Journal of Small Business Management 2005 43(2), pp. 138–154

Promoting Small and Medium Enterprises with a Clustering Approach: A Policy Experience from Indonesia

by Tulus Tambunan

Small and medium enterprises (SMEs)[1] *in Indonesia are very important for employment creation and are important sources of economic growth and foreign currencies. It is therefore not a surprise that SMEs receive ample attention in Indonesia. In recent years, particular attention has been paid to development of SME clusters. The main aim of this paper is to review government policies on SMEs with a clustering approach, in Indonesia. The paper argues that in many cases, the development policy has not been so successful. In essence, most failures can be attributed to the fact that one or more critical factors for successful SME cluster development were either not existing or not addressed correctly. Neglecting cluster linkage to markets is one main reason for the failure. Prerequisite for successful cluster development is the cluster's potential to access growing markets, either domestic or abroad.*

Introduction

Indonesia values small and medium enterprises (SMEs) for several reasons, such as their potential to create employment and to generate foreign currencies through export, and their potential to grow into larger enterprises (LEs). These enterprises are also important as domestic producers of cheap import substitution consumer goods especially for low-income groups, and as supporting industries producing components, tools, and spare parts for LEs. Moreover, when the Asian economic crisis hit the country in 1997, SMEs were found to have been weathering the crisis better than LEs, because their greater flexibility allowed them to adjust production processes during the crisis, although many had been hit hard too. Many argue that being less reliant on formal markets and formal credit, SME are able to respond more

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[1]In Indonesia, enterprises with 1 to 4 workers (not including the owner) are classified as micro enterprises; 5 to 19 workers as small enterprises; 20 to 50 as medium enterprises; and more than 50 workers as large enterprises.

quickly and flexibly than LEs to sudden shocks (Berry et al. 2001).

It is therefore not a surprise that SMEs receive ample attention in Indonesia. In recent years, particular attention has been paid to SME clusters that are frequently defined as agglomeration of small and medium firms operating in the same subsector in the same location.

The main aim of this paper is to review government policies on SME development with a clustering approach, in Indonesia. This paper deals with two main questions. First, what are the critical success factors of development of SME clusters? Second, to what extent have these policies contributed to the dynamics of SME clusters in the country? For this purpose, the framework of this paper is developed as follows. Section II discusses the basic concept of industry cluster. The third section explains main anticipated benefits of a cluster. The fourth section reviews briefly the development of SME clusters in Indonesia. The fifth section explains the importance of cluster-oriented SME development policies. The sixth section reviews briefly SME development policies with a clustering approach in Indonesia. Discussion in this section proceeds to the seventh section, which identifies main factors behind success stories and failures of such policies in Indonesia. Finally, a short summary of the main contribution of this study is given.

Basic Concept of Industry Cluster

Clustering is a common economic phenomenon. The United Nation Industrial Development Organization (UNIDO) defines a cluster as a local agglomeration of enterprises producing and selling a range of related or complementary products within a particular industrial sector or subsector (Richard 1996). One example is a localized knitwear and garment industry that includes within a small geographical region knitting firms, cloth-finishing, dyeing, and printing enterprises, garment producers, merchant buyers and exporters, and also producers of specialized inputs such as thread, buttons, zips, and even possibly chemical treatment as well. However, there are also many clusters less specialized and developed than this, for example a local agglomeration of small metal working enterprises producing a range of metal products and repair services for broadly the same markets, and having only competitive relations with each other (Tambunan 1997).

In its traditional form, clustering refers to the process in which geographically proximate producers, suppliers, buyers, and other actors develop and intensify collaboration with mutually beneficial effects. However, in its most advanced form, according to a widely accepted definition proposed by Porter (2000), a cluster is a geographically proximate group of interconnected enterprises and associated institutions in a particular field, linked by commonality and complementarity. Under this definition, a cluster may include suppliers of inputs, or extend downstream to regular buyers or exporters. It also includes government institutions, business associations, providers of business services, and agencies that support clustered enterprises in such fields as product development, production process improvement, technology, marketing information (for example, on new market and designs), vocational training, and so on.

