plan

The CDA should adhere to the following broad guidelines during implementation:

8.3.1 Select the best intermediaries

Each intermediary has particular characteristics and advantages, as Table 8.1 shows. In the preparation of the annual action plan the CDA should bring these into the discussion with the beneficiaries of each activity so that they can jointly choose an appropriate intermediary.

Table 8.1 Intermediaries and their particular strengths

Intermediary	Area(s) of comparative advantage
SME association	Ensuring that firms understand the nature and purpose of an activity and are motivated for it, creating momentum for an activity and coordinating its implementation
SME network	Implementation of a business development activity
BDS provider	Creating awareness about unrealised needs, provision of support services in a wide variety of areas
Technical institution	Supporting technical upgrading
Financial institution	Financial support

8.3.2 Resource mobilisation by stakeholders

For each demand-driven activity, there should be a substantial resource contribution from the stakeholders. Otherwise, their involvement remains patchy and their determination may falter. If a demand-driven activity fails to generate enough resources from the stakeholders, the CDA should question its basic premises.

Resources include:

1) Time, knowledge and financial contributions from the principal beneficiaries: these include time required to formulate and implement activities, identification of needs and solutions and locating intermediaries; knowledge related to cluster dynamics and participation fees.
2) Expertise and financial support from technical institutions: advice on training, technical upgrading, project preparation, etc.; in-kind contributions in the form of mainly available premises, equipment and staff for training courses. Such financial contributions increase prospects for increased demand for their services.
3) Time, expertise and financial contribution from associations/networks: these include secretarial support; identification of operational partners, sharing of responsibilities; access to infrastructure owned by the association/network and seed money for further fund mobilisation.
4) Contributions by the donor agency: mobilization of finance on a cost-sharing basis.
5) Time, knowledge and financial contribution from the implementing agency: CDA is its key contribution. Further knowledge contributions may come in the form of expert technical support. Financial contributions may come in the form of seed money.

Whatever the source of support, the cluster stakeholders should be constantly reminded that:

1) The involvement of the implementing agency will not continue after the cluster development programme is over;
2) Preference is usually given to innovative initiatives rather than known and tested ones;

3) The greater the contribution of the cluster stakeholders, the greater their freedom to set objectives and implementation procedures.

The ground rules for supporting an activity by an implementing agency are as follows:

1) The greater the likelihood of short-term commercial gain for beneficiaries, the lower the support to be provided. On the other hand, the greater the risk and developmental content in an activity, the greater should be the support;
2) If an activity is carried out for the second or third time, support should be considerably reduced, as the risk of that activity stands reduced;
3) Within the same cluster, percentage of support should be greater for stakeholders with limited financial means;
4) Activities generating benefits to a single beneficiary or having no cluster–wide indirect effect should not be supported. However, a firm may be helped to introduce a new technology for demonstration purposes if this benefits the process of learning and possible replication in the cluster.

In the artisan cluster of hand-block printed textiles at Jaipur (India), the contribution of the implementing agency (UNIDO) decreased for activities repeated over time and the proportion of support varied depending on the type of activity, as Table 8.2 shows.

Table 8.2: HBPT cluster of Jaipur –
UNIDO's contribution in total expenditure for selected events (%)

		1998			1999			2000		
		U	SI	CL	U	SI	CL	U	SI	CL
C	1st fair of printers at Jaipur	51	14	35						
M	Workshop of exporters	75	0	25						
D	1 st cluster level developmental workshop	33	67	0						
C	1st fair of printers at Delhi				15	31	54			
M	Exporters' training (visual merchandising)				35	48	17			
D	2nd cluster level developmental workshop				21	79	0			
C	1st fair of printers at Delhi with an NGO							16	0	84
M	Training of exporters & printers (washing)							0	33	67
D	3rd cluster level developmental workshop							5	95	0

Key: U: UNIDO, SI: support institution, CL: cluster. Activities: commercial (C), developmental (D), mixed (M - commercial and developmental).

8.3.3 Regular information dissemination

It is essential to keep the intermediaries fully informed about the implementation of the activity plan. This should lead to useful feedback in the form of suggestions that are crucial for continuous effectiveness of the programme. This practice also encourages mutual trust and understanding. Keeping people informed finally gives a sense of ownership and pride and creates eagerness among cluster stakeholders to achieve success in the concerned activity.

8.3.4 Activity sequencing

In order to maximize the trust-building impact of the action plan, it is advisable to proceed according to the following step-by-step process:

1) Activities should concentrate on the creation of trust among stakeholders, which is to be achieved through formal and informal interactions.
2) Priority should be given to workshops, training courses, short-duration events and networking. These activities, apart from transferring practical know-how and serving as instruments to strengthen business performance, increase interaction and help create the confidence needed by stakeholders to depend on each other for critically important medium to long run business activities.
3) With the greater trust thus attained, more focused and complex joint business-oriented activities can be introduced, such as linkage to new market/ marketing channels, quality upgrading, cost reduction, raising finance, etc.
4) Once the stakeholders start enjoying substantial benefits from these complex joint business activities, longer-term activities can be introduced, such as technological changes, infrastructure development, pollution control, etc.

8.4 Up-scaling through professional implementers

A successful activity that leads to business gains often involves support from 'professional implementers'. At this stage, as demand for similar activities increase, the demand for the enabling 'professional implementers' also increase. But availability of such professional agents (BDS providers, NDAs) who can help upscale activities scan be a major bottleneck: often there is no critical minimum mass of stakeholders interested in bearing the full cost of such support. Therefore a CDA must look ahead, identify potential BDS providers and NDAs, and create a good relationship between them and the stakeholders to raise the latter's motivation to commit themselves financially to these services which may be essential for future growth. If possible, the CDA should find other appropriate stakeholders who can handle this issue.

8.5 Creating governance capacity

Realization of cluster vision requires a cluster-wide governance mechanism. The stakeholders must eventually be capable to identify joint activities, carry out implementation and subsequently up-scale them without a CDA. Sound governance:

- Is pro-active;
- Has effective mechanisms for including all stakeholders in decision-making;
- Has a long-term agenda;
- Has a sound financial basis;
- Is supported by effective and efficient institutions for various special activities.

It must be stressed that capacity building in governance should eventually encompass the entire cluster; therefore the CDA must transfer governance expertise at all levels. Much of this can be done without formal teaching, through exposure to successful cases and through the direct involvement of stakeholders at all activity stages. Governance capacity building can be part of the following activities:

- Awareness-raising seminars of cluster entrepreneurs;
- Creation of networks;
- Establishment of linkages among local institutions;
- Dialogues between producers' and workers' associations;
- Introductory seminars on project financing for local policy makers;
- Workshops on the cluster vision;
- Presentations of best practice drawn from the experience of other clusters;
- Study tours to successful clusters;
- Dialogue among all cluster stakeholders.

By ensuring that greatest possible number of people (in the partner networks as well as in any other

institution) are (co-)responsible for activities at some point, direct exposure to the "technicalities" of cluster development will be maximized, and a pool of potential cluster leaders and managers may be created.

In addition, building governance will require capable intermediaries, which come in two categories: pro-active support institutions and BDS providers who are sensitive to the business needs of the firms in the cluster; and brokerage institutions with full knowledge of cluster development and long-term coordination capacities.

The transformation of a cluster's governance framework can be visualized through current and future cluster maps, as discussed in Chapter 7. Cluster maps for Ludhiana Hosiery Cluster (in India) - before and after cluster transformation appear at the end of the chapter. The improved governance structure of the cluster can be seen in the form of creation of new institutions and enhanced role of existing institutions in the cluster map after intervention in 2001.

