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**Fostering Competitive Clusters in Asia:  
Towards an Inclusive Policy Perspective**

**Keshab Das**

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## **List of Major Works**

1. *Policy and Status Paper on Cluster Development in India* (co-author), Foundation for MSME Clusters, New Delhi, 2007.
2. *Indian Industrial Clusters* (editor), Ashgate, Aldershot, UK, 2005.
3. *Growth and Transformation of Small Firms in India* (co-author), Oxford University Press, New Delhi, 2001.
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5. “Electricity and Rural Development Linkage”, in H. Panda (ed.), *Governance of Rural Electricity System in India*, Academic Foundation, New Delhi, 2007.
6. “Uneven Development and Regionalism: A Critique of Received Theories,” *Economic and Political Weekly*, 39 (45), 2004.

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# Chapter I

## *Introduction*

With widening intra- and inter-regional inequality in growth, especially, in many east and south Asian countries, small and medium enterprises (SMEs) hold much promise for spread of economic activity across space generating income and employment. The ability to respond effectively to fast changing global market signals through remarkable resilience has been noted as a potential attribute in *achieving* SMEs, mostly in the industrialised nations of Europe. It has also been recognised that firms in a cluster tend to benefit not only from economies of agglomeration (scale and scope) and social embeddedness but have shown promptness to be innovative at the unit level itself. This positive aspect of industrial clusters in inducing technological dynamism in SMEs has also resulted in the units gaining confidence in participating in the global market, often facing tough competition from established large domestic firms or MNEs. This interaction in the global arena in both technological and trade spheres, seen as a crucial characteristic of internationalisation, has important implications for SMEs in Asia, particularly, in the late industrialising and chronically lagging regions. It is now widely observed that cluster level intervention could be the most effective step towards encouraging and strengthening elements of competitiveness in the local SMEs. Promoting industrial clusters is seen as an important strategy of development intervention, especially, in developing nations; there has been a remarkable surge of efforts by both global institutions (UNIDO, ILO, UNCTAD, World Bank, to mention only a few) and national/sub-national governments.

Almost quarter of a century now, one of the important instruments of effecting development policy that has held sway over the thinking and action, in both developed and developing economies, has consistently been SMEs. The interest in the role and ability of SMEs (or, as in many developing countries, including the so called microenterprises) as a powerful change agent has been on the rise and has found constituency in economies and societies diverse in distinctive ways. This is especially remarkable as by the early 1980s small enterprises were described as destined to 'wither away' due to their scalar disadvantages (Anderson, 1982). In fact, it is being increasingly and convincingly argued, mainly during the 1990s and after, that small enterprises are not only here to stay but could facilitate a meaningful exchange of ideas and resources benefiting nations through the creation of significant opportunities for productive employment, income and trade.

In most developing economies, whether in Asia, Africa or Latin America, small enterprises play a crucial role in absorbing the growing labour force (often suffering 'disguised' or underemployment in the lagging farm sector) and help reduce inter- and intra-regional disparities in growth. Moreover, in a substantive sense, small enterprises have been contributing to the sustenance and growth of large enterprises through an array of subcontracting and jobworking arrangements. That small enterprises also have graduated to and emerged as important contributors to national export earnings have been evidenced in a large number of countries, especially since the 1990s.

As is well documented, the small firms displayed an amazing ability to survive and grow during the crisis decades of the 1970s and 1980s, even as large vertically integrated plants with assembly-line production systems and Taylorist management practices were hard-pressed for doing business. The unfavourable and unpredictable demand conditions had sapped the large enterprises of their ability to 'adjust' or 'reorient' their organization of production and shop-floor management due to factor indivisibility and excessive division of labour or specialization. It was the inherent rigidity of the system of production and irresponsiveness to market signals that brought out the limits of the Fordist form of production organisation. There was also the additional burden of catering to the niche markets which entailed distinguished approaches to manufacture and market.

During these trying decades, the small enterprises, as was eminently brought to notice by Piore and Sabel (1984), in certain western countries and even Japan could withstand the pressure of an uncertain market, through an apparently queer strategy of 'flexible specialisation' (or, 'flexibility', as often referred to as in the subsequent literature). The possibility and ability of small enterprises to be resilient (in terms of responding to changing market characteristics) could be effected through multi-skilling, redesigning shop-floor management and maneuvering available techniques of production to be multi-purposive. Evidently, these shifts (in the labour / production processes or management) could be facilitated through an adoption of microelectronics; adhering to such management practices as just in time (JIT) or total quality control (TQC); or upgrading to move up in the value chain. Notably, most of these small enterprises which performed well even in the competitive export market, were engaged in such traditional commodities as leather products, furniture, tiles, jewellery, decorative furnishings and so on.

In addition to the flexibility that conferred an advantage to small enterprises (over their large counterparts), it has been widely recognized that a certain form of production organization, namely, industrial clustering, catalysed firm performance. Industrial clusters not only greatly facilitated flexibility but also contributed immensely to productivity and market expansion through the synergy of networking and cooperation between diverse stakeholders.

## **Objectives and Plan of the Study**

Within this broad context, the central research focus has been to assess and delineate regional/ national strategies to enhance competitiveness of Asian SMEs, with reference to improving effective participation in the process of internationalisation. The following three sub-themes, interrelated as they are from a regional development perspective, have been pursued:

- *Enhancing SME Cluster Competitiveness through Internationalisation*

An attempt has been made to understand the nature of advantages and disadvantages of vigorously pursuing SME internationalisation efforts as the key strategy to cluster development. The basic purpose has been to highlight the rise of global production system as a major mechanism by which clusters in developing economies are induced to participate in the global value chain, wherein the benefits have been restricted to a few units and in a selected few sub-sectors. The purpose is also to demystify the preponderance of the global market for micro, small and medium enterprise (MSME) clusters in Asian developing economies.

- *Local and Regional Strategies (mainly, locational, technological and fiscal) for SME Cluster Promotion in Asian Countries*

The exercise focuses on commonly pursued cluster development strategies at the local or national levels, as often influenced by global donor agencies. This has been attempted by gleaning through the available research on distinct strategies pursued by Asian nations which are likely to have contributed to the building up of local technological capabilities and enhanced market access. This will also include efforts at developing competitive strength at both domestic as well as global market space. A specific emphasis has been to appreciate policy efforts made by local/ national governments and supportive measures taken by local industry consortia in boosting the local clusters in the larger external market space. It would be a step towards identifying generalisable problems and prospects facing SMEs in clusters in the Asian region.

- *Industrial Clusters in Rural Regions and Small Towns in Asia: Potential and Challenges*

The last component of research devotes to an understanding of one of the most neglected aspects of Asian industrialisation, namely, functioning of small firm clusters in rural regions and small towns, often specialising in the so-called traditional and artisanal sectors and constrained by access to infrastructure, credit,

technology and markets. Through a perusal of case studies in Asian developing countries, the specific constraints facing the micro and small enterprise dominated clusters have been identified as also the potential of these so-called low-end clusters. The primary thrust has been to suggest arrive at approaches that would infuse technological dynamism and help expand markets for the clusters thus located in rural belts and those which draw upon local resources for their growth.

The research has been based on a comparative analytical perspective and draws upon a critical review of the available literature. This has benefited from interactions with concerned scholars, both from within the IDE and other institutes and organizations.

The study is organized as follows. In Chapter II, a detailed critique of the concept of clusters has been presented with a special emphasis upon the developing economies context. Given the much-hailed potential of clusters in turning around both the small business and the local economy dynamic, this chapter also attempts a close look at the key drivers of clusters. Illustrated with examples across the globe, this discussion identifies strategic clues that could have wider scope of replicability, especially, in case of formulating cluster strategies for Asian nations.

Chapter III delineates and critically evaluates a range of dominant approaches in cluster development as being practiced in Asian nations, with particular focus upon the ASEAN, East Asian and South Asian countries. A specific dimension of cluster development that shall be dealt with in some detail concerns the scope of and benefits from internationalization. This is also to underscore if outward-orientation of clusters, mainly through merchandise trade and participating in the global production networks (GPNs), has implications for value addition and technological progress. In Chapter IV, a different set of cluster strategies that underscore the issues and potential of clusters in rural and semi-urban regions is discussed. Some of the remarkable experiments (as in Japan, Thailand and other Asian countries) in revitalising / reorienting villages or small towns into clusters with dedicated products have immense relevance for most Asian clusters in non-metro regions. Possibilities and constraints in extrapolating clues from these experiments to be useful for other Asian nations are also discussed here. Chapter V attempts to bring together various structural and other challenges facing cluster promotion in Asia as also discrete issues that need innovative policy attention. The idea of creation of a Cluster Grid is introduced here. The concluding chapter, while briefly summarizing main arguments / issues in previous chapters, makes a strong case for an inclusive policy perspective and collective initiatives in a range of areas towards cluster development in the pan-Asian context.

## Chapter II

### *Industrial Clustering in Developing Economies: A Conceptual Critique*

Even as clusters have become one of the most familiar terms in both academic and policy circles, focusing developing economies particularly, concerns have emerged regarding the conceptual rendering of the same. It is as pertinent to the discourse on the efficacy and limits of clusters as to the designing of policy instruments that the specificity of this form of industrial organization be adequately understood. This chapter attempts to sift the ‘popular’ interpretations from the theoretical underpinnings of the apparently commonplace concept.