Anticipated Benefits of a Cluster

In the era of world trade liberalization and economic globalization, great demands are made on the ability of SMEs to improve their efficiency and productivity and to adapt to and be flexible as regards market, product, technology, management, and organization. As the era generates larger market opportunities, individual SMEs are often unable to capture these opportunities that require

products with better quality and prices and good services after sale, larger production quantities, products homogeneous standards and regular supply. Many enterprises experience difficulties achieving economies of scale, and they also constitute a significant obstacle to internalizing functions such as training, market intelligence, logistics, and technology innovation and can also prevent the achievement of a specialized and effective interfirm division of labor, all of which are at the very core of firm dynamism (ADB 2001).

Experiences in many European countries show that clusters can be a powerful means for overcoming the above constraints and succeeding in an ever more competitive market environment. Through clustering, individual enterprises can address their current problems related to their size, production process, marketing, procurement of inputs, risks associated with demand fluctuations, and market information and can improve their competitive position. Through a cooperation of enterprises in a cluster, they may take advantage of external economies: presence of suppliers of raw materials, components, machinery and parts; presence of workers with sector-specific skills; and presence of workshops that make or service the machinery and production tools. A cluster will also attract many traders to buy the products and sell them to distant markets. Also, with clustering of enterprises, it becomes easier for government, LEs, universities, and other development supporting agencies to provide services. The services and facilities would be very costly for the providers if given to individual enterprises in dispersed locations (Tambunan 2000; Humprey and Schmitz 1995).[2]

Internal and External Networks

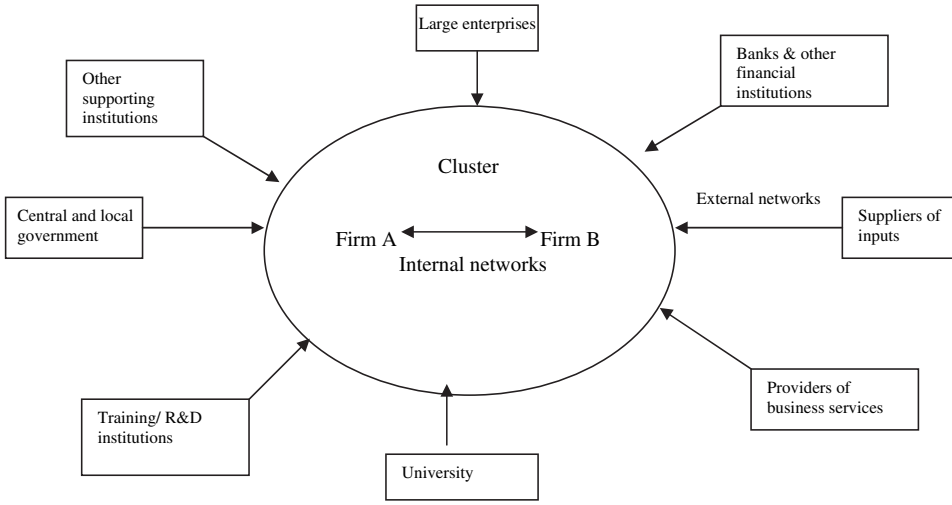
Clustering creates external economies and joint actions and increase scope. In effect, individual enterprises in a cluster can gain collective efficiency. Close proximity facilitates the establishment by enterprises in the locality of industrial links without substantial transaction costs or difficulties. However, these economic advantages can only be achieved if the cluster has well-developed internal and external networks. Internal networks can be defined as business cooperations or links among enterprises inside the cluster, which can be in various forms, for example marketing, distribution, production, procurement of materials, and training for workers. External networks are business and other forms of relation between enterprises inside the cluster and actors outside the cluster such as LEs, suppliers of inputs, providers of business services, and son on (Ceglie and Dini 1999) (Figure 1).

