

CLUSTER DEVELOPMENT: THE INDIAN EXPERIENCE

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Evolution of Clusters

Birds of the same feather, flock together. This must have been the dictum that brought similar enterprises together through the ages. The process of clustering of enterprises and economic activities has been happening across the globe; only the type, scale, scope and timing have been different. In the early stages the driving factors¹ were

- proximity to raw materials
- presence of customers and markets
- presence of skilled labour
- presence of business development or support services

The process of clustering envisages coming together and acquiring some sense of economies of scale as well as acquisition of competitive advantage. It also signified an early stage symptom of industrialization. Once the member entities in a cluster have grown big then the cluster is perhaps less relevant; when they were small they needed the support of each other to achieve economies of scale and the competitive advantage. Developing countries need to look at this process and carefully nurture clusters; this is one of the methods of ushering in industrialization, economic development and growth. India, like other developing countries have been giving fair amount of attention in this direction.

Context of SMEs in India

Small and Medium Enterprises [SMEs], through their ubiquitous presence have a significant role in the economy. They are responsible to usher in the industrial culture and the process of industrialization. In the Indian context they contribute a significant part of the GDP. Hence there is need to promote SMEs and clusters.

SMEs by virtues of their structures have some basic inadequacies¹:

- an SME is very often too small to capture the market opportunities because of the sub-optimal plant-capacity, quality-standards, procurement and marketing capabilities.
- Unable to achieve economies of scale
- Size does not permit investment in training, technology, quality, market intelligence etc. Nor is it feasible to achieve job-specialisation, division of labour, innovation etc.
- Because of the continuous struggle for survival, owners and managers are generally focused on routine matters; they lack long term perspective.

In the context of opening up of the economy the challenges facing the SMEs have only increased. To be competitive in the global context, they need to fight technological obsolescence, poor product-quality, information deficiencies, market-linkages² etc. Any

initiative on cluster development has to address all these issues; only then the initiative has any chance of being successful.

Genesis of Cluster Development in India

Realizing the importance of small enterprises in the development and growth of the economy Govt of India constituted an Expert Committee on Small Enterprises in 1996 headed by Prof Abid Hussain³. This Expert Committee advocated cluster-support policies as the fulcrum of the small enterprises development. Earlier in 1989, State Bank of India had initiated a technology up-gradation program targeted at select clusters⁵. In 1992 Small Industries Development Bank of India had initiated technology focused cluster development program. UNIDO initiated its Cluster Development Program in 1997. Small Industries Development Organisation[SIDO], an arm of the Govt of India started its program in 1998. NABARD [National Agricultural Bank for Rural Development] had initiated a program called National Program for Rural Industries in 1999. Salient features of these initiatives are summarized in Table-1.

Table-1: Salient Features of Cluster Development Initiatives⁴

Initiative	Salient features
Project UPTECH By State Bank of India	<ol style="list-style-type: none"> 1. Principal concerns were [a] Technological up-gradation and [b] greater share in the global markets 2. The main purposes were [a] optimal utilisation of human resources [b] large number of firms in a cluster and [c] spread effect of the initiative. 3. Two major clusters were [a] Glass industry in Ferozabad and [b] Auto component and Light Engg Industry in Bangalore 4. Glass Industry in Ferozabad was characterized by [a] highest number of people in the industry [100,000] anywhere in the world, [b] low productivity, high wastage and [c] poor working conditions. Significant improvement in productivity was achieved through technical up-gradation of the processes and practices; pollution levels were brought down and working conditions improved. 5. Auto-component & Light Engg Industry cluster at Bangalore consisted of various engg units that catered to major brands like TVS, MICO, Ashok Leyland, TAFE, Bajaj Auto, Maruti etc. As a result of the technology up-gradation initiatives, productivity went up by 30 % and cycle-time reduced by 50 %. The firms were able to improve quality of the products and cater to international clients.
Consortia based Interventions of the Govt of Kerala	<ol style="list-style-type: none"> 1. Several handloom enterprises located in Kannur district of Kerala were organized under 4 consortia constituted the cluster. These consortia got a foreign agency to make the enterprises aware of the trends in the foreign handloom market. 2. The consortia mobilized the services of a German agency for productivity improvements, for new products to suit the international markets. They started a showroom at Kannur. 3. Under the initiative of the Govt of Kerala, Indian institutions, Business Development Service Providers, and International support