It needs to be recognized that 118 years ago the neoclassical literature (led by Alfred Marshall’s classic, *Principles of Economics* published in 1890 and, subsequently, *Industry and Trade* published in 1919) on agglomeration economies, economies of scale, external and internal economies and dynamics of trade had offered significant insights into the advantages of industrial districts, or as he referred to it as “the concentration of specialized industries in particular localities”. Industrial districts, it was observed, gave rise to external economies that particularly favoured small enterprises through creating opportunities for easy access to pool of skilled labour, subsidiary trades and communications networks. As Marshall put it, “so great are the advantages which people following the same skilled trade get from near neighbourhood to one another. The mysteries of the trade become no mysteries; but are as it were in the air. Good work is rightly appreciated, inventions and improvements in machinery, in processes and the general organization of the business have their merits promptly discussed; if one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas. And presently subsidiary trades grow up in the neighbourhood, supplying it with implements and materials, organizing its traffic, and in many ways conducing to the economy of its material” (Marshall, 1974: 225). Localization of enterprises was also stated to promote the economic utilization of expensive machinery by small firms due to “the regional concentration of aggregate demand for a specialized product” (Lazonick, 1991: 151). Gradually, as skilled workers perfect and pass on their crafts and develop higher forms of machinery, localization also leads to strengthening the productive resources within the industrial community.

Clusters are generally understood as a certain form of production organization wherein firms engaged in a given sub-sectoral activity (manufacturing or services) are concentrated in a specific location; these enterprises have the advantage of support services and

institutions. Basic to the debate on clustering, exists a set of positive attributes of territoriality that induces firms, more so SMEs, to be part of a collectivity, irrespective of the fact of inter-firm competition / rivalry (Marshall, 1974; and Hotelling, 1929). The firms derive benefits of agglomeration economies in the form of increasing returns to scale. This is best explained by Marshall, whose insight on industrial district has continued to remain most relevant till date. For him, an industrial district is a ‘socio-territorial entity’ which has the advantages of i. knowledge externality or spillovers; ii. intense local markets that induces upgradation of the factor and product quality; and iii. increased possibility of linking with large local markets and trade. Moreover, following Coase (1937), it is understood that clustering also contributes to lowering of transaction costs. Whereas external economies of scale (e.g., due to better transport infrastructure, relocation of component suppliers and other support businesses close to the cluster) are essentially cost-saving and helps expand markets, the economies of scope entails cheaper production of a wider range of products and services (Chandler, 1990; and Alcorta, 2001).

The rise and dominance of the Regional Science association for the most of post-War decades spanning 1950s to 1980s had further consolidated the idea of agglomeration of firms in a manner that got trapped in an “economistic” framework. The treatment of clustering or industrial agglomeration overemphasized approaches steeped in strong neo-classical tradition wherein scale economies, transportation costs and linkages in physical production assumed significance. The positivist approach, however scientific in design, remained inadequate to capture, in a realistic manner, the emerging functional dynamics of organization of production (Das, 1995: 37). As it transpired, “The whole range of analyses of the above type is based on the most unrealistic assumptions, such as, uniformity of transport surface; uniform distribution of the consuming population; homogeneity of structure and performance of firms and sectors; and differentiation of regions only on the basis of size and distance, not structural composition...The obsession with the scientific positivism of the neoclassical approach has, in a sense, disabled locational analysis from going beyond pattern to process, which involves coming to terms with the issues of perception and motivation” (Das, 2004: 4918) .

Whereas by the mid-1970s, if not earlier, pointed criticism of the neoclassical (and those emanating from the regional science school) theoretical constructs had been widely evident, it was not until the late 1980s and early 1990s that the ‘reinterpretation’ of agglomeration of firms or industrial clusters / districts had infused fresh and meaningful insights. The most impressive *re-rendering* of the Marshallian industrial district came from Becattini, who very cogently observed it to be “a *socio-territorial entity* which is characterised by the active presence of both a community of people and a population of firms in one naturally and historically bounded area. In the district, unlike in other environments, such as

manufacturing towns, community and firms tend to merge” (Becattini 1992: 38; emphasis ours). In fact, by incorporating the definitive role of *extra-economic* factors, particularly the social, in the analysis of industrial clusters, a realistic appreciation of the dynamics could be made plausible, using a multi-disciplinary framework, as distinctly different from the genre of writings on spatial economics as skillfully pioneered, for instance, in Fujita and Thisse (2002: Chapter 8, in particular). The renewed interpretation would come to be strengthened subsequently by such relevant sociological concepts as social embeddedness, trust, mutuality and networking between firms and also between firms and a variety of ‘cluster stakeholders’. With this infusion of fresh thoughts and the trickle of cases from across a few countries (including from Asia), the notion of clusters has not only moved far ahead of the confines of the neoclassical idea of agglomeration economies, but also undergone notable transformation.

In fact, much of the new writings were forthcoming mainly from the non-Anglo-Saxon school; the Italian, French and Spanish scholars who enquired into and established the interface between industry and urbanization, or broadly, industry and society. Taken off with the subsequent influential literature on industrial districts / clusters coming up from, for instance, the scholars of the Groupe de Recherche Européen sur les Milieux Innovateurs (GREMI), International Institute of Labour Studies (IILS) (Pyke and Sengenberger, 1992), the Institute of Development Studies (IDS), Sussex (Schmitz, in particular) and, later, Porter (1998), writings on this subject have been forthcoming from numerous scholars, policy makers, development agencies across the globe. Further, there have been hectic efforts at both global and national levels to promote clusters through policy initiatives.

There does not exist a universally-accepted definition of a cluster; however, various definitions are available. In Table 1, a selection of such definitions has been presented. The most widely preferred definition has been that by Porter, especially in the policy-oriented literature.

**Table 1: A Few Definitions of Clusters**

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An industrial cluster is “a geographically bounded concentration of similar, related or complementary businesses, with active channels for business transactions, communications and dialogue, that share specialized infrastructure, labor markets and services, and that are faced with common opportunities and threats.” (Rosenfeld, 1997: 10).

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Clusters are “geographical concentrations of industries that gain performance advantages through co-location”. (Doeringer and Terkla, 1995: 225).

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“The crux of the regionalisation argument is that the regional level, and specific local and regional resources may still be important in firms’ effort to obtain global competitiveness...firms in the cluster rely on unique regional resources and local cooperation when innovating.” (Asheim and Isaksen, 2002: 77).

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“Clusters are geographically proximate firms in vertical and horizontal relationships, involving a localised enterprise support infrastructure with shared developmental vision for business growth, based on competition and cooperation in a specific market field.” (Cooke and Huggins, 2002: 4).

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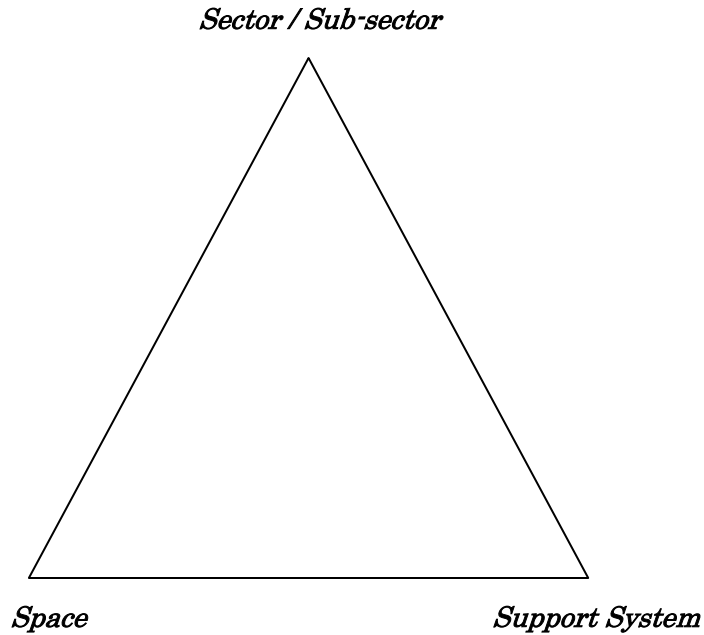
“Clusters are geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery, and services, and providers of specialized infrastructure.” (Porter, 1998: 78).

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## **Distinctive Characteristics of a Cluster**

At this juncture of discussion on the conceptual underpinnings of clustering, it is important to address the ambiguities in defining it and to recognize the basic characteristics of clusters in the developing economies context. Moreover, such an exposition would also clarify the distinctiveness of clusters from that of SMEs *per se*, for instance. For a clearer comprehension, the basic and distinctive features of a cluster can be represented through a simple triangle as shown in Figure 1. It indicates that a cluster has reference to enterprises in a specific and / or closely related sector / sub-sector, co-located / concentrated in a certain geographical space. Additionally, and importantly, the cluster derives its dynamism and competitiveness through a multifarious support system or networks both within and without the cluster.