Horizontal and Vertical Interfirm Cooperations

Further, internal networks or interfirm cooperations can be divided into horizontal and vertical cooperations. The first type is cooperation among SMEs occupying the same position in the value chain. Through such cooperation, enterprises can collectively achieve scale economies beyond the reach of individual enterprises and can obtain bulk-purchased inputs, achieve optimal scale in the use of machinery, and pool together their production capacities to satisfy large-scale orders. It also give rise to a collective learning process, where ideas are exchanged and developed and knowledge shared among individual enterprises in a collective attempt to

[2]Other articles on the success stories of SME clusters in West Europe include Goodman and Bamford (1989); Piore and Sabel (1983, 1984); Pyke and Sengenberger (1992, 1991); Pyke, Becattini, and Sengenberg (1990); Rabellotti (1995a, b, 1993); Schmitz and Musyck (1994); and Sengenberger, Loveman, and Piore (1990).

Figure 1
An Illustration of Internal Networks Inside and External Networks of a Cluster



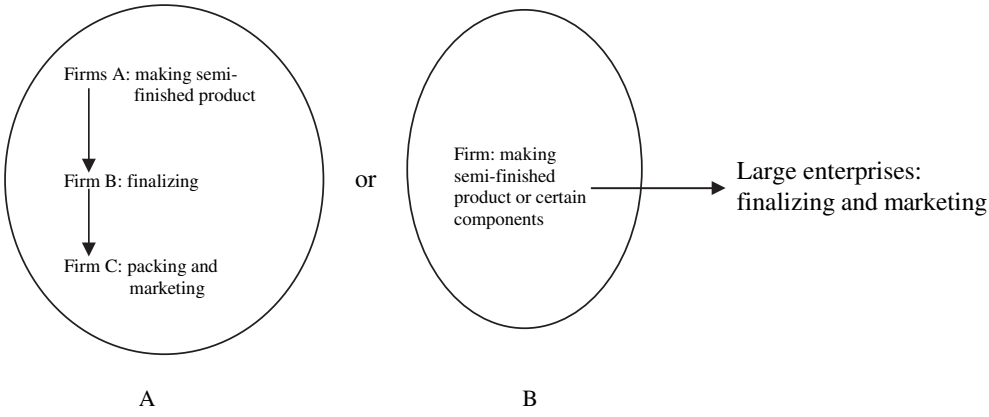
improve product quality, upgrade technology, and move to more profitable market segments. The second type is cooperation among SMEs along the value chain. With this, an enterprise can specialize in its core business and subcontracts other related works to other enterprises in the cluster (A in Figure 2). However, in many cases, it has been found that many individual enterprises have vertical cooperations with LEs outside the cluster through subcontracting systems (B in Figure 2). Thus, in many cases, the vertical cooperation consists of both internal and external networks.

SME Clusters in Indonesia

After discussing the anticipated benefits of a cluster in Section III, the author will now review the development of SME clusters in Indonesia. The main aim of this section is to answer the following questions: do all existing clusters do well? If not, why do some clusters perform well, while others do not or stagnate? What are the main characteristics of a bad-performing or stagnated clusters? The review of the performance of SME clusters in Indonesia is based on selected important studies that are available so far.

SME clusters can be found in all provinces, and most of them are located in rural areas. The clusters were established naturally as traditional activities of local communities whose production of specific products have long been proceeding. Based on comparative advantages of the products they make, at least with respect to the abundance of local raw materials and workers who have special skills in making such products, many of these clusters have a large potential to grow. Take for example the clusters of batik producers that have long been existence in various districts in Java

Figure 2
An Illustration of Vertical Interfirm Cooperations



(for example, Yogyakarta, Pekalongan, Cirebon, Surakarta, and Tasikmalaya).

Various studies show the importance of clustering not only for the development of SMEs in the clusters, but also for the development of villages/towns in Indonesia. Smyth (1992, 1990) described how clustering of rattan furniture producers has absorbed an entire village in Tegal Wangi, West Java, and created numerous satellite small-scale industrial activities in neighboring hamlets. Schiller and Martin-Schiller (1997) also provided the same evidence from wood furniture producers in Jepara in Central Java. The growth of this cluster in the 1980s had transformed the town into a thriving commercial center with a five-mile avenue of furniture showrooms and factories, modern hotels, new commercial banks, supermarkets, telephone and fax stalls, and European restaurants.[3]

The above evidence may suggest that clustering is indeed important for the development of SMEs as well as the region. However, some remarks should be made. Sato (2000), for example, saw little evidence of positive effects of clustering, as she found no interfirm specialization of work processes and no joint actions (which are important ingredient for a cluster to grow) among the enterprise inside the clusters studied. It is also hard to find SMEs in clusters in Indonesia that have production linkages through subcontracting systems with LEs (Supratikno 2002b). Data from Central Bureau of Statistics in 2001 show that more than 90 percent of SMEs in Indonesia do not have such linkages with LEs.