	<p>agencies started collaborating. The critical areas were supply chain management, better designs, market information etc. The cluster achieved significant progress.</p> <p>4. 160 modern rice mills operated at Kalady in Ernakulam District of Kerala. The capital investment was Rs 280 crores and they made annual turnover of Rs 1000 crores. Rice bran is a bye-product which did not have ready market within the district nor within the state. The rice mill owners formed a consortium to set up a rice-bran oil extraction plant that needed 100 tonnes of rice bran every day at a capital investment of Rs 3 crores.</p>
UNIDO-CDP	<ol style="list-style-type: none"> 1. Objective was to contribute to the overall performance and collective efficiency of clusters. For this purpose various clusters have been identified and supported. 2. UNIDO approach is to make a diagnostic study and working out a need-based program. It focuses on capacity building thro training, participation in fairs/workshops/study-tours etc. 3. UNIDO's experience shows that activating associations, institutions, building trust and social networking are critical aspects for success.

Summarised and compiled by the Author.

Among the various cluster development initiatives, UNIDO Cluster Development Program [CDP] has been the most comprehensive and widespread. It had the following set of objectives:

- To strengthen the competitiveness of selected SME clusters by enhancing collective efficiency and networking.
- To select and disseminate a methodology for cluster development suited to Indian conditions.
- To promote a cluster development movement in India and
- To enhance the contribution of cluster development in the reduction of poverty

The UNIDO-CDP collaborates with the Office of the Development Commissioner, Govt of India and through it large number of national experts and academicians in achieving its objectives. Some landmarks in the implementation of this program are listed in Table-2 below

Table-2: Major achievements of the UNIDO-CDP

1	<p>Seven clusters have been selected on a pilot basis for assistance. These are Jaipur[textile hand-block printing], Pune [food processing], Tirupur [cotton hosiery], Ludhiana [knitwear], Ahmedabad [drugs & pharmaceuticals], Ambur [leather tannery and shoes] and Bangalore [machine-tools]. Secondary impact of this project are:</p> <ol style="list-style-type: none"> a. Several institutions to support CDP have been created; like export consortia, common service centres, SME support institutions etc. b. 1200 enterprises have been touched through this program.
2	<p>In 2002 four more clusters have been added: Bellary [jeans], Kota [knitwear],</p>

	Jullundhar [sports goods], Sindhudurg [food processing] and Chanderi [handicraft textile]. The program also included a new dimension to assess its contribution to poverty-reduction.
3	The program has compiled a database of 380 industrial clusters and about 3000 artisan clusters.
4	More than 600 national experts have been sensitized to the concept of cluster development.
5	An international Joint Learning Workshop has been held in 2002 covering participants from Pakistan, Thailand and Bangladesh.
6	Have institutionalized training of cluster professionals, standardized methodologies and manuals have been developed on various aspects of the program.

Compiled by the author based on the unpublished article: Cluster Development Program India, by UNIDO, April 2005.

Learning from the UNIDO-CDP

Based on the pilot study of the first seven clusters in India some conclusions can be drawn. These can be summarized in four major dimensions.

a. SMEs Growing and Technically Advancing

Internationally the cluster initiatives have resulted in the general growth of the SMEs and their moving up the value-chain. In India, to begin with, most clusters were underperforming and each firm was operating at the lower end of the technological spectrum. Most of the processes employed were labour-intensive. This meant that there is ample scope for productivity enhancement and technological up-gradation. Introduction of IT and ensuring meaningful value-addition at every level are found to be significant challenges for the cluster initiative.