With regard to governance, it should show:

- Cooperation among firms in the form of networks, joint activities, consortia, and associations;
- Cluster management/administration units that may have been created and thriving;
- New support institutions/bodies that have joined the cluster, or have been created in it
- Emergence of specialised support service providers (if missing before the intervention) and their active involvement in the development process.

Presence of these intermediaries in sufficient numbers and their capacity will vary over the period of intervention. Even at the conclusion of a programme of say 3-years duration by an implementing agency, these intermediaries might not mature fully.

To assess the preparedness of these intermediaries who will ensure self-governance in the cluster one can use a tool called the *sustainability index*. The sustainability index measures the degree of sustainability of operations by the cluster itself at any point of time. The sustainability index can be constructed at regular intervals during implementation.

As mentioned above, the intermediaries can be grouped into (a) networks/associations, (b) support institutions and service providers and (c) brokering institutions. In a demand driven methodology, the importance of networks/associations will be the maximum, as demand from their side will make the other intermediaries move. The support institutions and the service providers will have to address those needs promptly to keep the momentum of business cooperation going. The brokering institutions will need to coordinate these mechanisms and create an atmosphere of smooth operations.

We can thus provide highest weightage to networks/ associations – 60 per cent, followed by support institutions and service providers – 30 per cent and brokering institutions – 10 per cent to demonstrate their importance in the sustainability index. In each group one can divide a total weightage of 100 for that group among various group members as per their importance with respect to criticality and cluster coverage. A weighted value of each member of a group can be derived by assigning a weightage pattern as given in annex 3. The sum total of weighted index of each group can then be further weighted by 60 per cent for the group of networks/associations, 30 per cent for the group of support institutions and service providers and 10 per cent for the group of brokering institutions. The gross value of the sustainability index will indicate the preparedness of the cluster with respect to self-governance. A methodology for calculating the sustainability index appears at the end of the chapter.

8.6 Stages of implementation

The process of implementation involves three broad stages.

Stage one. The CDA has most of the responsibility for implementation and the contributions of the implementing agency are larger that those of the cluster stakeholders. The CDA assists in formulating the cluster vision and drafting action plans, identifies cluster partners, enlists local support institutions, and undertakes capacity building.

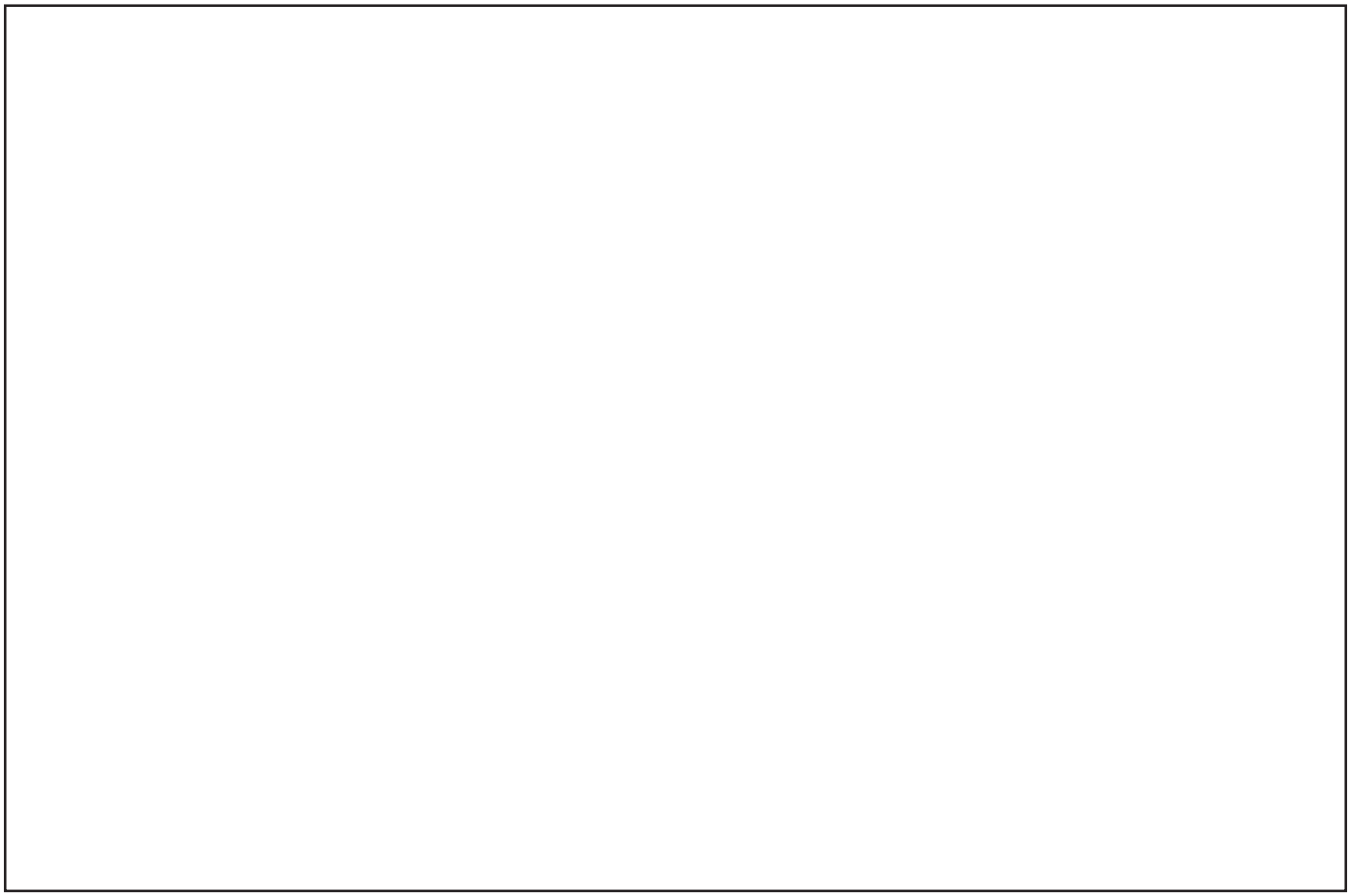
Stage two. The cluster stakeholders gain greater trust in their capacities, are more willing to commit their own resources and increasingly learn to find co-funders and other support. The CDA begins to hand over responsibilities, especially at the activity level.

Stage three. The cluster intervention is effectively approaching its conclusion and the cluster is characterized by a stronger bonding among the cluster stakeholders. The cluster stakeholders contribute significantly to the funding of activities, and start selecting strategic objectives autonomously. At the end, the process has become largely self-sustainable.