As shown in Table 1, according to their level of development, clusters in Indonesia can be classified into four types, each with its own characteristics

[3]More empirical studies shown in Soemardjan (1992); Klapwijk (1997); Weijland (1999, 1994); Sandee (1996, 1995, 1994); Sandee and Weijland (1989); Sandee et al. (1994); Van Dierman (1997); Tambunan (2000, 1998a, 1998b, 1994); Tambunan and Keddie (1998); Glasmeier (1990); van Velzen (1990a, b, c); Sadhyadharma et al. (1988); Supratikno (2002a); Knorringa (1998); and Knorringa and Weijland (1993).

Table 1
Different Types of Cluster in Indonesia

Type	Characteristics
1. "Artisinal"	Mainly micro enterprises; low productivity and wage; stagnated (no market expansion, increased investment and production, improved production methods, and management, organization and production development; local market (low-income consumers) oriented; used primitive or obsolete tools and equipment; many producers are illiterate and passive in marketing (producers have no idea about their market); the role of middlemen/traders is dominant (producers are fully dependent on middlemen or trader for marketing); low degree of interfirm co-operation and specialization (no vertical co-operations among enterprises); no external networks with supporting organizations.
2. "Active"	Used higher skilled workers and better technology; supplied national and export markets; active in marketing; the degree of internal as well as external networks is high.
3. "Dynamic"	Trade networks overseas are extensive; internal heterogeneity within clusters in terms of size, technology, and served market is more pronounced; leading/pioneering firms played a decisive role.
4. "Advanced"	The degree of interfirm specialization and cooperation is high; business networks between enterprises with suppliers of raw materials, components, equipment and other inputs, providers of business services, traders, distributors, and banks are well developed; cooperation with local, regional, or even national government, as well as with specialized training and research institutions such as universities is good; many firms are export-oriented (mainly through trading houses or exporting companies).

(Sandee and ter Wingel 2002). The first type of cluster dominated clusters in Indonesia, indicating that the process of clustering in the country is still at an infant stage. Altenburg and Mayer-Stamer (1999) refer to such clusters as "survival" clusters of micro enterprises. The second type developed rapidly in terms of skill improvement, technological upgrading, and successful penetration of domestic and export markets. Typical examples are such as roof tiles clusters, metal casting clusters, shuttle-cock clusters, shoe clusters, and brass-handicraft clusters. In these clusters, some enterprises start to influence the development trajectory of the clusters, and some enterprises produce for export through middlemen or traders or trading houses from outside the clusters. Examples of the third type are textile weaving clusters in Majalaya and Pekalongan, furniture clusters in Jepara, wig and hair accessories clusters in Purbalingga, and hand-

Table 2
Leading Firms in Some Active and Dynamic Clusters

Cluster	Location	Leading Firms
1. Wig and Hair Accessories	Purbalingga (Central Java)	PT[a] Royal Korindah, PT Indo Kores
2. Handicrafts	Kasongan and Sleman (Yogyakarta)	PT Out of Asia
3. Textile Weaving	Pekalongan (Central Java)	PT Pismatex
4. Furniture	Jepara (Central Java)	Duta Jepara, Grista Mulya, Satin Abadi
5. Brass Handicrafts	Juwana (Central Java)	Krisna, Samarinda
6. Roof Tile	Kebumen (Central Java)	Mas Sokka

[a]A limited corporation.
Source: Supratikno 2002a.

icraft clusters in Kasongan. One of the most striking features of this type may be the decisive role of leading/pioneering firms, usually larger and faster growing firms, to manage a large and differentiated set of relationships with firms and institutions within and outside clusters. Some leading firms have utilized cutting-edge technologies in production. Examples are clove cigarette clusters in Kudus, tea-processing clusters in Slawi, and tourism clusters in Bali. In the case of clove cigarette clusters in Kudus, their products are able to outperform products from Philip Morris and BAT. Similarly, tea-processing cluster in Slawi, led by a big company named Sostro, has grown to become the market leader in the Indonesian soft drink market, leaving giant Coca Cola behind (Supratikno 2002a). Some other leading firms in active and dynamic clusters are presented in Table 2.