UNIDO was able to introduce IT to the hosiery cluster at Ludhiana⁵ and make significant impact on the cluster; its distance from the rest of the world and the international markets diminished drastically. This made business sense for a cluster embarking upon exports as a main source of revenue.

b. Role of Markets

Market access has always been one of the primary concerns in cluster development anywhere in the world⁶. In India the situation has been fairly complex. Cluster development programs have commenced after the process of liberalization was initiated in 1991 and after India decided to join WTO. Clusters that were operating at fairly high productivity levels – like the knowledge cluster at Bangalore – relished the opening up of the economy. To these firms, liberalization opened up huge opportunities of technological tie-ups, exports and collaborations. To those clusters that were operating at lower productivity levels the opening up meant bigger challenges of global competitiveness. The situation demanded more careful and focused efforts in networking to achieve optimal capacity levels, focussed efforts in technological up-gradation to ensure quality and productivity standards etc. CDP was

able to address these issues through building up awareness, group approach in procurement, business development services, networking with institutions etc.

In the hosiery cluster at Ludhiana, aspirations for the international marketing was created through benchmarking and awareness programs, through buyer-seller meets, through participation in trade fairs etc. These activities enhanced the visibility of the cluster among the buyers, quality improvements were achieved, and finally the export volumes took a clear upward movement.

The pharma cluster at Ahmedabad faced the challenges of up-grading the technical capabilities and achieving internationally accepted standards represented by certifications of ISO, CE Mark, WHO-GMP etc⁷. UNIDO cluster addressed these challenges by creating awareness first through workshops at different levels. The association of the pharma units, IDMA⁸, was roped into this drive; other institutions also joined the effort. Over a period many of the pharma firm of the cluster acquired international standards, reputation and competitiveness.

c. Role of inter-firm relations: Focus on consortia

It is observed that larger and or export firms can play a lead-role as mentors to other members in enhancing quality and in imparting best practices. Very often clusters are created out of similar sized members. In such situations it is imperative to develop a culture of trust and sharing to nurture success of the cluster. Developing social networks and consortium are observed to be one of the primary tasks of the cluster development.

The machine tools cluster at Bangalore had 125 members in 1999. When UNIDO stepped in 1999, there was an ongoing recession and the firms needed to take up aggressive marketing to overcome the recessionary trends. The Cluster Development Program decided to create a consortium of export oriented firms. It carefully selected 56 dynamic firms, that were not competitors, into the consortium and provided them with initial orientation to operate collectively; together they created common warehousing facilities, common web-sites, joint advertising and marketing campaigns etc. These efforts resulted in significant volume of exports besides the consortium making an entry into China in a big way.

Ambur, in Tamil Nadu had a large number of small leather tanneries. They hesitated to access the international market because of their small operation. As part of the cluster development, UNIDO promoted Ambur Leather Technokrafts Export Corporation [ALTECO]. Its mandate was to access both domestic and export markets. Through careful market research and focused marketing ALTECO was able to make a mark in the international market especially China in the next two years.

d. Role of Public Institutions

In the classical theory of Michael Porter's Diamond Factor Model⁹ there is no role assigned to government. In most developing countries it is observed that there is significant role for government in ushering and catalyzing development and growth.

So management thinkers¹⁰ have suggested a modification to the Diamond Factor Model by imputing government as an additional factor. UNIDO's Indian experience corroborates the view that government and its agencies have a significant role to play in development and growth.

It is also observed that in clusters where most of the enterprises are underperforming the gestation period to see results are prolonged: between 3 to 5 years. This is more so among the artisan clusters. This may disillusion the participating members of the cluster and hence it is essential to identify areas that would yield results quickly so that the cluster development initiative does not lose its credibility. In such situations public institutions can take up proactive steps to enhance the viability of the cluster initiative. Major role of the public institutions is observed to be in helping create the infrastructure.

It is also learnt, through experience, that cluster development strategy must include a clear-cut exit strategy so that the member enterprises do not develop a dependence syndrome.