**Figure 1: Principal Characteristics of a Cluster**



Source: Author's conceptualisation

The sector / sub-sector, eventually, encompasses all the usual dimensions of enterprise, *viz.*, size, technology, employment management, marketing, quality control, product promotion, raw materials and other inputs as land, credit and power. The second characteristics of space connotes a range of regional / locational endowments as level of economic development, types and quality of infrastructure available and the dominant socio-cultural attributes which might impinge upon the nature of entrepreneurship in the locality. The third key aspect relates to both formal and informal support networks / facilities / institutions that may be based upon trust, cooperation or ties as between firms through a subcontracting arrangement, or between various service providers, input suppliers, promoters of trade and other “cluster stakeholders”. From inter-firm cooperation (as reflected through, for instance, the membership of industry associations) the more sophisticated forms of support system include industry-academia-government exchanges, equivalent to the Triple Helix approach.

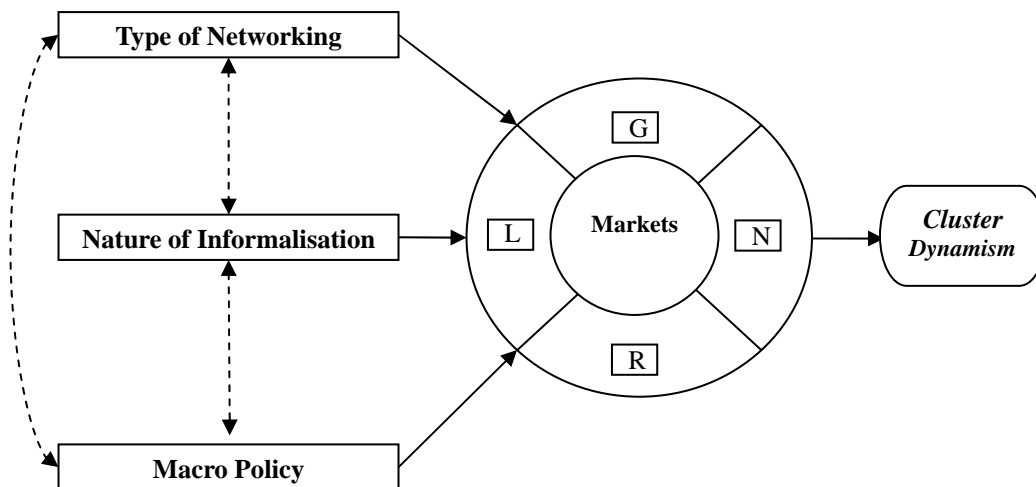
It needs underscoring that by virtue of its multi-dimensional characteristics, cluster promotion must not be limited to enterprise or sector / sub-sector

promotion. In fact, often a mere SME promotion policy is easily confused with that of cluster development. As shall be elaborated in subsequent chapters, such a myopic vision of cluster development (unfortunately dominant though) has substantively / effectively prevented a broad-based intervention framework or what we term as an *inclusive* policy perspective.

Despite the apparently commonplace knowledge about and familiarity with clusters, a careful re-look into the key determinants of cluster performance, especially in the context of developing economies, is an essential requirement towards an informed policy perspective. Figure 2 provides a representation of the key determinants of clusters in developing countries that significantly influence the nature and extent of market access possible by a cluster. In other words, the performance of a cluster crucially depends upon the markets it caters to. We have identified three crucial determinants, namely, i. strength of networks; ii. degree and nature of informalisation; and iii. dynamics and effect of the macro policy environment. In a broader sense, networks (both domestic and global) would include subcontracting / jobworking relations as entailed within global production networks (GPNs) and global value chains (GVCs). Further, networks also imply inter-connections with input suppliers, business development service (BDS) providers, research and development (R&D) organizations, industry associations, trading agencies and the relevant government and inter-governmental bodies. Often firms in a cluster, despite being based in a disadvantaged location and /or engaged in low-tech / traditional activities, have been able to supply to the global market through the sheer strength of networking with international promoters or traders.

A significantly ubiquitous, but conveniently neglected determinant of cluster performance in developing economies, especially, has been a variety of informal processes at work. These informal / illegal / 'invisible' practices would include informalisation of the labour process that thrives on low wages and absence of social security benefits, discrimination / exploitation of labour on the basis of age, gender, health or safety provisions. As discussed elsewhere (see, Galhardi, 1995; Das, 1999 and 2000) the strategic silence on labour issues (e.g., terms of employment, mode of payment, social security, etc.) in the thriving cluster literature is a disturbing development.

**Figure 2: Key Determinants of Cluster Performance in Developing Economies**



Source: Author's conceptualization.

Note: L: Local R: Regional N: National G: Global

Apart from labour, informalisation of the production processes has been widely observed in clusters in developing economies. Instances may be cited concerning the use of sub-standard inputs; unauthorized copying / using of brand names / trademarks; misguiding customers / dealers through exaggerated / false product information; unscrupulous business conduct and non-compliance to regulatory provisions, including avoiding taxes, ignoring environmental or safety norms.

Given the high incidence of such informalisation traits in many clusters in most developing economies in Asia, Africa and Latin American countries, it is possible to visualize these clusters as informal production regimes. In fact, numerous studies on informalisation processes in small firms (whether in clusters or not) have indicated how the perpetuation of a variety of informal practices confer cost advantages to the producers and, subsequently, act as sources of firm / cluster dynamism. A thorough understanding of informality (or, attributes of the informal sector) in clusters is vital to chart out any effective cluster strategy.

Even as clusters are *local* production systems, in an interdependent and globalised business sphere, the macro policy environment directly or indirectly impacts the market potential of a cluster. Although difficult to single out such

*policy-driven* changes, depending upon the cluster in question, at least three areas of policy influence can be noted. First, fiscal or financial incentives that, *inter alia*, facilitate sectoral growth and even trade. Second, policies that result in development / creation of generic physical / economic infrastructure, whether transportation, communications, power or banking. These interventions can transform the clusters' connectivity to markets in a major way. In a certain sense, even in the absence of what are called 'regional' development policies, infrastructure provisioning as a macro policy outcome can generate locational advantages to firms in a cluster.

As shown in Figure 2, it is possible that these three key determinants of market access are influenced by each other though not always in an explicit manner. For instance, a weak / inward-looking macro policy environment could constrict possibilities of networking and / or allow informalisation processes to dominate business in clusters. Nevertheless, these three factors individually and collectively would determine the markets that the firms in a cluster could access. However, in a developing economy context, clusters cater to *calibrated* markets, including at local, regional, national and global levels. The importance of layers of markets existing need to be recognised as the typical cluster literature, enamoured by neolocalism, overemphasizes the global. As any business, with or without clusters, operates with reference to a given or potential market, the performance of a cluster would ultimately depend upon how much of which market it caters to; if it creates a niche for itself in the market, its success could be sustainable.

## Chapter III

### *Internationalization and Other Dominant Approaches*

This chapter focuses on some of the dominant approaches to cluster development as are being vigorously promoted across the world and, in particular, in Asian developing economies. The discussion centres around two sets of major approaches, namely, i. those which substantially draw upon trans- / cross-border inter-linkages in establishing new clusters and / or rejuvenating existing ones; and ii. those based upon strategies mostly designed and operated by national or sub-national governments (or their subsidiaries) or even local para-statal agencies. In short, whereas the former depend upon international operations in promoting clusters (including ensuring a steady market for the participating firms), the latter are 'domestic' or 'local' approaches to support clusters through discrete mechanisms, mostly through facilitating cluster access to concessional loan finance and technology upgradation.

#### **Globalization and Its Implications for Cluster Development**

Coincidental as it may appear, since around the mid-1980s, when a resurgence of interest in cluster potential ensued, there has been a sustained rise in the sphere of international trade and movement of foreign direct investment (FDI), what we would prefer to term internationalization. It has evidently been in response to a deepening of the process of globalization as well as a growing number of nations, particularly in Asia, opting to further open up their economies. These macroeconomic changes entailed, *inter alia*, a decline in barriers to trade, as through lower tariffs, shorter transit periods and encouraging free trade agreements (FTAs) between nations. By easing norms of foreign investment and making certain concessions available to multinational enterprises (MNEs), trans-border business transactions have received a significant boost during the last couple of decades or so.

This has resulted in the relocation and reconfiguration of processes of production, beyond national boundaries, especially by the large MNEs. Encouraged further by the rapid progress in the information and communication technologies (ICT) and reduction in transport costs, the global production systems have emerged in a number of modern and often labour-intensive subsectors in which typically firms are clustered, as for instance, cosmetics, garments, furniture, furnishing textiles, leather goods, pharmaceuticals, computer / electronic goods, automobile parts, agro processing, scientific equipments and so on.

Such trans-border business relocation, especially to developing countries, has also been to take advantage of low costs of labour. As a number of studies have shown, a major issue in these emerging global production systems is their implications for employment; as the demand for new skills rises, it can cause wage gaps and hamper the local economy. However, many others argue that such global production systems encourage promotion of better working conditions and remuneration.