Interestingly, in some cases, such as in furniture clusters in Jepara and handicraft clusters in Kasongan, there are considerable direct investments made by foreign immigrants[4] (Supratikno 2002a).

Clusters of the fourth type are more developed and become more complex in structure than those in the third type. Schmitz and Nadvi (1999) provide some examples of advanced export-oriented clusters in developing countries including shoe manufacturing in Brazil, India, and Mexico; surgical instruments in Pakistan; garments in Peru; and furniture in Indonesia (Jepara).[5]

Moreover, advanced clusters often overlap and interlink with other clusters

[4]Foreign immigrants who established production facilities have contributed significantly to the clusters' dynamics. They are clearly in advantageous position vis-à-vis local producers in the clusters, as these foreign immigrants have better accesses to market, technology, and financing sources (Supratikno 2002a).

[5]See also earlier studies/papers by Schmitz (1995a, 1995b, 1992, 1990, 1982). Other stories on cluster development in less developed countries are given in Ceglie and Dini (1999); Van Dijk (1995); Van Dijk and Rabellotti (1997); Swaminathan and Jeyaranjan (1994); Nadvi (1995); Nadvi and Schmitz (1994); and Pedersen, Sverrisson, and van Dijk (1994).

in the same region. Such cluster agglomerations, or often-called industrial districts (the Italian term), form the most complex form of clustering, where different sectors or subsectors mutually depend on and benefit from each other. Prominent examples of cluster agglomerations include north-central Italy (tourism, food industry, fashion industry, furniture industry, machinery industry), southern Germany (vehicle, electronics, machinery, and software industries) and Greater London (banking, insurance, software, publishing, film and music, tourism, fashion industry, advertising, business services). In Indonesia, one example of a cluster agglomeration is the Yogyakarta–Solo area with its tourism, furniture and interior decoration, metal processing, leather goods, and textile/clothing clusters, which all mutually benefit each other.

The Importance of Cluster-Oriented SME Development Policies

From a public policy perspective, SME development policies with a clustering approach is important because it is more effective and more efficient for government to provide technical and management supports, training, and general facilities, such as large machinery for raw material drying and processing into half-finished goods, to a group of firms located in one place than to individual firms in dispersed locations. It is also easier for local universities/research and development institutions to provide technical or training supports, local banks to provide loans, and LEs to conduct subcontracting networks with firms located in one cluster. The participation of these institutions in promoting SMEs is certainly very helpful for the government in implementing its SME cluster development policies. The government can encourage their participation by giving them fiscal or other forms of incentive.

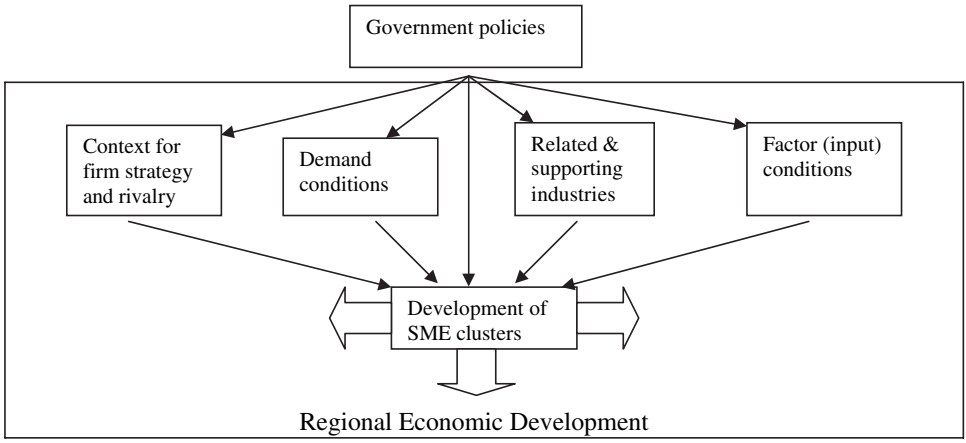
Such institutions do not generally operate on pure free-market competitive principles. Nevertheless, they have been found in many countries to actively participate in and contribute to market and product development among the SMEs, as well as in training, technical development, and financing. It is normally found that some (not necessarily all) of such institutions were strong in dynamic clusters, and they contributed significantly to the clusters' growth and development.