The Road Ahead

The developmental challenges facing India is myriad and manifold. Cluster development is one of the means of achieving rapid growth and hence the necessity to upscale and multiply the efforts. The insights from the initial years experience of cluster development leads to some critical inputs¹¹.

Mentors or Technical Advisors. These are experienced professionals who would lead the initiative in each cluster. A Technical Advisor would need to be knowledgeable and experienced in specific domain area; besides he should be a good negotiator, a good PR man, a good facilitator, a good organizer and above all a good strategist.

Business Development Service Providers. The services required are varied like marketing, human resources, general management, finance, policy advisory, credit linkages, R&D, technology, skill-up-gradation, environment, intellectual property, design, infrastructure etc. All these do not generally come from one source; so there must be a panel of experts who could be roped in as required.

Social Service Providers. These are HR professional who guide and help the clusters address issues related to the society like literacy, occupational health and safety and similar other social issues. Clusters are part of the society and hence they need to address the social issues. Addressing the social issues enhances the viability and long term sustenance of the clusters.

Such talents as listed above – in terms of individuals and organizations – are not easy to find. This calls for careful nurturing of professional talents and networking with a whole range of institutions and organizations to achieve the result. Many of these activities are not very profitable, so it will be desirable and essential to create non-profit, but self-

sustaining organizations to spearhead the cluster development initiatives. The infrastructure and seed for cluster development will be creation of a cluster of such non-profit organizations.

End Notes

1. A seminal article on the UNIDO experience in India has listed some of these basic facts. The article is *Cluster Development Program, India prepared by UNIDO Cluster Development Programme, New Delhi, April 2005*.
2. The primary focus in eradicating poverty is assigned to achieving market access and opening up of the economy by Jeffrey Sachs in his book: *End of Poverty, Penguin 2005*.
3. *Report of the Expert Committee on Small Enterprises, chaired by Prof Abid Hussein, Govt of India, 1996*.
4. The table owes significantly to the data and observations contained in the *Cluster Development in India: The White Book* by Prof Y K Alagh, Founder Chairman, Foundation of MSME Clusters.
5. References to the clusters at Ludhiana[hosiery], Ferozabad [Glass], Bangalore [Machine Tools]and Ambur[Leather] go to Y K Alagh: *Cluster Development in India – The White Book, Foundation of MSME Clusters*. Detailed case write-ups are also available in Dr Tamal Sarkar: Working Together Works – Cluster Case Studies, MSME Foundation, New Delhi 2006.
6. *Jeffrey Sachs: End of Poverty, Penguin 2005*. The basis of economic revival, Jeffrey Sachs shows, is through market access and opening up of the economy, whether it is Bolivia, Poland, Russia or China. Through case-illustrations he explains the trials and tribulations of the process of providing market access.
7. ISO certification is for ensuring certain quality standards; ISO stands for International Standards Organisation. WHO-GMP stands for World Health Organisation Good Manufacturing Practices; this is also a process of certification. CE-Mark stands for
8. IDMA stands for Indian Drug Manufacturers Association; an association of firms promoted by Indian entrepreneurs.
9. Diamond Factor Model propounded by Michael Porter specifies four factors as basic for sustainable development and growth: [a]Context of Firm strategy and rivalry [b] Demand conditions [c] input Factor conditions and [d] Related and Supporting Industries. *Michael E Porter: Competitive Advantage, HBS Press, 1985*.
10. There has been studies indicating the necessity to include government as a basic factor in the diamond factor model of Michael Porter. One such article is *Wickham, Dr Mark; Regional Economic Development: Exploring the 'Role of Government in Porter's Industrial Cluster Theory*. CRIC Cluster Conference: Beyond Cluster – Current Practices & Future Strategies, Ballarat, June 30 – July1, 2005.
11. *Dr Y K Alagh: Cluster Development in India : The White Book, Foundation of MSME Clusters, New Delhi*.