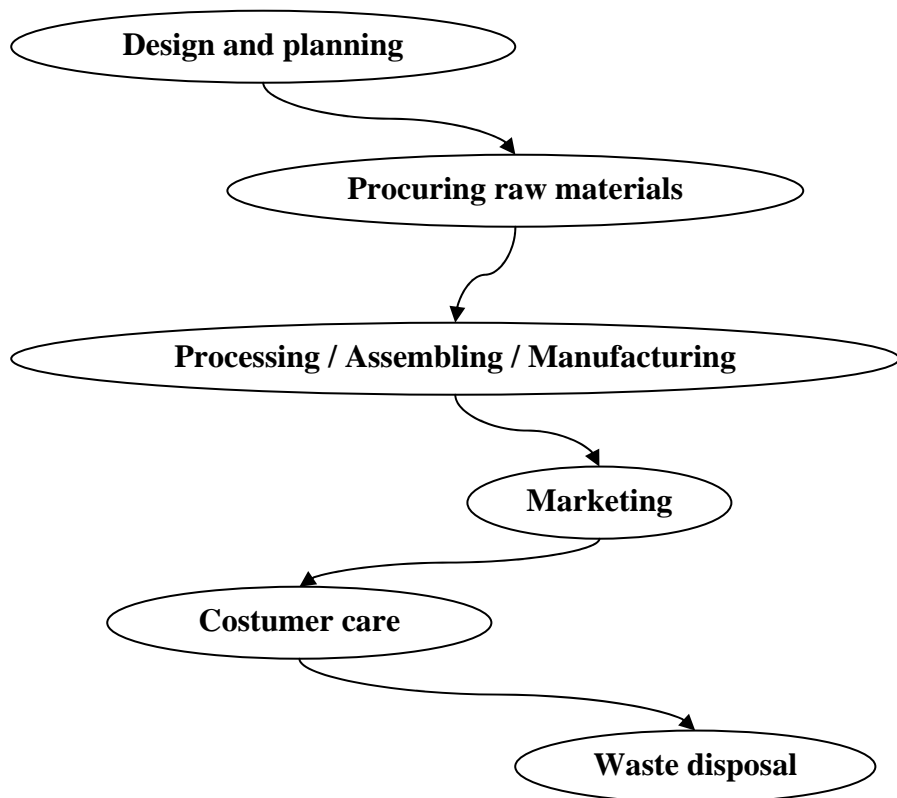
The global production system (GPS), it has been observed, in essence, elevates / positions local clusters into the global value chains whereby competitiveness of the constituent firms improves. The key elements of the process include scope for global benchmarking, learning from buyers / suppliers, increase in the level of cooperation / among participants in the value chain and, importantly, availability of subcontracting opportunities. These create an environment in the cluster that facilitates a healthy governance of decision-making in what is to be produced, what rules of trade would be adopted and what would be the nature of relationship between various cluster actors. The forms of governance would, eventually, vary depending upon the nature of production carried out, hierarchy (vertical / horizontal relations) of production organization, and the type of markets within which these function.

Even during the recent years, with globalizing tendencies spreading fast, the emerging literature, inspired by the early 1990s concept on the 'new economic geography' (Krugman, 1991; and Krugman and Venables, 1990), resonated similar attributes of co-location – the economies of scale and scope - in a broader framework of regions, focusing on the 'dynamic effects' of economic integration between large regions within a country or between nations. It articulated that by encouraging agglomeration of manufacturing activities through creating a conducive investment climate, as reduction of transportation costs, removal of trade barriers / tariffs, formation or development of industrial clusters is possible. Eventually, the new perspectives on industrial clustering have assumed a broader scope encompassing the favourable effects of active (joint action driven) and passive (based on agglomeration factors) economies that facilitate local innovative activities as well (Caniels and Romijn 2004).

Innovation does not, simply, imply Research and Development (R & D), but as Mytelka (2000: 18) explains, it is a "process by which firms master and implement the design and production of goods and services that are new to them, irrespective of whether they are new to their competitors, their countries or the world." Hence, clusters relate to a wide variety of agencies and individuals (specializing in distinct processes or services) who would be loosely 'networked' in finally contributing to the enhancement of the value of the product /

cluster. In spite of competition, the prevalence of trust, reciprocity and mutualism between firms and between firms and support agencies have been found to be the main advantages of industrial clusters (Humphrey and Schmitz, 1998). In this sense, for clusters functioning within a system of innovation, the potential of ‘upgrading’ both products and processes by firms in a cluster is said to improve as they move up in the global value chain (Humphrey and Schmitz, 2000: 3), as represented through the simple value chain model showing a series of business processes, starting with conceptualization to final consumption and even waste disposal (Figure 3).

**Figure 3: A Simple Value Chain Model**



Source: Based upon details at <http://www.globalvaluechains.org/concepts.html> (accessed on February 20, 2008).

The recent literature, often deeply influenced by writings mostly by Porter (1990 and 1998), Foss (1996) and Gereffi (1999) and Gereffi *et al.* (2001) on clusters, is replete with discussions on the issue of enhancing the local innovative capability for ‘moving up in the global value chain’ to achieve competitiveness in the global market. A particularly influential idea (especially for those into cluster policy making or writing on policies on clusters) has been that of Porter’s (1998: 90) diamond which hinges upon the interaction between four key interrelated factors. These are i. factor conditions (cost and quality of inputs); ii. demand conditions (the sophistication of local customers); iii. the context for firm strategy and rivalry (the nature and intensity of local competition); and iv. related supporting industries (the local extent and sophistication of suppliers and related industries). This corroborates the proposition that a cluster thrives on ‘shared resources’ - material, relational, intellectual or institutional - but is, intrinsically, heterogeneous in terms of capabilities of constituent firms to utilize these resources. The case for leading / anchor firms in elevating the cluster to a higher plane of competitiveness or a higher global value chain (GVC) emanates from assigning such a role to the leading firms. The basic suggestion behind Markusen’s (1996) ‘hub-and-spoke’ cluster typology or the very recent Kuchiki’s ‘flowchart approach’ (Kuchiki, 2005) is a manner of affirming the ‘useful’ role of the leading firms in a cluster.

It is important to note, nevertheless, that the dominance of Porter’s approach has been severely criticized, though without much effect. As Martin and Sunley (2003: 29-30) would observe, “In adopting the cluster idea, policy-makers purchase the ‘Porter brand’, and in doing so serve to reinforce the brand’s prominence. What this implies, of course, is that given the power of the ‘cluster brand’, academic critiques such as this are unlikely to have much of an impact on the concept’s popularity”.

So far as clusters are concerned, internationalization of business has posed challenges as well as opened up opportunities for expanding business. In its relatively short history of operation, the experiences of the global production systems have thrown up mixed responses, depending upon the sector and regions in question. In an excellent review, Hayter (2004) points out that the GPS or a global production network (GPN) does not *automatically* ensure upgradation into the GVC, rather much depends upon the deepening of the economic reforms and trade liberalization processes. For instance, in the East Asian NIEs, participation in the global production systems provided firms with an opportunity for transfer of technology, enhancing production capacity into high value-added manufacturing, associated learning processes and, in turn, a rise in factor productivity. However, similar initiatives in the Latin American

countries did not result in an increase in productivity or manufacturing value added. Contrarily, the level of wages declined in most of these countries.

Closely complementary to the GVC analysis is the subsector analysis which, focuses attention on a range of strategic aspects of the subsector (usually known by the specific product). These include detailed examination of product and market trends, specifying the nature of relationship between various cluster actors and, above all, identifying key constraints and opportunities in every sphere of the cluster activity such as finance, technology, markets, policies, production organization and factor inputs. It may be noted that from the viewpoint of policy pragmatism, the subsector analysis can provide vital clues for strategies to be adopted for given clusters; a few instances would be useful to appreciate its relevance.

Over a decade now, the success of some clusters in Vietnam, an otherwise underdeveloped economy with public sector dominating, has drawn attention to the positive role played by the FDI, the private sector and export promotion measures. For example, in Ho Chi Minh City and around, garment clusters have become the second largest market after the EU and the seafood clusters have been the second biggest exporter of shrimp to Japan after Indonesia. With greater reforms, especially, deregulation, encouraging private sector participation and competition, and corporate social responsibility, these and other clusters are poised for a take off in the global market arena (McCarty *et al*, 2005).

As a contrast, the much publicized instance of Cyberjaya (Malaysia's Multimedia Super Corridor) with massive investment in physical infrastructure for the IT industry has not been able to compete globally as it severely lacked in providing a favourable business environment to attract foreign companies. Similarly, its efforts at promoting human development (skilled, innovative professionals) had also been poor; although the recently established Multimedia University has been helpful (Taylor, 2003).

The detailed study (Schmitz and Knorringa, 2000) on upgrading through value chains of the contract manufacturing in the footwear subsector, based on how global buyers compare / assess products from India with those from Brazil, China and Italy, is a pointer to strengths and weaknesses of various clusters in accessing a higher global market share. The importance of such issues as quality, price, response time, punctuality, flexibility in orders and innovative design has been brought out to underscore discrete subsectoral strategies required to be globally competitive. Nevertheless, in recent years, serious concern has been expressed as to the merit of following the GVC route across board; the "downside" of value chain promotion requires emphasis (Knorringa and Meyer-Stamer, 2008: 30-34).

## Key Elements in the Strategy for Clusters Promotion through Internationalization

Although measurement of the performance of a cluster remains an area of substantive research (e.g., Harmes-Liedtke, 2007), a perusal of available literature does indicate a few key elements which have been part of the strategy of cluster promotion through internationalization; these have been said to have contributed to better business, higher productivity and reasonable local development. Table 2 presents some descriptions about an array of identifiable such elements, mainly in the developing economies.