So, with the support of these institutions, and given the potential collective benefits of a cluster (see section on benefits of a cluster), the chance for success of SME development policies with a clustering approach is higher than policies targeting individual firms in dispersed areas.

An illustration of government policies for SME cluster development is presented in Figure 3. Based on Porter's (1998, 2000) thesis on local clusters in a global economy, the development of a cluster depends on four main factors: (1) context for firm strategy and rivalry inside the cluster; (2) demand conditions; (3) related and supporting industries; and (4) factor conditions. So, SME development policies with a clustering approach consist of direct policies toward cluster (for example, provision of technical development and management training, and general facilities such as large machinery for raw material drying and processing into half-finished goods), and indirect policies through supporting these four factors.

With respect to the first factor, the government should eliminate barriers to local competition, attract investment (both foreign and domestic) in and around the supported cluster, promote export of the cluster's products, and organize relevant local government bodies around the cluster. With respect to the second factor, the government should create streamlined, pro-innovation regu-

Figure 3
An Illustration of Government Policies for Cluster Development



latory standards affecting the cluster to (1) reduce regulatory uncertainty; (2) stimulate early adoption; and (3) encourage innovation in product as well as production process. In addition to improving demand conditions for the cluster's products, the government should also sponsor independent testing, product certification, and rating services. Also, the government should act as a sophisticated buyer of the cluster's products. In supporting SME clusters through developing related and supporting industries, the government should sponsor forums to bring together cluster participants, create a business friendly environment to attract suppliers and service providers from other locations, and establish cluster-oriented free-trade zones, industrial parks, or supplier parks.

Finally, SME cluster development policies through improving factor condition should include efforts to create specialized education and training programs; establish local university research efforts in the cluster-related technologies, support cluster-specific information gathering and compilation; and improve specialized transportation, communications, and other infrastructure required by the cluster.

So, it is obvious that this approach is also very important from a regional economic development policy perspective. As illustrated in Figure 3, development of clusters in a region supported by policies with a clustering approach will also promote development of related and supporting industries, industrial or suppliers parks, business development services, training facilities, local research and development activities, financial institutions, infrastructure, and free-trade zones in that region. It will also attract investment in that region from abroad or from other regions within the country. The development of clusters can also be an effective way of promoting rural economic development, as well-performing SME clusters will generate "trickle down effects" on other local economic activities, through their direct as

well as indirect production and income linkages (see some evidence discussed in Section IV).

SME Cluster Development Policies in Indonesia

Government efforts to develop SME clusters in Indonesia can be traced back to the late 1970s with the introduction of a national program called BIPIK by the Ministry of Industry. This program basically focused on promoting selected clusters showing some dynamism or having good market potentials. Main tools comprised training, donation of equipment to selected producers that had participated in training programs, provision of a special credit scheme to support acquisition of new machinery by clustered enterprises, and, most importantly, the setting up of common services facilities, which include technical service units (UPTs). Each UPT provides machinery and equipment that can be used by all enterprises in the supported clusters (Sandee and van Hulsen 2000).

Before the 1997 crisis, there were many complementary activities (under other government programs) to the BIPIK program. They included subsidized visits of producers to trade fairs, programs for linking universities and research/service centers to SMEs, and programs for developing subcontracting linkages between LEs and SMEs. The government had also created a partnership system under the so-called Foster-Parent Scheme between SMEs and state-owned enterprises such as the state electricity company (PLN) and the state oil company (Pertamina).

Also, the government had made considerable investment into transport and communication infrastructure and facilities such as small industrial estates and business incubators in a number of key clusters (ADB 2001).