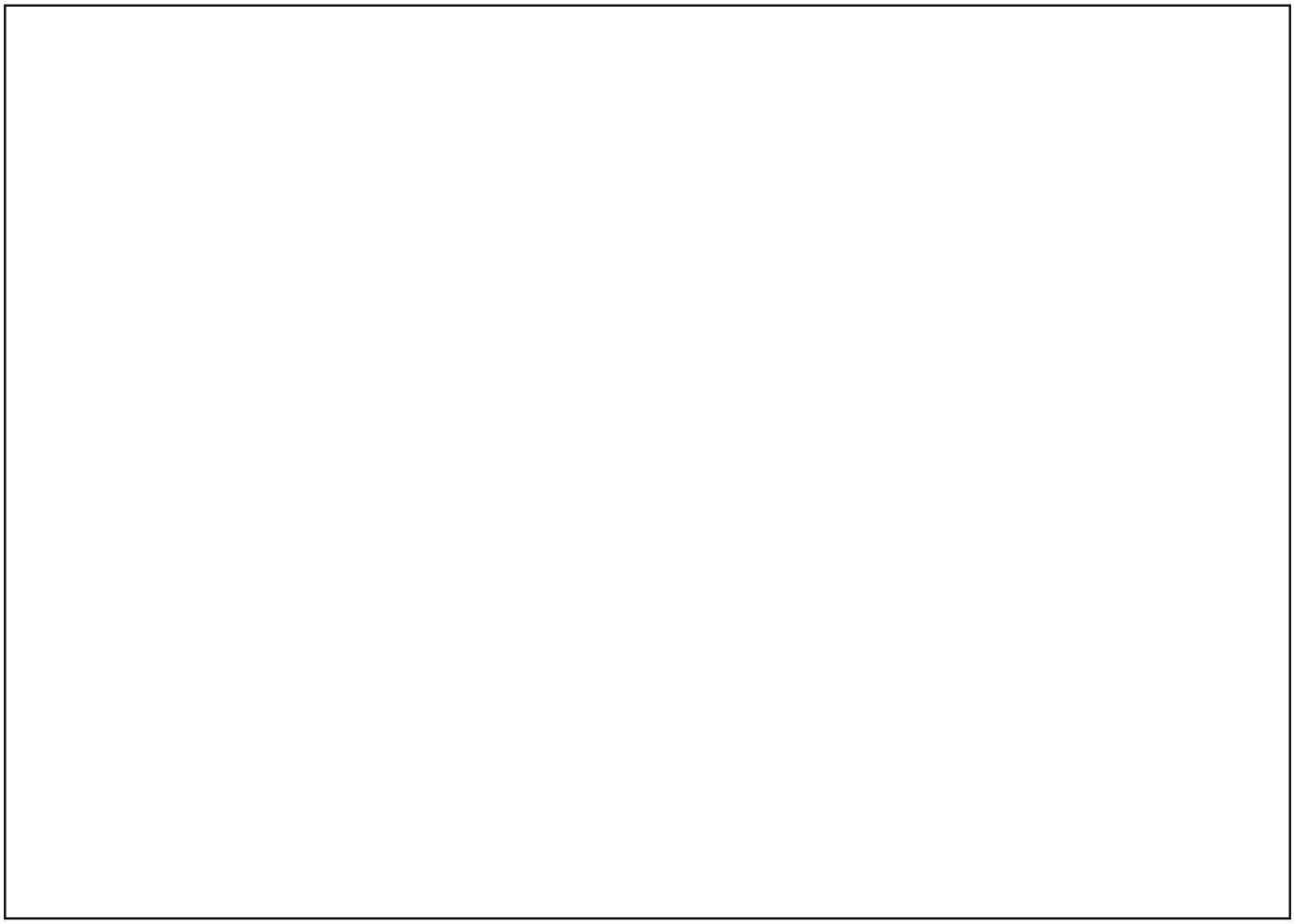
8.7 The CDA's exit strategy

The CDA's exit strategy must be drawn up at the latest a few months before completion of the cluster development initiative. Ideally it should be ready by the beginning of implementation stage three. The importance of a formal exit strategy is that it stimulates a conscious effort by the CDA to leave the 'activity trap' (implementing the annual action plan and up-scaling of activities that have shown results) and to think in terms of filling critical gaps in the governance mechanism of the cluster:, strengthening linkages among stakeholders, identification and training of future leaders and implementers, identification of future activities by different stakeholders, identification of resources for future activities, etc. The exit strategy ensures a smooth transition of responsibility to the stakeholders.

Cluster map of Ludhiana hosiery cluster before intervention (1997)



Cluster map of Ludhiana hosiery cluster after intervention (2001)



Sustainability Index

Allocation of weightage among groups

1. Enterprises: 60%, to be sub-divided according to importance (criticality/coverage) among, e.g. consortia, self-help groups, associations, etc.

2. Support institutions/service provider: 30%, to be sub-divided according to importance (criticality/coverage) among, e.g. technical/ financial institutions, BDS providers, etc

3. Brokering Units: 10%, to be sub-divided according to importance (criticality/coverage) among, e.g. coordination body, umbrella organization, etc.

Allocation of score for an intermediary in each group

1. Enterprises' Representatives

Score	Features
0	Not existing
1-2	Just established and/or dormant
3-4	Regular meetings being held; discussions on provisional agenda; limited commitme of funds by participants; office bearer selected
5 - 6	Short-term agenda endorsed by members; some activities started under near complete support of implementing agency (financial and/or technical); positive feedback form members that increasingly contribute financially; growing membership
7 - 8	Medium-term agenda endorsed by members; overall activities partially sustainable financially; capacity to network with support institutions/BDS providers without implementing agency support; target membership achieved
9 - 10	Full financial sustainability; complete endorsement of cluster development approach; long-term agenda endorsed by members; full networking capacities; participation in coordinated cluster-wide activities

2. *Support/Service Providers*

Score	Features
0	Not existing locally; totally detached from potential consumers
1 – 3	Provider created locally; preliminary discussions with potential customers coordinated by implementing agency
4 - 6	Pilot services along new format launched; significant funding support from implementing agency; feedback form users acknowledged as guide for further customisation of services
7 - 9	Pilot services turned into routine and increasingly sustainable commercially; autonomous networking for funds/expertise; new services launched on a regular basis
10	Fully endorses cluster development approach; high demand among customers, fully pro-active with other local support institutions; investment of own funds for cluster development, open to introduction of new services

3. *Brokering Institution*

Score	Features
0	Not existing
1 - 3	Preliminary interactions with CDA; limited interactions with cluster stake holders
4 - 6	Coordination of pilot activities under CDA guidance; linkage with sponsors through implementing agency; linkages with policy makers established
7 - 9	Autonomous dialogue with policy-makers and support institutions; legitimised with majority of cluster actors
10	Fully acknowledged as coordinating agent by most cluster actors; economically sustainable and own contribution to cluster development; long-term coordination capacities created; fully competent on cluster development methodology.

Chapter 9
Monitoring and Evaluation[1]

9.1 What is M&E?

Both monitoring and evaluation (M&E) are involved with the gathering of data to measure the work undertaken by a project and to compare this with the targets set out in the project document. Monitoring is geared towards recording project activities on an ongoing basis during the life of the project. Evaluation takes place both during the life of the project and retrospectively, at the end of a project or project phase. It has to do with appraising both the **efficiency** of the project (its success in achieving the targets set within the agreed budget); but also its **effectiveness** (that is, the degree to which project activities have led to the anticipated improvements in key impact indicators – income, employment, empowerment, etc. We will return to this below).

9.2 Why do M&E? : Different needs of different stakeholders

There is no one reason for undertaking M&E activities. Different stakeholders involved in promoting **Cluster and Network Development (CND)** have different interests, which in turn determine the type and scope of M&E information that are relevant to them. The M&E needs of the key stakeholders are described below:

For **CND project managers**, M&E is a management tool whose primary functions are: i) to keep track of whether the various project activities being implemented are on schedule and in line with the budget; ii) to analyze the degree to which these activities are translating into the anticipated outputs (are vertical and/or horizontal networks developing in the way that had been hoped? are skills and market access improving in the ways that had been anticipated? etc.); and iii) to measure the effect these outputs have on the project's key impact indicators – levels of income, employment, empowerment, etc. M&E systems need to deliver information at each of these three levels to enable project managers to maximise impact, cost effectiveness and sustainability for their initiatives.

Private sector BDS providers are likely to undertake M&E to monitor customer satisfaction, respond to changes in demand, develop new and better products, manage costs, and establish staff incentives.

Donors need M&E information to ensure accountability in the use of their funds and to decide between different types of approach and project in their funding decisions. Donors often focus on broader social and economic objectives of

employment, enterprise competitiveness, and poverty alleviation.