**Table 2: Key Elements in Internationalization Strategy**

Key Elements	Nature of Activities
Networking	Fostering links / partnerships with constituent / external firms, specialized agencies, service providers, institutions (both private and government*) for finance, design, technology, machineries, market information, exports, training, etc.
Inter-firm competition / Leading (anchor) firms	Bringing in new / advanced technology; spreading innovativeness through sub-contracting, sharing competitors strategies, creating scope for market expansion and new work culture
Infrastructure (cluster-specific)**	Provision of common facilities as electricity, approach roads, CETP, CFC, laboratory, etc.
Skill formation (both labour and managerial)	Imparting training to develop specialized skills in handling material, product diversification, shop-floor management, developing accounting practices, etc.
Introduction of global trade norms	Familiarising with regulations such as those directly relevant to the specific activity subcontracted / outsourced.

Source: Based on various documents of implementing agencies.

Notes: \* Contrary to practices in most developed nations, in many developing countries (as in Asia and Africa), business development services (BDS) are often provided by the state or state-sponsored agencies.

\*\* Optional activities

Efforts at creating / inducing new clusters (as different from boosting existing ones) through largely private initiatives, mainly anchor firm driven, have been few. Discussions of such cases in Asia (concerning the role of Japanese anchor firms in China and Malaysia) have been provided in Kuchiki (2005 and 2007). As the clusters are promoted and coordinated by lead firms, the constituent firms in the cluster keep the interests of the former in focus. However, there have been instances of disenchantment with such initiatives as based on leading firms as ‘drivers’ of a cluster; for example, the inability (due to poor local development) to respond to technical upgradation programme has caused the decline of the promising coconut-oil cluster in South Sulawesi, Indonesia (Tulus, 2005). There are instances of attributes of informal economy (as in production and labour processes) present in many numerous clusters in India which constrain clusters to develop in a manner expected in the cluster literature (for cases, see, Das 2005a). Further, lack of assimilation of the foreign enterprise culture with the local traditional culture has been cited as a constraint to the clusters (for example, green battery and bicycle clusters) Tianjin, China (Donggang *et al.* 2005: 111-168).

#### **Other Approaches to Cluster Development: National, Sub-national and Para-statal**

A large number of donor and development agencies at both national and global levels, governments and inter-governmental agencies in both developed and developing countries have been engaged in cluster development activities focusing on certain clusters or regions or both. A common aspect of such diverse interventions, however, has been a fairly intense coordination between agencies and the governments, especially in terms of information sharing on technical and policy issues, formulation of sectoral and regional strategies, promoting synergies in the implementation by combining support services and facilities. Table 3 provides a description of key features of such approaches to cluster development.

**Table 3: Major Approaches to Cluster Promotion in India and Elsewhere**

Key features / Focus areas	Remarks
<p><i>Handholding:</i> Introducing the cluster concept / advantages; conducting subsector analysis / diagnostic studies to identify constraints / opportunities; helping building links between cluster actors and support services.</p>	<p>Uninnovative but somewhat helpful sectorally. Basic infrastructure is usually left out in such interventions.</p>
<p><i>Expanding trade / exports:</i> Through subsector and value chain analysis, actively induce local producers to participate in the regional and global export markets through linkages with production subcontractors, broker subcontractors, regional traders, export agents; familiarizing local producers with global trade norms (TRIPS, GMP, Sanitary and phyto-sanitary measures, ISO and other quality certification, regional trade agreements, etc.)</p>	<p>Sustainability beyond agency intervention has been a concern. Also, levels of education among entrepreneurs / workers set limits in upgrading efforts.</p>
<p><i>Technology / innovation support:</i> Creating technology fund, providing venture capital</p>	<p>Yet to be accessed by and tailor-made for diverse clusters.</p>
<p><i>Industry-Academia-Government linkage (Triple Helix approach):</i> Promoting effective association between the cluster, state and research organizations to ensure upgrading of product quality, diversification and reduction in transaction costs</p>	<p>Still in a nascent stage; potential not yet explored.</p>
<p><i>Local economic development (LED):</i> Emphasizes various aspects of local development</p>	<p>In a preliminary stage of implementation, yet to be broad-based and assessed for effects.</p>
<p><i>Skill formation / training:</i> Initiate various programmes to upgrade / multiply the skill profile of the workers, resulting in higher factor productivity.</p>	<p>Has made good impact (helped product diversification and enhancing labour productivity).</p>

Source: Based on various documents of implementing agencies.

Note: Agencies: National and sub-national governments, financial institutions and NGOs, following upon approaches designed by the UNIDO, ILO, World Bank, EU, etc.

It may be noted that at least in over 50 countries, from all continents, cluster initiatives have been taken up through various schemes covering knowledge-based, traditional (both exporting and non-exporting) industrial and artisanal clusters. However, whereas over four-fifths of clusters covered under these schemes are traditional industrial types, the artisanal clusters have received the least attention (Das *et al.*, 2007: 55-56)

## Chapter IV

### *Promoting Competitive Clusters in Villages and Small Towns: Lessons from Asian Initiatives*

It is both easy and uneasy to find that discussions on cluster promotion strategies have largely been unconcerned with and, at times, oblivious to the potential of the vast domestic market (especially, as it is too large to be missed in Asian countries such as China, India, Indonesia, Pakistan, Thailand and the Philippines) which are often served by clusters from rural areas and also small towns. Numerous such clusters have been catering to these predominantly so-called low-end markets and have devised, in most cases traditionally, discrete ways of marketing, distribution and product promotion. Further, these clusters form the major source of non-farm employment and income that have thrived on dynamic backward linkages in terms of procuring raw materials locally and creating opportunities for various stages of processing at the local places. It is equally important to acknowledge that the size (in terms of number of units and employment) of clusters in these rural areas and small towns is huge in many Asian developing economies. As an example, in India, an estimated over 6000 clusters belong to these categories. Similarly, in China, Indonesia, Sri Lanka, Thailand and many other south-east and south Asian nations, clusters located in villages and small towns account for a significant proportion of total clusters in the respective economies, although no official statistics is readily available on these.

In order to sustain rural / non-metro livelihoods and to strengthen the domestic market – a *sine qua non* of inclusive growth – special policy attention for creating and enabling business environment for the firms in these regions needs no underscoring (APO, 2000). Evidently, in the absence of useful and contextual references in the standard literature, from the occident and even from the UNIDO and ILO, to the promotion of clusters in the artisanal / rural / small town clusters, it is rewarding to come across a number of innovative and successful experiments carried out in a few Asian economies. Diverse in their *modus operandi*, but these initiatives open up a world of opportunities for learning / adapting pragmatic and self-reliant steps to promote competitive clusters in rural and non-metro areas. An elaboration of the major approaches is in order.

#### **Product Specialization by Village / Town: OVOP, OTOP Initiatives**

Initiated way back in 1961 in a mountainous and a rather remote small town named Oyama in the Oita prefecture of Japan, the unique local initiative to move to high value adding specialized activities, in a collective manner, remains a shining example of promoting competitive clusters with entirely local initiatives. Known as the ‘One Village

One Product' (OVOP) model, the idea has been drawing significant attention in recent years as it has a strong potential to be tried out elsewhere beyond Japan, albeit with modifications. Under the leadership of the local agricultural cooperative, Oyama shifted its cropping pattern from the traditional rice cultivation to plum and chestnut, and, subsequently to high-grade mushrooms (*Shiitake* and *Enoki*) and a wide range of products like honey, *Kobuso* lime, *Bungo* beef, *Seki* mackerel, distilled spirit, dried fish, bambooware and *Onta* pottery. Besides, a number of service / tourism oriented activities were also promoted in the same cooperative framework.

The main motto of these OVOP activities (or, as also referred to as the OVOP movement) became i. think globally, act locally; ii. self reliance and creativity; and iii. improving human resources. Arranging for constant interaction with local stakeholders (mainly, farmers and local community), the responsibility of promotion and marketing of products was shouldered by the governor of the prefecture. The provision for upgrading technology (or any technical support) and seeking funding were kept strictly need-based and most operations could be sustained without much external dependence.

Table 4 provides a comparison of distinctive features / dimensions of two well known approaches, namely, OVOP and 'One Tambon One Product' (OTOP) in Thailand of local product promotion through various administrative, networking and marketing mechanisms.