Up to the mid-1990s (before the crisis), the number of SME clusters in industries that had received support from the government totaled 9,022 clusters (Table 3). However, not all of these clusters have shown good performance, despite government support. Many of the clusters in certain industries and provinces had stagnated during the crisis period (1998–1999). To a certain extent, this different performance was related to different internal conditions (for example, the availability of technology, capital, skills, and raw materials) as well as external conditions (for example, market opportunities and government economic policies) faced by clusters in different industries and provinces. In some industries, output markets have been distorted by monopolistic or other cartel practices by big companies or by government policies such as export tax or regulations on import of raw materials in favor of big enterprises or foreign direct investment firms.[6]

Recently, policy interest in SME clusters in Indonesia has grown considerably. Both the Ministry of Industry and Trade and the State Ministry for Cooperatives and Small Enterprise Development have strengthened their programs for the development of clusters. International agencies, such as the Asian Development Bank (ADB), Japan International Development Agency (JICA), and the International Labour Organization, have promoted SME cluster development in

[6]It can also be expected that the performance of clusters where the medium enterprises are dominant is better than that of clusters where the small or micro enterprises predominate. It is because medium enterprises are in better position than their smaller counterparts in almost all important respects, including having better access to technology, capital, skilled manager and workers, and information.

Table 3
Number of Government Supported SME Clusters by Provinces in Indonesia, 1995

Province	Total Unit
D.I. Aceh	192
North Sumatera	636
West Sumatera	313
Riau	180
Jambi	83
Bengkulu	107
South Sumatera	175
Lampung	108
DKI Jakarta	127
West Java	921
Central Java	970
D.I. Yogyakarta	520
East Java	1,204
South Kalimantan	313
West Kalimantan	121
Central Kalimantan	151
East Kalimantan	215
Bali	677
West Nusa Tenggara	275
East Nusa Tenggara	238
South Sulawesi	538
North Sulawesi	253
Southeast Sulawesi	83
Central Sulawesi	172
Maluku	257
Irian Jaya	110
East Timor	101
Indonesia	9,022

Source: BAPIK, Ministry of Industry, 1995.

the country. Both the ADB and JICA have commissioned studies on best practices in SME cluster development and supported pilot projects aimed at formulating effective policy support packages (Sandee, Isdijoso, and Sulandjari 2002).

Indonesian Success Stories and Failures of Cluster Development Policies

Some Success Stories

In view of the complexity of cluster development processes and the wide range of instruments applied, it is hardly possible to determine policy contribution to successful cluster development in Indonesia. Nevertheless, public intervention is likely to have contributed to a number of success stories such as the development of the wooden furniture cluster in Jepara (Central Java), which is among the largest clusters in the country. A comprehensive development package, including for example, technical upgrading through the provision of a common service facility, export training, and investment into improvement of the regional infrastructure (container facilities, roads, telephone), helped the cluster to gradually develop export markets. Similar effects were brought forward by creating a small industrial estate combined with a common service facility for wood processing, a joint showroom, and trade fair participation support in Sukoharjo, near Surabaya (East Java). The area is now a leading exporter of wooden, rattan, and metal furniture.

There are, however, other factors that have significantly contributed to the aforementioned success stories: (1) strong local sector associations; (2) long exposure to foreign tastes brought forward by international tourism; (3) a considerable medium-scale direct investment by western immigrants married to Indonesians; and (4) a strong role of trading houses in brokering and organizing exports. In particular, exports seem to benefit from some trading houses' traditional connections to China, which is one of the worlds' largest markets for furniture.

Overall, the relevance of public intervention has to be seen in light of the fact that two large and successful clusters for leather goods and traditional handicrafts in the Yogyakarta area (Central Java) have developed virtually without public intervention. The clusters' initial driving force was demand from international tourists visiting Yogyakarta. In the early 1990s, trading houses started to purchase part of the clusters' production for sale to large retail chains in Jakarta and for exports, mainly to Southeast and East Asia.

Some Failures

In many cases, cluster development policies in Indonesia have not been successful. In essence, most failures can be attributed to the fact that one or more critical success factors for successful cluster development were either not existing or not addressed correctly. Neglecting existing and potential market linkages of clusters is one reason for the failure. Prerequisite for successful cluster development is the cluster's potential to access growing markets. However, because of policymaking that is too centralized and oriented on standardized instruments rather than on a diagnosis of each cluster's specific potential and constraints, the cluster's existing and potential market linkage was often neglected in project design.