Governments value M&E because it is can provide them with useful information on the relative value of different approaches and models. This, in turn, can feed into the process of policy formulation and the coordination of programmes on the ground.

For project **client enterprises**, participation in M&E exercises can provide an important opportunity for cooperation and trust-building and for having a meaningful input into the design and implementation of initiatives that directly affect their performance.

In the remainder of this section, priority will be given to the M&E needs of CND project managers, recognizing that their needs will, to a greater or lesser extend, tend to coincide with or complement the needs of each of the other stakeholders.

9.3 What needs to be measured?

The first and most important step in the design of an M&E system comes at the stage of project design. It is here that the key stakeholders need to reach a common vision about:

1. what it is they want to achieve;
2. what things the project needs to do for this to happen;
3. how they would know if they had succeeded in their goals; andm
4. how they intend to measure progress on these fronts

9.4 The log-frame as a tool for M&E

Within the context of the logical framework (log-frame) planning tool, these four questions
relate to:

1. development objective and immediate objective;
2. outputs and activities;
3. indicators; and
4. sources of verification.

So, using the vocabulary of the log-frame, M&E can be described very simply as the process of measuring project achievements against the various targets set for each indicator at the four levels of the log-frame (activities, outputs, immediate objective and development objective).[2]

The three core problems faced by most SME projects are that:

1. they tend to gather much data on activities and outputs, but very little on the project's immediate and development objectives;
2. their collection of financial data on both costs and benefits is rarely sufficient to enable them to undertake rigorous and authoritative benefit-cost analyses; and
3. their indicators for sustainability are insufficiently clear to serve as a useful management tool.

Outputs related to manuals produced, training courses provided, exchange visits undertaken, etc. (activities); and of clusters strengthened, policy-makers sensitised and producer associations empowered (outputs), etc. can be described as **project performance**. However, they have little to say about increases in employment or income, etc. (immediate objective); or about poverty alleviation or other higher order development objectives. This is **project impact**.

The CND approach is based on the belief (among others) that clustering and networking among enterprises promotes enterprise competitiveness. But can this belief be assumed to be true? We know, for example, that some clusters are highly dynamic while others are more or less stagnant. The relationship between the *outputs* associated with CND projects (increased cooperation and networking within networks and clusters) and their *impacts (*increased wealth and poverty alleviation, etc.) is complex and relatively little understood.

9.5 Measuring project performance

There are clearly significant differences between clusters in the degree to which increased cooperation and capacity translates into solid improvements in the quality of life of the people and performance of the organizations inhabiting them. It is the role of a properly functioning M&E system to throw light on these questions. Similarly, the case studies contain little information on the relative costs and benefits associated with their various initiatives (cost-effectiveness). In addition, while they do provide some information on the transfer of services to BDS providers and other actors, this is rarely presented

in the context of a clear and time-bound strategy for post project sustainability.

These various omissions are, in part, due to the very real methodological problems associated with data-collection and analysis at these levels as well as with the "evolving" nature of CND projects. Nonetheless, if M&E systems are to be an effective management tool, these problems must be satisfactorily addressed. The remainder of this section describes some of the main methodological problems and how they might be tackled. We will look in turn at the measurement of project performance, project impact, cost-effectiveness and sustainability. Finally, some of the principles underlying a common methodology for CND projects are proposed.

Provided that clear, specific and time-bound indicators and targets have been set in the log-frame and realistic sources of verification have been established, the gathering of data on project performance should pose few problems. Indeed, this has been the experience of the case studies described above, each of which provides substantial information on the number of clusters strengthened, associations established, business networks created, awareness-raising campaigns undertaken, trade fair visits sponsored and so on.

The only methodological problem in measuring the performance of CND projects lies in how to define the 'strengthening' of clusters and networks. This is the relationship between project activities and outputs: it cannot be taken for granted that, for instance, the establishment of a network produces economic gains for the enterprises that comprise it or providing training to the staff of producer associations, will necessarily result in a real strengthening of the association capability to be useful for its members. As noted above, the factors underlying the emergence of dynamic clusters and networks are complex: in some cases, for example, the economic climate can be so unfavorable in the sector concerned that no amount of such activities can, in fact, lead to effective joint action among clustered enterprises. Many other such factors are also likely to be at play. What is required is the identification of indicators that characterize strong and effective networks and clusters. These may relate to the types of decisions taken, the nature of joint projects undertaken, the quality of the relationships that develop with other cluster actors – the relative importance of these is likely to vary between cultures and contexts. Of key importance is that appropriate indicators be identified in a dynamic and context- specific process, rather than drawn mechanically from a list.

Here, developing a culture of rigorous and efficient M&E will bring its own rewards. For it is just such a culture that will facilitate the identification of the key types of behaviors and factors that characterize truly strengthened clusters and networks. Once these have been identified and demonstrated in a good number of cases, project staff may be able with greater authority to draw a convincing connection between the undertaking of certain activities, and cluster and network strengthening.

9.6 Measuring project impact

The impact of a CND project can be defined as those changes, both intended and unintended, that occur (especially but not exclusively) among its target groups – MSEs, producer associations, BDS providers, etc. – that can reasonably be attributed to the project. In this sense, project activities and outputs (all of the various things that project staff does) can be seen primarily as the means towards the end of effecting tangible changes in the conditions of their target groups – which is project impact. In terms of the measurement of impact, four points need to be made at the outset:

1. Even if there were to be no limits on the resources devoted to M&E (which is never the case), it would be just about impossible to arrive at an exact and objective calculation of the impact of any project. Especially in the world of MSE clusters and networks, conditions are much too complex to enable the M&E team to either: i) capture all of the various effects of project activities that ripple out from direct project clients to other enterprises within and beyond the cluster; or ii) precisely attribute benefits to the activities of the project, as opposed to all of the other forces and initiatives at play.
2. Neither donors nor project managers *expect* the M&E team to deliver scientifically objective findings on project impact. The aim, rather, is to make an assessment on the basis of reasonable assumptions (that is, assumptions that will stand up intelligent

scrutiny and common sense) of what benefits can reasonably be attributed to the project.

3. Effective M&E systems are those that find an appropriate balance between delivering useful (that is, specific and reasonably accurate) findings without using up an unreasonably large amount of the human and financial resources at the disposal of the project.
4. Effective M&E systems tend to be those that focus on a small number of indicators (generally including trends in income and employment) and investigate them thoroughly and well. Conversely, projects that rely on long and poorly-focused questionnaires for their M&E systems tend to alienate both staff and clients while delivering information that is of limited value.

9.6.1 What needs to be measured to determine project impact?

Measurements of trends in the following areas are likely to lie at the heart of all CND projects. (Only specific areas may need to be measured in particular projects, but the following can be considered as to cover the broad range of impact assessment issues for CND.)

- **Scale**: how many people, enterprises and/or institutions were affected?
- **Outreach**: to what extent did the effects (hopefully benefits!) of the project spread to specific target groups (the poor, women, specific castes or ethnic groups, particularly isolated or marginal target groups)?
- **Economic gains or losses among client enterprises**, (e.g. changes in output, productivity, product range and quality, income, employment, etc.)
- **Total economic gains or losses**, i.e. including those beyond client enterprises.
- **Capacities and strengths of enterprise networks**, including horizontal and vertical linkages achieved during the life of the project.
- **Total entrepreneurial and networking capabilities**, i.e. including those beyond client enterprises.
- **The development of BDS and financial markets**: in what way has demand for and supply of BDS and financial services been affected by the project?
- **Strengthening of support institutions**: in what ways have the various support institutions, including producer associations and government agencies, been strengthened by the project?
- **Changes in the overall business environment that have an effect on enterprises**
- **Corporate responsibility**: that is, capability of firms to be "responsible" for social and environmental issues
- **Social Capital**: including issues such as collective action and cooperation, social inclusion and empowerment.