**Table 4: A Comparison of Major OVOP and OTOP Features**

OVOP	OTOP
<i>Basic Approach (Self-reliance and Creativity)</i>	
<p>'Intrinsic' (Community revitalization through leadership formation, not just product upgrading).</p> <p>Close interaction with local community regarding labour use, material use and conservation, design and marketing.</p>	<p>'Extrinsic' (Promotion of local entrepreneurship through product upgrading).</p> <p>Broad consultation with both local community and outsiders regarding labour use, material procurement, design / processes and marketing.</p>
<i>Markets and Product Promotion</i>	
<p>Focuses on 'Only One' product (local treasure) as value addition and improves in response to market needs.</p> <p>Caters mostly to local, regional and national markets.</p> <p>Promotes products through participation in product fairs and by selling through widespread retail network (OVOP Co. Ltd., antenna shops, Tokiwa departmental stores and other local shops across the province and the district.</p>	<p>Highlights 'Number One' product (branded OPC – OTOP Product Champion) and also obtains government certification. Responds to market needs and quality standards.</p> <p>Targets urban and foreign markets.</p> <p>Promotes products through a variety of channels, e.g., Thai Airways, Thailand Post, Lemon Farm, Lotus, and BigC. It also organizes product fairs and has opened several OTOP stores across the country.</p>
<i>Policy / Administrative Aspects</i>	
<p>Local, prefecture level policies guide the activities, which are coordinated by the OVOP Promotion Council; there is no national level 'overseeing' body.</p> <p>Funding is raised through various sources, including government schemes, local companies, cooperatives, etc. However, private sources dominate.</p>	<p>Forms part of the national policy (driven by poll promises) and is highly hierarchical and centralized. It has administrative and sub-committees at various tiers of government, including at province, district, municipality and <i>tambon</i> levels.</p> <p>Financial support is mainly through national government sources (including royal projects) and sub-national level organisations and private sources as academic institutions, hospitals, NGOs, village funds, etc.</p>
<i>Networking and Inter-dependence</i>	
<p>Prefecture government plays a complementary, supportive role, only when required. Private sector remains an active partner in most spheres.</p> <p>Community performs an effective networking role between the prefecture government and the producers.</p> <p>Essentially, based on local initiatives and does not involve the central government.</p>	<p>Central government conducts the primary and detailed activities, including contacting the producers.</p> <p>Community has limited 'sectoral' role, mostly sidelined.</p> <p>Private sector's involvement is partial or dissipated.</p> <p>Inter-agency coordination ensures effective project management.</p>

Source: Based upon Kabuta (2007)

Similar efforts at identifying a local resource, developing it into a special product and marketing it with creative and competitive strategies (the essence of the OVOP concept) have also been tried out through the ‘One Village One Treasure’ approach in China and ‘One Town One Product’ in the Philippines. In fact, through the initiatives by the Asian Productivity Organization (APO), a number of Asian economies, including Cambodia, Lao PDR, Myanmar, Vietnam and Malaysia, are being introduced to this manner of cluster promotion, with a focus on regional development through rural industrialization.

An important aspect of these efforts has been the increased emphasis on quality improvement on a constant basis. These programmes have amply established that clusters in villages and small towns must be competitive through adopting such management practices as *kaizen* (incremental but continuous efforts to improve quality) and that the key to business success lies in networking for product promotion and marketing.

### **Rural Industrialization and Basic Infrastructure**

While the OVOP / OTOP approach to promoting clusters in villages and small towns shows considerable potential of the so-called industrialization of the periphery, there are larger issues beyond product promotion or marketing or even entrepreneurship. Quintessentially, the OVOP / OTOP approach is largely ‘sectoral’ in nature and can be effective / replicable in a locality that is already endowed with certain minimum basic infrastructure essential for any industry / business to grow. In the Asian context, however, rural areas and small towns of most countries (with the exception of Japan, China and even South Korea) have been severely constrained by the availability of adequate and good quality physical and economic infrastructure. This infrastructural short supply has been particularly acute in the South, Central Asian and ASEAN countries, including Cambodia, Lao PDR, Myanmar, Vietnam, Mongolia, Afghanistan and even India.

As cluster promotion is intrinsically linked to the availability and quality of infrastructure, it is difficult to find any existing dominant cluster approach rising up to the occasion to include infrastructure component as part of the cluster policy. Under the dominant approach, it is rare to find an arrangement for providing cluster or sub-sector or activity specific infrastructure, as, for instance, the creation of a common effluent treatment plant (CETP) in a leather cluster or provision of a common facility centre (CFC) for quality testing in a pharmaceutical cluster or a precision instrument cluster. Instances of such cluster-specific infrastructure are not only few but are typically confined to urban regions and are meant for certain high-end clusters. In fact, if one considers the vital economic infrastructure, namely, banking and financial services, its paucity is widespread.

In contrast, for most clusters in rural areas and small towns, the infrastructure shortage manifests itself in both the forms, namely, cluster-specific and, more importantly, generic. As has been widely acknowledged in the literature on rural industrialization, especially in the developing economies, it is the inadequacy of the generic infrastructure that needs utmost attention, including for cluster development. That the generic infrastructure development has to be envisaged as an *integral* part of cluster development in non-metro regions requires to be amply stressed as this is one area which has missed much scholarly analyses on cluster development. It serves no purpose in merely acknowledging the so-called ‘territoriality’ of clustering; in developing economies, particularly, it has deep implications, often that explains the growing inter-regional disparities in growth.

It is here that the exemplary state initiative of China in creating / developing infrastructure across the rural hinterland with an avowed intention of encouraging industrialization in villages and small towns deserves special mention (Sigurdson, 1977). Apart from investing massively in creating the road transport network, it also went in for such useful infrastructure as constructing warehouses and cold storage facilities keeping the need of the rural activities at the fore. However, the most notable infrastructure investment was in providing for regular electricity supply to villages and small towns that contributed immensely to run the rural enterprises efficiently and enhanced factor productivity. In what we term as ‘empowering’ rural enterprises, lies the real competitive advantage of clusters thus located.

While the development of generic infrastructure holds the key to dynamism for firms in clusters, provision of the cluster-specific infrastructure is no less a daunting task.

## Chapter V

### *Concerns and Challenges for Policy: Inclusive Perspective and Collective Action*

#### **Areas of Concern**

It is almost a paradoxical situation that while a plethora of policy guidelines and mechanisms of intervention for cluster development exist, a number of basic issues concerning clusters in developing economies are yet to be addressed in earnest or even recognized as serious constraints. This piquant position, often based on limited or partial understanding of the diverse dynamics of clusters across sector / sub-sector and also space, has prevented a meaningful broad-based strategy to emerge for Asian developing economies, specifically.

A close perusal of the burgeoning literature on cluster interventions and dynamics from both the developed and developing economies makes it amply clear that generalizations concerning accruing of certain so-called benefits such as collective efficiency, knowledge spillover, technological capacity building and even poverty reduction are untenable (e.g., Vijayabaskar and Krishnaswamy, 2004). Experiences of cluster development across Asian economies, limited documentation (in English) though available, have indicated that it is erroneous to look for stylized features (as found in a number of European clusters, for instance) in clusters in Asia. The exceptions have been the so-called high-tech clusters and a few globally interlinked ones through subcontracting / outsourcing, and the typical clusters are those relating to IT-driven sub-sectors, garments, automobiles, machine tools, etc. It is also equally unrealistic and problematic to assume that most regions in Asia have attained a certain minimum level of economic progress and can easily respond to or assimilate higher forms of technological and / or organizational innovations through GPS, for instance.

Rather, quite contrarily, a large number of Asian developing economies particularly in the central (e.g., Mongolia and Afghanistan), south (e.g., Bangladesh, Nepal and Pakistan) and south east regions (including Cambodia, Lao PDR, Myanmar and Vietnam, or the so-called CLMV countries) are some of the least developed nations in the world. Not only in many of these countries the spatial spread of the MSMEs (irrespective of clustering) has been highly uneven, the quality of inputs and the level of technology have also remained very

low. For instance, in CLMV countries, much of the SME sector is confined to low value adding primary commodity processing and artisanal products. Even in countries such as Indonesia, Sri Lanka, Bangladesh and Nepal, a wide variety of manufacturing activities are confined to the low-tech processes and cater to the local markets mostly. Additionally, in these countries the institutional support infrastructure still remains highly inadequate. What, however, is highlighted in cluster literature is the limited manufacturing and processing that have been taking place in some of these countries, being part of the global commodity chain.

### **Paucity of Cluster Database**

Given the highly diverse industrial base and structure within and across Asian economies, a particularly disturbing aspect from a policy perspective has been inadequate or poor quality database available on clusters and in certain cases even on MSMEs. In Table 5 an attempt has been made to compile data on the number of clusters in some Asian countries. As is obvious, the figures (excepting, probably, India) appear to be gross underestimates for almost all countries and also for a number of countries, and no such data are readily available. In fact, the poor quality and / or absence of basic data on clusters in Asia have been a major lacuna in the emergence of an informed and relevant cluster policy framework. Additionally, and notwithstanding the serious data limitations, the proportion of 'high-tech' clusters is abysmally low in all the Asian economies, with the eventual exception of Japan, where of the 18 clusters, as high as 15 (83 per cent) belong to the high-tech sectors (see Table 5).

**Table 5: A Tentative List of Industrial Clusters in Some Asian Economies**

Income Group*	Country	Number of Clusters**	
		Total	High-Tech
LI	Pakistan	43	
LI	Bangladesh	23	1
LI	Nepal	8	
LI	India***	6400	12
LMI	China	101	11
LMI	Thailand	35	2
LMI	Sri Lanka	15	1
LMI	Philippines	6	
LMI	Maldives	4	
LMI	Bhutan	3	
UMI	Malaysia	2	2
HI	Japan	18	15
HI	Singapore	3	1

Source: Das *et al.* (2007: 55-56), compiling information from a number of documents cited therein.