For example, in the mid-1990s a series of smaller government programs for technical upgrading of a small-scale coconut oil cluster were implemented near Polmas in South Sulawesi. However, the town was in deep economic crisis: the small local port was losing more and more transit business to the larger ports of Pare Pare and Makassar. Almost exclusively oriented toward supplying local street stalls and restaurants, the cluster faced a strong decrease in demand. Accordingly, it hardly reacted to the government's technical upgrading programs. Given the abundance of coconut in the area, a search for a medium-scale investor who would have opened up links to growing urban markets for example, in Makassar, Banjarmasin, or Surabaya, and developed links to smaller cluster enterprises would probably have been a more appropriate strategy.

Neglecting or even eroding SME's potential self-help organization is also a reason for the failure. Strong and active self-help organizations of cluster members facilitate collective learning, and processes of strategic orientation can play an important role in developing new markets and supply channels. They are indispensable for implementing advanced cluster development strategies comprising collective branding, standardization and distribution, collective interest representation against monopsonistic client structure, or enforcement of quality standards on input suppliers.

A specific case in point are the common service facilities (CSFs). When installed, the facilities provided a focal point for cluster members and stimulated cooperative spirit and learning. However, instead of gradually involving self-help organizations/co-operatives and companies in the management and financing of the CSFs as a means to strengthen intracluster linkages, and also to build "ownership," the facilities remained under government management and budget. As most CSFs charged only small fees, if any, and budget constraints led to drastic declines in government funding, equipment became outdated fairly rapidly and service levels could not be maintained. Over time, many, if not most, CSFs have lost their relevance as service providers and are now in a desolate physical and financial state.

Limited support from local government or private organizations is another reason for the failure. Most local governments seem to be aware of specific constraints of clusters in their areas that are often related to insufficient transport, telecommunication, or electricity infra-

structure. Anecdotic evidence suggests that local officials were prepared to flexibly extend support whenever possible, for example, by assisting producers in finding an appropriate location for sales staff on an interregional road, or by providing enterprises without terrestrial telephone connection with a hand phone on personal credit. However, lack of budget autonomy severely restricts local government's abilities for appropriate and hands-on support in, for example, repairing defects in a trunk road connecting producers to the main road. Unfortunately, decentralization has so far stopped at the district level and has not significantly enhanced autonomy and action potential of those territorial units that are closest to smaller clusters, namely the *Kecamatan* (district) and/or the *desa* (village).

With respect to limited support from private organizations, it has been found that not all private organizations are interested in establishing business networks with clusters, especially those producing only for local or supplying stagnated markets ("artisinal" type of clusters). Another reason is simply that the clusters are located in isolated rural/backward regions that are far away from potential supporting private agencies such as banks and training institutes or universities.

Summary of Main Contributions of the Study

This study has three main contributions. First, the study has found that, according to their level of development, there are three types of clusters in Indonesia. The first one is called "artisinal" cluster, which dominated clusters in Indonesia, indicating that the process of clustering in the country is still at an infant stage. This type of cluster displays many characteristics of the informal sector, with level of productivity and wages being much lower than those of clusters dominated by SMEs. The second type is called "active" clusters, which have developed rapidly in terms of skills improvement, technological upgrading, and successful penetration of domestic and export markets. The third type is modern or "advanced" cluster in which many active clusters are more developed and become more complex in structure.

Second, the study has demonstrated that SME development policies with a clustering approach are important from a public policy perspective. This strategy makes it more effective and more efficient for government to provide technical assistance and general facilities to a group of firms in one place than to individual firms in dispersed locations. Also, from a regional economic development policy perspective, this approach is important, as development of a cluster in a region will also promote development of other local sectors in that region, and hence economic growth of the region.

Third, the study has found that in many cases, cluster development policies in Indonesia have not been successful. In essence, most failures can be attributed to (1) neglecting cluster linkage to markets; (2) neglecting or even eroding SMEs' self-organization potential; and (3) limited support from local government and private organizations.

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