The methodological difficulties and challenges associated with the first four of these areas (considered as core elements of an impact assessment system) are relatively well understood and will be discussed below.

9.6.2 Measuring Scale

How many institutions, enterprises, households and individuals have derived benefit from the project? Of course, in most cases, it is impossible to know exactly: good ideas are self-seeding and such impacts are generally difficult to track. The aim is to make a sound estimate on the basis of reasonable assumptions.

A first step is to **distinguish between direct and indirect beneficiaries**. Direct beneficiaries should be easy to count – these are the clients with which the project has direct contact.

Greater methodological challenges lie in the calculation of indirect beneficiaries. This is especially so within enterprise clusters, where part of the rationale for interventions is that innovations introduced by the project will spill over beyond direct project clients, thus increasing the cost-effectiveness of the intervention.

In seeking to quantify indirect beneficiaries, it is necessary to establish what the main anticipated benefits are (or in the case of postproject evaluation, what *have been* the principal benefits) of the project: new techniques or technologies introduced? new products developed? joint raw materials purchase? new markets opened up? others? The aim then is to attempt to gauge the degree to which other actors that have had no direct contact with the project have

also adopted the new techniques, technologies, working methods, forms of organisation, or whatever the specific benefits might be.

How one would investigate this and where one would look for evidence will depend on the nature of the anticipated benefits and identity of the likely beneficiaries. Remember that beneficiaries will not necessarily be limited to other small enterprises: they may also include other actors both upstream (those supplying benefiting enterprises with raw materials, equipment, components, etc.) and downstream (those using the products of benefiting small enterprises in their various activities). It is important here to think in terms of 'value-chains' – to attempt to track impact throughout the chain of relationships of which client small enterprises form part.

In most cases, this is best done relatively informally – that is, by visits to other areas or enterprises where it is anticipated that the innovations may have taken root and the use of key informant and semi-structured interviews – rather than by highly rigorous and scientific analysis.[3] This latter strategy is likely to prove too time-consuming and expensive. Remember, the principal aim of M&E for project staff is as a source of information to improve the quality of management, *not* as a propaganda tool. In consequence, those undertaking such studies should be motivated primarily by curiosity about the degree to which project strategy is working and benefits are spreading throughout the cluster and beyond. If this is happening to a significant degree, what has the project done right and what lessons can be learned to guide future actions? If not, what more could the project be doing to facilitate dissemination? It serves no one for project staff to actively seek out those cases that justify its approach, over-looking cases of failure.

9.6.3 Measuring outreach

To what degree has the project succeeded in delivering benefits to particular target groups? Begin by noting which (if any) specific groups the project seeks to reach – women? the poor? specific ethnic groups or castes? etc Particular attention is required in projects with a strong focus on poverty alleviation in defining what constitutes 'the poor'. Is poverty to be measured in purely financial terms or is there a place for considerations such as access (to health, education, land, etc.) or vulnerability?

Having clarified precisely which special groups are to be targeted, these need to be represented to an appropriate degree in the M&E's baseline sample and control group (see below). If non-financial measures of improvement in the condition of the poor have been adopted, a more qualitative approach to impact assessment will be required. This is likely to entail the adoption of a highly participatory approach to ensure both that appropriate indicators are identified and that high-quality information on project impact is gathered. There is likely to be a need to complement (or, in some cases, to replace) the questionnaire-based method of information-gathering, so suited to quantitative data collection, with key informant and semi-structured interviews and focus group formats. (This point is equally true when setting and measuring all qualitative indicators, not just those relating to poverty.)

9.6.4 Measuring economic gains among client enterprises.

Remember that a core rationale for most enterprise development projects is to promote an increase in the material well-being of households and individuals, and the most accurate indicators we have for measuring this is jobs and earnings. A crucial factor to be considered here, however, is time. In CND projects, in fact, the impact on enterprise profitability "matures" only over time because these projects focus on institution building and inter-enterprise relationships rather that on direct support to individual enterprises

Keeping this factor in mind, it is still important that economic gains of local enterprises are adequately accounted for and the first task here is to **draw up a representative sample** of client enterprises to provide the data base-line. What are the key variables within the target group you are working with most likely to have an impact on enterprise level trends in employment and income? – sector? enterprise size? level of technological sophistication? gender of the owner or workers; caste or ethnicity? (The relative importance of these is likely to vary significantly between projects.) Identify which are the most important and ensure that the baseline sample offers an approximate reflection of how these variables are distributed among the total universe of enterprises that the project is targeting. The sample needs to be large enough to compensate for any particularities or

exceptional cases at enterprise level: generally ten per cent or so of the total number of direct beneficiaries is recommended.

In general, getting information on trends in employment at enterprise-level is relatively straightforward. However, it is important to remember that in many situations, a significant amount of employment is neither fulltime nor permanent. M&E systems need to have sufficient sensitivity to track trends in seasonal and part-time work. This requires either relatively frequent monitoring (quarterly information-gathering should be sufficient) or training of sample entrepreneurs to record this information themselves on simple questionnaires. M&E should attempt to record not just the number of workers but also: i) category of worker (skilled employee, apprentice, part-time, seasonal); and ii) how many hours per week they are employed.

Gathering data on trends in income among client enterprises can be significantly more difficult. There are numerous reasons why an entrepreneur might provide inaccurate information to a project M&E worker: poor memory recall in a context of little or no record-keeping, fear of the information leaking to the tax authorities; believing that under-reporting or over-reporting gains might result in additional project assistance; or a simple desire for privacy and/or resentment of perceived intrusion. In spite of all this, and especially where strong relations of trust have developed between project and clients, direct enterprise-level questionnaires on income trends can deliver valuable results.

In those cases where it is not safe to trust information on income gained from direct interviews, one alternative (or complementary) approach is to identify **proxy indicators** – that is, indicators which are closely related to the trends to be measured and which can be expected to throw significant light upon them. In the case of income, the best proxy indicator is production. Here, the task is to identify the principal products made by target enterprises and to track changes in their levels of production.

This can be done in one of three ways. First, and easiest, in those cases where enterprises are involved in joint marketing, the records of the marketing company can provide all the necessary information. Second, entrepreneurs can be trained to record production data on simple questionnaires. Finally, the information can be gathered through regular visits by field staff. Remember, the aim is not to record every item produced, but only the major ones.

The next challenge for the M&E system is that of **attribution** – that is, to what extent can any gains that are recorded among client enterprises be attributed to the activities of the project, as opposed to other forces at work within the cluster or network? The best way of addressing this problem is to establish a **control group**. A control group is a group of enterprises that, as far as possible, resembles the base-line sample in every respect other than that it derives neither direct nor indirect benefit from the project. Thus, in theory, by using a control group, the specific impact of the project can be isolated.

The use of control groups is rarely without its complications. Enterprises enjoying no project support have little interest in cooperating with M&E staff – in many cases where control groups are used, in fact, they are paid a small fee to encourage them to do so. In addition, it is rarely easy to find a truly similar control group, not least because clusters are often selected for participation in CND projects because they already enjoy some special distinctive characteristics that set them apart from others.

Within the cluster, it can also be difficult to identify enterprises that are in no way affected by the project – for one of two reasons. First, where cluster-based projects are successful, their effects are likely to ripple widely throughout the cluster, with the innovations introduced by the project imitated and replicated by many others. Second is the problem of **displacement**; that is, do the gains recorded among the sample group genuinely represent new economic activity, or do they merely indicate that enterprises benefiting from project assistance have displaced to others that have not? If this is the case, the contrast in fortunes between the two will be exaggerated (and the project may believe it is being very successful), even if little or no new economic activity is being generated.