Notes: LI: Low income; LMI: Lower middle income; UMI: Upper middle income; HI: High income

\* Countries are grouped by broad income groups only and do not follow any order within a given group. Income groupings are as per *World Development Indicators, 2007*, <http://siteresources.worldbank.org/DATASTATISTICS/Resources/CLASS.XLS>

\*\* The list of clusters for the individual countries is no way exhaustive and is only a reflection of the extent of data collected. The actual numbers are likely to be much larger.

\*\*\* Since data for India are quite exhaustive, it could bias the table.

A closely related issue is the lack of clarity on cluster typologies that would be both representative of and relevant to types / characteristics of clusters in the Asian context. The literature on clusters, usually multi-disciplinary and policy-driven in nature, offers a wide variety of typologies or classifications depending upon the particular objective considered. Table 6 compiles a variety of these typologies and provides clues to their bases. While each typology has its own merits for a given purpose, each encompasses / reflects one or more of the cluster characteristics as, for example, the following: level of technology, locational factors, division of labour, propulsive firms, input-output linkages, path dependent production and external orientation. In a developing country context, however, it may be useful to classify clusters based on an *additive* criterion reflecting main technological, spatial and market attributes. In that sense, it may be highly policy-relevant to distinguish clusters somewhat in the following lines:

- High-tech / knowledge-based clusters
- Dynamic export-oriented clusters
- Low-tech domestically-inclined clusters
- Artisanal / craft-based clusters
- Service based clusters

Such a classification is only suggestive and could be suitably modified based on detailed discussions on cluster features in Asian economies; that would facilitate discrete policy instruments that need to be designed for addressing specific needs.

**Table 6: Common Typologies of Cluster**

Type	Distinguishing Features
<i>Largely based on sectoral characteristics</i>	
High-tech / knowledge	An innovation system formed with local initiative and participation of research institutions, firms from within and outside a region
Traditional-industrial	Manufacturing based on advantages of local resources and / or demand
Artisanal	Craft-centric activities producing either decorative or utility items or both using local raw materials and / or traditional skill
<i>Largely based on spatial organization of production</i>	
Italianate* / Marshalian	Local SMEs based on synergy of and economies of agglomeration
Satellite*	Medium and large branch plants
Hub-and-Spoke*	Firms in a locality mostly induced by and catering to domestic or foreign anchor / propulsive firms
Rural / Urban	Purely based on location of enterprises
<i>Largely based on market performance</i>	
Embryonic	Loosely-knit group of firms, at an early stage of cooperation and forming linkages with other (internal / external) cluster actors
Survival / Incipient	Firms facing poor demand conditions and failing to upgrade / diversify / compete
Dynamic	Doing brisk business and growing by responding effectively to market signals
<i>Largely based on the nature of emergence</i>	
Natural	Firms with a long history of existence
Induced / Created	Firms encouraged to co-locate through provision of certain basic infrastructure and / or incentives, typically with state support.

Source: Das (2005a: 4-8 and 16)

Note: \* Categorised by Markusen (1996).

### **Spatiality and the Criticality of Basic Infrastructure:**

Even as the industrial cluster literature has recognized the regional basis of productive activity, the dimension of spatiality / territoriality needs to be re-emphasized in the developing economy context. As has been argued elsewhere (Das, 2005b), the spatiality is not merely the place, that is, say, rural or urban, but has a strong reference to the level of regional development and other institutional capabilities that determines the cluster's access to basic physical and economic infrastructure. This assumes tremendous significance in non-metro regions, as has been mentioned in Chapter 4.

In addition to the deficiency in key physical infrastructure, especially, transport (including market-connecting roads and railways) and communications, there has been, of recent origin though, an increasing recognition of the poor or no provision of the crucial economic infrastructure, namely, banking and financial institutions in many Asian developing nations, as, in fact, in many other nations in Africa and Latin America. Serious concern has been expressed as in many cases such banking / financial services are clustered around metro regions and, moreover, are geared towards serving relatively larger or established units, rather than MSMEs in clusters. Further, local situation could determine distinct form and source of finance in developing economies, particularly. As pointed out in Riner (2008: 56), "Which sources of financing are most appropriate for SMEs depends on the institutional and economic context in which the firms do business. That context is different in developed countries and developing countries and between the developing countries themselves. And what works well in Mexico may be as ineffective in Vietnam or Zimbabwe as what works well in the US is to Mexico". The fact is that informal enterprises often dominate clusters, and formal banking has been a reluctant source. The MSME credit guarantee facility is either absent or very poorly developed in many Asian developing economies.

Another critical economic infrastructure that substantially contributes to improving factor productivity in clusters is the access to reliable supply of reasonably priced electricity to enterprises. As distinct from household electrification, enterprises can not only be more efficient in utilizing their production capacity but can be innovative as well (Das, 2007). As particularly a vital infrastructure, the provision of this at the cluster level needs to be integrated to the cluster development policy rather than considered separately.

### **Importance of the Domestic Market:**

In an interesting discussion on the business strategy and marketing in Chinese clusters, Ding (2006 and 2007) has highlighted the importance of domestic market as a potential

source for cluster dynamism. This point of view is distinctly different from the usual neglect of potential of local and domestic markets in the discussions on clusters in developing countries. In fact, as also shown through over a dozen case studies of clusters in different states of India (Das, 2005a), growing demand for their products from the domestic market *per se*, due mainly to the fast pace of urbanization and population growth, has been an important factor in vitalizing these and many other clusters. It is important to note that while a large number of products in clusters are consumed locally, there is a huge regional and national market to which many of these enterprises cater to. In fact, there have been interesting examples of domestic market-driven innovations in clusters, particularly in case of leather goods, garments, ceramic products and a range of artisanal products. While some units in these clusters do also engage in exports, the domestic market plays a vital role. Moreover, for certain kinds of goods, typical to local culture or traditional consumption, clusters have been active in meeting these demands. As mentioned earlier, it is also the nature of income distribution in these economies, which sustains certain demand purely on price and short-term utility considerations. This is not to undermine the importance of quality upgradation through constantly striving to innovate; rather, this is a reality that cannot be overlooked.

In fact, what is equally important is that active channels to serve the need of distribution of goods (as Ding has described the Chinese state efforts to improve the distribution network connecting far-flung regions and clusters) be developed for a better market access by enterprises having locational disadvantages. This is an area which requires further enquiry as in relatively larger countries like India and Indonesia. The existing retail and wholesale market networks are in need of formal policy support.

In highlighting the domestic market, there is a need to explore potential of services based clusters as for example, health services (both traditional and modern) tourism, IT / ITES based services, etc. A study in India (Das *et al.*, 2004) has indicated that there seems a potential of services based clusters to generate local employment and income. In any case, in both the instances of manufacturing and services based clusters, introducing quality certification and other marketing standards would certainly enhance the consumer base of their products.

### **The Cluster Grid: A Suggestion for Generating Policy-Sensitive Database**

Whereas the functional dynamics of clusters vary across sub-sectors and space, from a policy angle, it is important to have a certain reference frame which would generate basic information as to whether and how to proceed with cluster intervention. This would facilitate a broad-based or inclusive approach, whereby no sector or region is left out

because of its *current* market unattractiveness. Towards serving this end, a suggestion has been made here, what we term as the Cluster Grid. Essentially, the Cluster Grid has two operational parts, namely Identification (Table 7) and Intervention (Table 8), which are based upon the following:

- Fully computerised system (portal) of dynamic and interactive database.
- Based upon / operationalised with unique ID (Identity Code) by cluster.
- Can be accessed and effectively used by, for instance, specialised service providers, policy makers, entrepreneurs, traders, bankers, voluntary agencies and researchers worldwide.

It needs to be underscored, nevertheless, that the basic objective here has been to make a case for including a range of variables in the cluster database, which are directly relevant for appreciating cluster potential and constraints. It is obvious that a number of such variables included in both the tables here would involve further detailed explanations as to how exactly these be determined and / or estimated. In that sense, this Grid idea is at a rudimentary stage.

It is useful to note here that there is a wide variety of ways in which clusters are defined even within the same country and across implementing agency (even, for example, differently by different ministries within the same tier of government). While no suggestion is being made to have a single definition of clusters, the Grid can actually be flexible to accommodate the defining criteria and still be made operational through the unique identification number and a host of other useful information as to be added to the individual boxes.

From an operational point of view, the portal would open up further windows detailing a particular variable. For instance, as far as the Identification grid (Table 7) is concerned, 'Market' cell would indicate extent of access by firms in the cluster in different markets, namely, 'Local', 'Regional', and so on. Similarly, the last four rows would provide a useful picture regarding the status and emergence of the cluster. For the Intervention grid (Table 8), for example, 'Trade / IPR' cell would indicate if there are issues relating to export procedures, training on IPR provisions, such as confirming to 'Good Manufacturing Practices,' as in the pharmaceuticals case. Similarly, for the 'Entrepreneurship' cell, information would be available on nature of need for promoting or creating new entrepreneurs in a cluster or, for the 'Specialized Agencies' details on type of business development services required / available, for instance, be provided for.

Although this is only an indicative frame of intervention, with improvement and suitable

modifications it has the potential advantage of identifying the dynamism and other key characteristics of a given cluster and devise relevant intervention or even to study the constraints and possibilities of a particular cluster. An apex body to update and manage the database, at appropriate levels (provincial, national, Asian level and beyond), would open up much scope for cooperation between Asian economies in terms of benefiting from a shared pool of knowledge, markets and even resources.