There are no easy solutions to these challenges. The most that project staff can do is to be aware of the dangers in the creation of their control group and to aim for a group that as nearly as possible resembles the baseline sample in all respects other than participation in the project.

9.6.5 Measuring total economic gains

We return to the question of how to track impact beyond the direct project clients. *Within* the cluster, as noted above, successful projects are likely to generate significant cluster-wide ripples, with new products, techniques, technologies, working practices, forms of enterprise cooperation, etc. being widely imitated and replicated. In addition, the capacity of producer associations and other organisations is likely to grow, enabling them to better promote the interest and fortunes of their members. Further, within the cluster as a whole, capacity for design may well be enhanced, with additional positive consequences in terms of increased growth.

External to the cluster, there may well also be significant benefits to a range of actors along the value-chain. An increase in the capacity of small-scale capital goods manufactures, for example, is likely to have a wide and deep impact through the dissemination of small-scale manufacturing and food processing equipment, creating new opportunities for rural enterprises, with employment and income gains among both rural entrepreneurs and farmers. Increased vitality within MSE clusters, irrespective of the specific sector, will generate additional economic activity, both up-stream among suppliers; and downstream among clients (except in the case of purely consumer goods).

It is important for CND projects to attempt to capture these various indirect benefits, for two principal reasons. Firstly, as a management tool. One cluster development project in Zimbabwe began by gathering data only among the small-scale engineers that it was working with. At this level, it concluded that impact was relatively low – significantly lower than project costs. Only later did it recognise that most project benefits accrued not to the small-scale engineers (their direct clients) but to the rural entrepreneurs who bought their equipment and the farmers from whom they, in turn, demanded an increased supply of inputs. This insight permitted a shift in project strategy that saw a much greater focus on the marketing of the equipment made by their client enterprises in the rural areas of the country. This shift resulted in the project having a significantly increased impact.

Second, to ensure efficient allocation of development funding, it is important to be able to compare the total relative costs and benefits of different projects and of different approaches and models. As CND projects are often characterised by relatively high levels of ripple benefit (beyond direct project clients), it is especially important for them to be able to track these wider impacts. We will return to this in the next section on cost-effectiveness.

9.7 Measuring cost-effectiveness

There are two dimensions of cost-effectiveness that CND projects need to measure. The first is that noted above, namely relative project costs and benefits. There are well established conventions governing the calculation of benefit: cost ratios, including the projecting of anticipated monetary benefits for 10 – 15 years beyond the life of the project. It is essential that such calculations, whether undertaken during the project or after its completion, be undertaken in as transparent and professional a manner as possible.

A negative benefit: cost ratio does not necessarily mean that a project has failed; many are able to argue that certain of the benefits generated have some 'public goods' characteristics (enhanced skills and other capacity spreading far beyond the direct target group) for which full cost-recovery is neither possible nor reasonable. However, a transparent and professional benefit: cost analysis will help to make this rationale explicit and to make the case for on-going government or donor subsidy.

It is also useful, where possible, to attempt to separate out the costs and benefits associated with different services provided by a project. This enables project managers to get a feel for which of the services (or which combination of services) they provide are having greatest impact. It is true that where services are bundled together, such a disaggregation of costs and benefits may be difficult. However, calculations of the relative costs and benefits of packages of bundled services may also be both possible and useful. The greater the level of disaggregation, the more useful it is likely to be to project managers.

The second dimension of cost-effectiveness needing to be tracked can be described as 'value-for-money' – that is, are the services being provided in the cheapest and most efficient way possible? This is a particularly important consideration when considering services for which there is the potential

for competition between the project and other BDS providers.

Every effort needs to be made to ensure that donor funding is not providing hidden subsidies in service areas where private service providers could emerge. If project managers are to make informed decisions on the allocation of resources; and if they are to encourage rather than inhibit the development of private sector BDS markets, M&E systems need to be designed to permit the tracking of service-specific costs and benefits.

9.8 Measuring sustainability

Is there a need for the services provided by the project to continue beyond the life of the project? If so, how are they to be provided? There are five possible sustainability strategies (that are, in fact, complementary – most of the case studies include at least several of the following elements).

• Transfer services to private sector BDS providers.

• Strengthen the capacity of business associations to provide services beyond the life of the project.

• Client enterprises within the cluster take over from the project payment for the services of the cluster or network broker.

• Look to donors or government for longterm subsidy. This will be possible only where projects succeed in persuading donors or governments of strong 'public good'-type benefits accruing from projects that will incline them to provide on-going support. However there is an obvious risk in this type of strategy especially in countries where public budgets are scanty and development priorities may change. Only rarely will this prove to be a viable sustainability strategy.

• Support 'soft networks', for short-term, specific goals, that will not need to continue beyond the life of the project.

The first task is to be clear about which of these elements, and in what combination, are to make up the project's sustainability strategy. Then, targets and timetables need to be set for each. For example:

Which BDS are to be transferred to private sector providers? What should be the timetable for this transfer? How is it to be achieved?

According to what timetable should business associations take over project activities? Which ones? How?

What is the strategy for engaging donors and/or government into playing the role of long-term funder?

What are to be the indicators and targets for this?

Each of the key stakeholders concerned should be involved in negotiating and setting the targets and timetables for the sustainability strategy. This will create consensus around the strategy that evolves, thus contributing to its chances of success.

A few words are needed specifically about tracking the development of a BDS market, since this is likely to be a particularly important element of most CND sustainability strategies. In many (some would say most, or even all) cases, private sector organizations are likely to be able to deliver BDS more efficiently, cheaply and sustainably than donor-funded projects. In this context, the appropriate role of projects should be to stimulate private sector BDS provision rather than attempting to play this role (in the longterm) themselves. Thus, it is legitimate for projects to act as BDS providers only as a means of stimulating demand for and/or private sector supply of the services in question.

However, it will be difficult for project managers to gauge when and at what speed to withdraw from service provision without good information on the levels of existing demand and supply potential within the marketplace. On the demand side, the M&E system needs to be able to track both what services are required by small enterprises within the cluster and their willingness to pay for these. On the supply side, indicators need to be developed and tracked that describe the capacity of private sector providers to deliver services of an acceptable quality.

It is important that private sector BDS providers have the capacity to undertake market research of this kind into the future, if they are to be able to adapt their services to changing patterns of demand. Consequently, it should be an important part of the capacity-building work of CND projects to undertake this M&E work in close cooperation with these private sector service providers.

9.9 Conclusions: key principles of a CND M&E system

The following are some of the key principles of an appropriate M&E system for CND projects arising out of the foregoing:

M&E for managers of CND projects should be seen primarily as a **management tool**, whose function is to feed information into the process of **maximising the impact**, cost effectiveness and sustainability of this and other similar projects. Project M&E systems that are geared towards proving impact to donors and governments are too often selective in their search for positive evidence and thus, miss out on the many positive lessons to be learned from failed experiments.

M&E should be seen as a learning experience, an opportunity to engage all stakeholders in the process of setting indicators and targets and measuring performance and impact against them. This is likely both to build the capacity of the various stakeholders and to lead to an improved flow of information at the disposal of the project team.

It is important to deliver high-quality information not just on project activities and outputs; but also on immediate and development objectives.

Indicators need to be adapted to sector- and culture-specific contexts rather than drawn in a mechanical way from a pre-prepared list.