**Table 7: Cluster Grid-I: (Identification)**

Unique Identification Code														
Sector					Space					Support System				
Market	Informalisation			Macro Policy	Technology Level	Location	Regional Policy		Infrastructure		Own Groups	Other Clusters	Specialised Agencies	
	L/R/N/G	Lb	T				RC	L/N	H/Lw/NI	R/Tn/C				A
Major Products:														
Source and Basis / Criteria for Defining the Cluster:														
Emergence / History:														
Turning Points:														

Source: Author’s conceptualization.

Notes: L- Local, R- Regional, N- National, G- Global, Lb- Labour, T- Technology, RC- Regulatory Compliance, H- High, Lw- Low, NI- Nil, Ru- Rural, Tn- Town, C- City, A- Active, P- Passive

**Table 8: Cluster Grid-II: (Intervention / Initiatives)**

Unique Identification Code										
Sector				Space				Support System		
Credit	Technology	Marketing	Trade/ IPR	Infrastructure	Entrepreneurship	Regional Policy		Groups / Associations	Related Clusters	Specialised Agencies
						A	P			
Existing Policies:										
Existing Database:										

Source: Author’s conceptualization.

Notes: A- Active, P- Passive

## Chapter VI

### *Concluding Observations*

The central objective of this study has been to examine issues, challenges and possibilities that would facilitate broad-basing industrialisation through the promotion of competitive clusters in Asian economies. This has been necessitated by the fact of growing regional disparities being observed in many Asian countries despite impressive growth rates and an increased integration with the global markets. Notwithstanding the immensely diverse socio-economic and political contexts prevailing in Asian economies, the SMEs seem to have generated a lot of interest in policy makers, donors and large enterprises (both domestic and abroad) that could serve a larger common interest amongst these and other diverse stakeholders in development. Especially, SME clusters have been said to hold strong possibility for activating local economies through creating opportunities for new and productive employment and progress in the technological sphere that would enhance competitiveness of firms. There is also the added advantage of the scope for cooperation between Asian nations in the spheres of production, technology and market expansion.

At least since the mid-1980s, there has been a resurgence of interest in clusters across the globe and numerous agencies (at governmental, regional and para-statal levels) have been promoting clusters through a variety of initiatives. At least in 70 nations, both developed and developing, in some form or other cluster development programmes have been initiated. Nevertheless, it has been difficult to generalize outcomes of cluster intervention across different nations. For the developing economies, there exist a number of constraints which could include structural factors as well. In an attempt to clarify the conceptual underpinnings of cluster dynamics from a developing country perspective, this study discusses at length the three principal characteristics of sector / sub-sector, space and support system, and points to the disadvantages that a cluster might have simply because it is based in an underdeveloped economy.

Further, through identifying three key determinants of cluster dynamics, it is observed that, ultimately, the cluster's dynamism / performance would be determined by the market(s) it caters to. These three determinants include the strength of networking, nature of informalisation and the macro policy environment. The most important issue is that of informalisation (whether in the production or labour processes or even as reflected through the non-compliance of regulations) in developing country clusters; unfortunately, one hardly finds adequate reference to it. At one level, particularly as in most developing country clusters, the terms of employment and labour conditions, in general, reflect informal sector characteristics, the burgeoning literature has maintained a *strategic* silence on it, excepting that freeing labour regulations is insisted upon so as to serve the interests of MNEs and also domestic large firms. Whereas successful European

clusters focused on enhancing labour productivity through a range of interventions, including improved working environment and provision of *real services*, many clusters in Asia are still characterised by informal production processes and poor conditions of work, including poor wages and high incidence of child labour. The labour dimension needs special attention.

Moreover, this study discusses different layers of markets to which the clusters cater; in fact, the domestic market itself could be a potential attraction for clusters in Asian developing economies. The standard literature, overwhelmed by the opportunities created by neolocalism and neoliberalism, has paid least attention to the domestic markets in developing (especially, large Asian economies) as well as ways to improve distribution networks to facilitate better market access by remote clusters, for instance.

The dominant approaches to cluster development during the last about a decade-and-a-half are clearly driven by what we may term internationalization, that insists on a link to and move up on the GVC as almost *the* strategy of upgradation of clusters in developing economies, mainly in Asia. Nevertheless, examples from Asian economies do indicate problematic aspects of such trans-border business relocation, which is often driven by the intention to take advantage of low costs of labour. Apart from their implications for employment, a major issue in these emerging GPS is that these are limited to a few sub-sectors carrying out 'rent-poor' activities (with the labour-intensive, low-value addition component being subcontracted). There are related issues of stiff selection of subcontractors and absence of participation in non-labour and / or high-tech stages of a given process. The other approaches to cluster development, mostly propagated by international donor agencies, including the UNIDO and ILO, have been largely successful in influencing national and sub-national strategies with a wide variety of components as handholding, facilitating links with global markets and provision of or network to obtain specialized services, including familiarizing firms in a cluster to global trade norms, export procedures, and a host of other business development services and even finance.

It is rather strange that the growing cluster literature remains so emaciated in terms of addressing not only challenges faced by micro and small enterprises in the rural regions and small towns, but also suggesting instruments of tackling some of these. The cluster literature, in fact, is blatantly biased towards a certain type of modern sub-sector analysis, that too, with a good measure of focus on GPS / GVC / GPN. As one deals with such important issues as industrialization in the rural and non-metro regions, wherein often most developing country clusters are based, the challenges include not merely rendering these firms competitive in a purely *sectoral* sense, but also to explore if such promotion also contributes to creation of productive employment in these regions. It becomes a tricky proposition for the mainstream cluster experts to discuss ways of intervention as, ultimately, some of the diehard structural constraints come up to be negotiated. A specific challenge is, in fact, to assess the nature, cost and financing of basic

infrastructure, especially, generic. Such exercises are required to facilitate connectivity of clusters in villages and small towns with the larger market elsewhere, whether domestic or foreign.

Any policy initiative that aims at building up ‘competitive’ and ‘innovative’ clusters in rural regions or small towns must address such key issues in the production process as regular supply of electricity to the enterprises. The Chinese example of large scale investment in provision of infrastructure, including roads and power supply so as to render rural business worthwhile, indicates different strategies altogether than the much-hyped means of internationalization.

At a different level, useful experiences exist in Asian countries that open up vast scope for promoting competitive clusters based upon local resources (both natural and human). A comparison of the two such strategies, namely, ‘One Village One Product’ (OVOP) in Japan and ‘One Tambon One Product’ (OTOP) in Thailand provides clues that are being considered in intervening in other Asian economies as well. An important point in these approaches has been a strong emphasis upon ensuring product quality through certification and vigilance. Importantly, many of these high value added products from these OVOP / OTOP centres are being marketed both domestically and globally.

Efforts towards devising cluster promotion strategies that would not only instill an ethos of innovativeness and competitiveness in the constituent firms but also be broad-based or inclusive, require addressing a set of complex issues with a pragmatic approach. First, improving and strengthening the database on clusters is highly essential for any meaningful intervention to be planned and carried out. Currently, reliable and policy-sensitive database on clusters for most Asian economies are not available. Sporadic and incomplete information are no substitute to carefully organized database creation. Second, as mentioned often, the provision of generic infrastructure (as distinct from cluster-specific infrastructure) requires to be factored into cluster policy.

Third, there is a strong case for recognizing the potential of domestic markets (in all its layers) and innovative ways suggested to improvise and widen the distribution network so as to be useful, specifically, for clusters remotely located. Finally, our knowledge regarding the existence and functioning of services based clusters must be augmented so that these potentially dynamic and job-generating clusters can, in fact, add to local development initiatives.

It is here that our suggestion of creating an interactive portal - what we term as the Cluster Grid - on basic cluster information, on counts of both *identification* and *intervention*, would be most useful for policy purposes. With suitable modifications the Cluster Grid can be rendered useful as a conduit for sharing information on knowledge and resources across economies and

sectors; that would be an important initial step towards ‘dynamic’ inclusive cluster promotion strategy.

It is obvious that the role of the state remains important even in the era of globalization, especially while dealing with developing economies and exposing their MSMEs to challenges posed by globalization. It is not an issue of whether the state *or* markets or, for that matter, if the government has a role to play in cluster promotion. In the context of Asian developing economies, industrial clusters cannot be viewed only from a sub-sectoral market expansion point, which tends to benefit a few ‘dynamic’ firms in a few clusters. Moreover, even in case of *creating* new clusters (as substantively distinct from *promoting* myriad *existing* clusters) the important policy issue includes the challenge of the land market, particularly in urban belts. Beyond the hype of neo-localism, cluster promotion strategies must encompass a regional development perspective, wherein addressing issues of structural infirmities, especially, basic infrastructure and both job creation and security, assume critical importance. At least in these two areas, the state has a significant part to play.

An inclusive policy perspective for competitive cluster promotion in Asian economies involves appreciating constraints and opportunities at the levels of sector / sub-sector, space and extant support system. This calls for a different strategy that provides space for mutual learning and a larger commitment to collective action at least at a pan-Asian level, if not beyond.

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