Effective M&E systems tend to work with a relatively small number of highly-focused indicators. The process of designing and implementing an appropriate M&E system should arise out of the questions: 'what are we trying to achieve?' and 'how would we know if we were succeeding in this?' If done this way, the process of M&E data collection and analysis should feel meaningful and exciting as all involved track progress against commonly-agreed indicators and targets.

Neither project managers nor donors expect scientifically rigorous findings from an M&E system. What is required are results based on reasonable assumptions, that demonstrate awareness of the factors that are most likely to distort the true picture.

Devote resources at the outset to the establishment of a base-line data set and of a control group. This is likely to save many M&E problems in the longer-term.

It is desirable to provide some form of benefit: cost analysis. If this is to be relevant to CND projects, which have the potential to create substantial ripple benefits, ways must be identified to track and quantify impact beyond direct project clients, throughout the value-chain.

For the M&E system to be a useful management tool in tracking progress towards sustainability, a sustainability strategy must be clearly articulated and appropriate indicators and targets set.

Measurement of trends in the supply and demand of BDS should be done in close cooperation with private sector service providers as a way of transferring capacity to them.\

(Footnotes)

[1] This Chapter is an extract from a UNIDO publication entitled "Expert Group Meeting on Cluster and Network Development with Special Emphasis on Monitoring and Evaluation Issues"; Jonathan Dawson and Pierre Paris, UNIDO consultants and UNIDO Project Teams in India, Nicaragua, Senegal and Zimbabwe, Edited by: Giovanna Ceglie Small and Medium Enterprise Branch" Vienna, October 2003. This Chapter is a reprint of Section IV of this Publication.

[2] It should be noted here that the log-frame created at the beginning of the project is not cast in stone: stakeholders can return and make changes to it as necessary in response to unanticipated factors or project results. Nonetheless, in most cases, the initial creation of the log-frame is most important step in the process of creating a shared vision, indicators and targets among the various stakeholders.

[3] 'Key informants' are people identified by the M&E team as particularly important sources of information by virtue of the position they occupy in the SME world or in the value-chain of which they form part. Semi-structured interviews can involve the use of both questionairesquestionnaires and more informal discussions. They provide greater flexibility and permit the gathering of more qualitative information than conventional, questionairequestionnaire-based interviews.

Chapter 10
Need For A Cluster Development Agent

10.1 Why an external agency is needed, and which type

In an underachieving cluster, mutual trust and social capital are likely to be so low that an external agency may be needed to activate the development potential of the cluster. To be successful, this external agency must be neutral (not a stakeholder) and preferably be a public-sector agency. Neutrality of the agency gives confidence to the stakeholders for entering into cooperation, in areas of hitherto unexplored business issues, as brokered by the agency. The prerequisite for the same is creation of social capital through a continuous trust building process.

Again, social capital formation and trust building are, so to speak, 'public' goods within the context of the cluster. It is difficult for individual stakeholders to determine exactly how and when they will benefit from them, and therefore their willingness to pay for an increase in social capital and trust is likely to be limited. Which again means that creating trust and social capital are unlikely to be profitable activities for a private-sector business service providing firm. A public-sector agency (local government, a local development bank, a public-sector SME support agency, the Chamber of Commerce, NGO etc.) is therefore probably best suited to initiate such activities.

10.2 What a CDA is and does

The cluster development agent (CDA) is the representative[2] of the neutral programme implementing agency in the cluster. His or her job entails formulating and implementing a development strategy in a well-defined time period; with the stakeholders and support institutions both within and outside the cluster.

A crucial task of a CDA is to understand the linkages among the cluster stakeholders. This requires building bilateral trust *with* the cluster stakeholders, in itself which is a time-consuming process. On this basis, the CDA forges trust-based relationships *among* the stakeholders. Such trust building is initiated through discussions, followed by pilot and short-term activities for various combinations of stakeholders as defined by the nature of activity. The CDA must be able to get stakeholders with divergent views to agree on targets and implementation priorities. The CDA must be able to identify all areas where there is significant interdependence among the stakeholders and convince the stake holders that a win-win scenario exists and

that all involved will benefit from such cluster development activities. The cluster ¾stakeholder needs to be familiarized with this paradigm by the CDA through discussion and demonstration. It generally takes three to five years for a non-performing cluster to start performing.

10.3 Attributes and skills of a CDA

Choice of the right CDA is critical for the success of the programme. It has already been pointed out that the CDA should not be a stakeholder in the clusters. The CDA's only "business" interest is the overall development of the cluster. Experience shows that the CDA should preferably be in the late-20s to late-40s, physically capable of travelling a lot and have strong leadership qualities. The CDA should preferably be able to communicate in the local language. Finally, a CDA needs to be stationed in the cluster for the project duration, and may need assistants or advisers.

In addition, the CDA should have the following attributes and skills:

'Willing soul': The CDA should be hard-working to achieve the objective of developing the cluster, always exploring new ideas and methods to realize them and is, eager to take responsibility. This also sets a good example to the stakeholders. A CDA who just does a routine job will not generate enthusiasm among the stakeholders and will spread a negative message in the cluster.

Communicator: The CDA should be good at interaction and communication with a wide range of personalities. (S)he should be able to pick up and connect various clues fast and create the best possible combinations of stakeholders to whom (s)he can assign the execution of activities. He/She should be good at leading meetings. Non-verbal communication and an understanding of the local (business) culture may be as important as knowing the local language.

SME expert: It is useful for the CDA to understand the production process undertaken in the cluster, but *familiarity with SMEs* is essential.

Conflict resolver: For a successful win-win scenario, the CDA should be able to identify the symptoms of conflict among stakeholders, understand its roots, assess its negative effects and solve conflicts. The CDA should of course not suppress the 'creative conflict' which is part of competition.

Delegator: Over time, the CDA needs to multiply the number of successful activities. Increasingly, the stakeholders must be drawn into the execution of these, taking on responsibilities. The final objective is of course that all responsibilities are taken on by the stakeholders themselves. The CDA should therefore be capable of identifying good leaders and implementers, and of delegating responsibilities to them.

Negotiator: To maximize adherence to the principles of cluster development - demand focus, pro-active attitudes of stakeholders, participation, etc. - the CDA will have to negotiate with the stakeholders to arrive at a group consensus during every step of the programme. This requires strong negotiation skills.

10.4 Working conditions

The CDA should enjoy a reasonably high degree of administrative and financial autonomy to respond quickly and effectively to the needs of the cluster. Administrative freedom includes freedom to meet and communicate with any cluster stakeholder – private and public, visit places outside cluster, organize formal or informal meetings, choose local and at times cluster-preferred consultants and service providers, etc. Financial autonomy includes freedom to support pilot activities up to an agreed limit, incur a minimum cost of communication and travel, etc.

The CDA should have a mandate to liaison with multiple organisations, even if they are competitors of the implementing agency. Otherwise, the neutrality of the CDA will be questioned and the CDA will be equated to a BDS provider who merely sells services.

10.5 The CDA and different cluster stakeholders

The type of interventions that a CDA may have to undertake will vary across clusters. In what follows we suggest the types of activities that CDA might initiate with different cluster stakeholders.

10.5.1 Public institutions

These may include regional departments of industry ministries, regional industrial promotion organisations, industry-specific export promotion agencies, etc. These organisations usually coordinate a range of support programmes for industrial development, may provide business development services and may be involved in initiating policy reforms. Their effective role in the cluster may be constrained by incomplete understanding of a cluster by field staff, ineffective communication and passivity in the face of changes which affect competitiveness.

The CDA should help these institutions to become more pro-active and effective by organizing regular interactions between local staff (of these institutions) and selected representatives of the cluster, visits of local staff to enterprises to understand their actual working, dissemination of relevant information on services available to potential firms, reorientation of services available in accordance with the needs of the cluster, etc.

10.5.2 Technical institutions

These include R&D institutions, laboratories, training institutes, university departments, vocational institutions, etc. They have expertise with regard to enhancing productivity, improving work environment, creation of new products, marketing, training, etc. But often these institutions have little contact with the business world and their approach may be heavily top-down. Also, the size of the institutions can inhibit linkages with SMEs. After initial dialogue and sensitization visits, the CDA should strive to develop the following services by the technical institutions:

- Technical skill upgrading of workers and owners at suitable location and time
- Advisory services for SMEs;
- Training of consultants;
- Regular dissemination of new techniques;
- Research facilities adapted to industry needs;
- Creation of a special industry-institute interface to promote the above.

10.5.3 Industry associations

A pro-active industry association can very effectively spread the principles of cluster development: it can negotiate financial support for the creation of infrastructure or other development initiatives, introduce BDS providers, organize technical training programmes for its members and the broader community, promote networks for doing group business, etc.

10.1: Active industry associations

The Industrial Chamber of Uruguay has participated in the creation of 11 export consortiums of different characteristics in the sectors of fine wines, leather, wood, processed foods, graphics and pharmaceuticals, incorporating some 180 firms. The National Confederation of Agriculture and Small and Medium Industries in Italy has contributed to the creation of approximately 40 commercial and productive consortiums. It has created an extensive professional structure of technical and administrative support and stimulated the creation of service centres. The Tirupur Exporters Association has created infrastructure and institutions suiting their own requirements like an inland container depot (ICD), export processing zone, language school, TEA-NIFT, etc.

In many cases, such tasks are not undertaken and the association may be dormant and non-functional. The CDA can enhance the role of the industry associations in cluster development by assisting them to:

- Identify mega projects that they can implement or promote through a suitable body and/or agency for the development of the cluster;
- Develop business plans for the promotion of horizontal and vertical networks;
- Identify and present common policy issues to government;
- Become a business information centre.

Apart from revitalizing old associations, the CDA can help to create new ones, if this is desirable in the context of promotion of that cluster. The latter task starts with discussions with local functionaries, small group meetings, meetings with conflicting personalities, visits to performing clusters of similar products (especially a proactive local association, if there is one), lectures by experts, facilitating appointment of capable managers, suggesting an association agenda, introducing a financial monitoring system, etc.

10.5.4 Financial institutions

Financial institutions include development finance institutions and banks. These can have various financial schemes for SMEs, SME networks and associations. In underperforming clusters, they often lack sufficient information (at times due to inadequate manpower) about (the needs of) the SMEs. Bad experiences with defaulting SMEs may also be a problem.

If the SMEs themselves are not capable to change this situation, the CDA can initiate a dialogue, organize pilot activities, which satisfy, help to improve capacity for handling small loans in the institutions and support the identification of new schemes for the benefit of the cluster.

Joint activity for developmental finance in a cluster

The UNIDO Cluster Development Programme in Jaipur (India) developed a Mutual Credit Guarantee Fund Scheme with the support of the Small Industries Development Bank of India (SIDBI) for financing micro enterprises in the artisanal hand-block printed textile cluster of Jaipur. This new financial scheme does away with the need for collateral, which micro enterprises cannot offer. The UNIDO CDA helped to convince SIDBI, the State Bank of India (SBI) and other national banks to implement this innovative scheme. After Jaipur, the scheme was extended to the artisans of leather cluster of Ambur in the state of Tamil Nadu.

10.5.5 Non-governmental organizations

In the absence of an association, an NGO can sometimes serve the purposes highlighted above, but preferably only for a short period. NGOs can also serve as effective forums for SME networks, especially micro-units. The capabilities of NGOs vary. CDAs may encourage NGOs to:

- Assist in the formation of networks;
- Establish self-sustaining financial schemes to support projects based on common initiatives;
- Provide training and coordination support to cluster development;
- Act as intermediary for some government financing schemes;
- Provide technical and management advisory services, etc.

10.5.6 Networks of firms

If needed, a CDA can develop various networks of firms (with a purpose) that can contribute to cluster building. Table 10.3 briefly shows how they can be part of a CDA's work.

Table 10.3: Types of networking

Description	Benefits	Obstacles
Acquisition of raw materials and services through joint negotiation with suppliers	Discounts on bulk buying	Members who do not fulfill business commitments, coordination costs
Joint contracting of specialized consultants	Access to knowledge which is not accessible to individual firms	Members who do not fulfill business commitments, avilability of suitable consultants
Creation of a new market through jointly developed market studies, catalogues and promotional activities	Costs are shared and the externalities of reputation building in new markets are internalised	Coordination costs, fear of opportunistic behaviour
Contracting commercial managers for each of the firms in a specific market	Costs are shared, increased knowledge of the market	Fear of opportunistic behaviour by members
Joint production, each firm manufactures sub-parts or components that later will be assembled and commercialized	Economies of specialization	Substantive resource commitment by firms that has value only if the network survives, members who do not fulfill business obligations, coordination costs
Joint R&D projects	Costs are shared and the externalities of new knowledge generation are internalised	Fear of opportunistic behaviour by members
Joint provision of technological services (quality certification, laboratories, etc.).	Scale economies and specialization economies are overcome	Coordination costs, fear of opportunistic behaviour, investments in specific activities hard to recoup

10.5.7 BDS providers and network development agents

BDS providers provide various specialized services. Network development agents (NDAs) are professional network managers. They are extensions of the CDA for the implementation of specific activities when programme activities are expanded, and the CDA should give high priority in identifying them.

10.6 Changing role of the CDA

Role of CDA changes over time. There is no hard and fast rule for change. It is typically cluster dependent. In a perfect situation, a successful CDA should make him/herself redundant by the end of the programme. Ideally, therefore, a CDA should try to move out of activities as soon as the stakeholders begin to identify the CDA as a “business need” and

are willing to invest for the same. Over time, the CDA must concentrate more on strategic and critical activities. Since the process of development will continue after the programme, the most critical activity of the CDA is to create professionals and institutions capable of continuing to support this process in a market framework. Below, an attempt has been made to represent the changing focus of the work of a CDA over a period of four years – a fairly standard period for cluster intervention - in a systematic manner. Practice however shows that activities often overlap, and the actual time frame for individual activities depends on the nature of the cluster, the relationships among stakeholders and external development that may intervene in the cluster building process.

In the *first phase*, the emphasis will be on building contacts with owners of principal and support firms, BDS providers, office bearers of associations, etc. After building a relationship with the principal and support firms and their associations and understanding the pressure points of the cluster, the CDA does the same with the support institutions, relevant government departments and BDS providers (s)he then starts the formation of new networks and the training of NDAs; and also tries to revive non-performing associations.

In the *second phase*, the CDA should introduce NDAs in the networks and revived associations organize short term activities for old and new networks; give support institutions, policy makers and BDS providers clearly defined roles in activities and help to stimulate a pro-active attitude among stakeholders. This is the phase for planning and starting the thought process and feasibility studies of long-term activities such as infrastructure building and proposed policy changes.

From the *third phase* onward, the CDA should pass on the responsibility for direct interaction with firms, BDS providers, institutions, etc. to association leaders and NDAs. It is also time to start working on strengthening or creating an umbrella forum, association or institution that can take over the role of the agency after the end of the project.

In the *last phase* of his/her presence in the cluster the CDA should only provide guidance on major issues, such as the creation of new infrastructure or policies, and make sure of a smooth transition of management to the NDAs and the association/ umbrella forum representatives.