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Business Development Services for Small and Cottage Industry Clusters in Indonesia: A Review of Case Studies from Central Java

By
Henry Sandee and Sandra C. van Hulsen

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Henry Sandee
Vrije Universiteit Amsterdam
Sandra C. van Hulsen
UNIDO Indonesia

Abstract
This paper presents evidence on the contribution of business development services to successful development of small and cottage industry clusters in Indonesia. Successful cluster development is characterised by technological change through process and product innovations. First, we present cases in which the role of traders has been very prominent. Traders can be important providers of BDS to small-scale enterprises. Second, cases are reviewed that highlight an additional role that leading producers may play in provision of BDS to their colleagues. At the end of the paper, we draw some lessons from the cases, and discuss the role of private vis-à-vis public BDS for cluster development. A distinction is made between BDS in buyer-driven and producer-driven change processes in clusters.

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Henry Sandee[1]
Vrije Universiteit Amsterdam
Sandra C. van Hulsen
UNIDO Indonesia

1. Introduction

This paper focuses on successful clusters in Indonesia, and we discuss what kinds of business development services (BDS) have been beneficial for their success. In Indonesia clustering of SSCI is a highly significant phenomenon. Manufacturing employment in the small-scale and cottage industry (SSCI) sector in Indonesia tends to cluster geographically and according to economic subsector in urban and, especially, rural areas. The majority of SSCI clusters in Indonesia are marginal clusters, located in rural areas, which produce basic products for poor consumers. There is however also growing evidence of existence of dynamic clusters which are characterized by technological change, growth of firms, output and employment through time (Berry *et al*. 1999). In this paper we concentrate on these dynamic clusters. The paper highlights the role played by private providers and public providers of business development services in the development of dynamic clusters. We argue that private providers are the main agents of change in successful SSCI cluster development but that, in addition, the role of public providers remains of interest.

More specifically, in this paper we intend to address the following issues on the basis of a review of the development of selected dynamic clusters:

a. What kinds of private BDS have been important in the successful development of these selected clusters? What is the role played by larger firms, traders, and suppliers of equipment and spare parts?
b. What kinds of BDS does the government provide to clusters? Under which circumstances is public BDS effective?
c. What are the lessons that we can draw from these cases, and what kind of framework might we pull together on the effectiveness of BDS for the development of clusters? What are the implications for donor agencies?

2. The Importance of SSCI Clusters in Indonesia

It is increasingly recognized that industrial clustering in developing countries is significant. Schmitz and Nadvi (1999) point out that the growing amount of case material shows that clusters are common in a wide range of countries and sectors. Their statistical significance in industrial production is hard to determine, however, because economic regions do not respect administrative boundaries and industrial classifications often fail to capture clustering of small-scale economic activities (Schmitz and Nadvi 1999: 1504).

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Indonesia is an exception because the Ministry of Industry and Trade provides a listing of so-called *sentra industri* or clusters. *Sentra industri* are defined as geographical groupings of at least 20 similar enterprises. Exceptions, however, are made for groupings of small enterprises which export (part of) their products. In such cases, smaller groupings are also registered as clusters. The *sentra industri* data suggest that there are very limited differences in average firm size in clusters between the main industrial subsectors, such as food-processing, textiles, wood products and structural clay products. Firms in clusters employ on average 2-3 workers. Sandee *et al*. (1994) and Klapwijk (1997) estimated the importance of clusters in the province of Central Java:

a. There were some 4200 *sentra industri* in Central Java in 1989. Together these clusters employ some 50 percent of all manufacturing workers.
b. Since the majority of clusters in Central Java are groupings of small-scale and cottage enterprises, we have estimated also the share of clusters in employment generated by all such enterprises. We found that clusters provide some 63 percent of all employment in cottage and small-scale manufacturing.

Table 1 summarizes main characteristics of *rural* industry clusters in Central Java. It ranks clusters according to the value of investments in equipment which is an indication of the different barriers to entry (Weijland 1999). The table shows that clusters are diverse. Bamboo weaving, ceramics, palm sugar, etc. are marginal activities that are carried out by rural households in the absence of more rewarding income generating employment. In such clusters the advantages of clustering are confined to lower transaction costs in input collection and marketing output. In contrast, embroidery and garments appear more dynamic and these activities require substantial investments and output. Products of the latter clusters are marketed over much wider areas than the marginal clusters.

Table 1 Rural clusters by subsector: weight, clusters size, and investment, and yearly gross output (1989)

Product	Percentage of cluster total	Enterprises per cluster	Investments per enterprise (Rp. 1,000)	Gross output per enterprise (Rp. 1,000)
Bamboo weaving	21.5	69.4	11.8	751
Ceramics	1.4	64.8	17.1	680
Palm sugar	17.8	120.0	27.6	599
Tempe	10.7	28.0	38.6	4,854
Textiles weaving	0.8	45.2	51.9	4,404
Krupuk	5.6	59.1	76.8	4,340
Bricks	6.2	41.5	87.1	3,147
Tailoring	3.0	18.3	97.5	1,977
Furniture	4.5	38.9	112.7	5,187
Batik	3.3	96.7	117.8	1,536
Roof tiles	4.7	65.0	148.7	1,814
Farm tools	1.2	33.4	154.3	3,273
Leather	0.4	35.4	241.7	9,761
Tahu	2.4	33.6	299.5	11,853
Embroidery	0.8	86.3	385.7	46,482
Garments	0.8	47.1	731.6	13,143
Other	14.9	44.0	177.2	5,474
Total	*100.0*	*63.9*	*85.6*	*3,446*

Source: Klapwijk (1997: 76) and Weijland (1999: 1522)

3. Dynamic Clusters

In the period 1986-97 the Indonesian economy was characterized by a prolonged period of high growth in both urban and rural areas. Selected clusters were able to accommodate to these changes in incomes by upgrading technology, making better products, and selling output to supra-local and, sometimes also, international markets. Dynamic SSCI clusters can be found in virtually all subsectors of the manufacturing sector in Indonesia, but in some subsectors they are more prominent than in others.

An example is the clusters of coppersmiths in the village Tumang in the Boyolali regency, where enterprises with more than 50 workers co-exist with numerous household enterprises. The large firms communicate through faxes with their Indonesia and international customers. These firms have representatives in the larger cities of Indonesia and participate in national and international trade fairs. The large firms may call upon the services of the household enterprises when the orders exceed their own production capacity. The household enterprises also manufacture basic utensils which are sold at local markets. The large firms and the household enterprises in Tumang produce for different market segments; however, their simultaneous presence in the cluster encourages flexibility.

Another example is the roof tile cluster in the village Karanggeneng, also in the Boyolali regency. In this cluster producers collaborated by jointly purchasing new equipment which makes it possible to manufacture better tiles for dynamic markets. Individual purchase of the equipment, a clay mixer, is too expensive and risky for pioneer adopters. Once the new market outlets have been secured, and production increased, adopters frequently decide to buy their new equipment individually. But collaboration in the cluster has been essential to foster technological change during the difficult period of pioneer adoption.

The case studies reveal one of the most distinguishing features of dynamic clusters, namely the occurrence of *technological upgrading processes* (Sandee 1995: Schmitz and Nadvi 1999; Weijland 1999). Dynamic clustering is also an advantage to traders because it brings down transaction costs. It is cheaper to collect output from many small producers that are located in the same village than from dispersed small enterprises scattered over the countryside. In general, output of dynamic clusters is sold over a wider area than that of traditional clusters.

There are several issues regarding dynamic clusters and innovation adoption that are of relevance for the discussion in this paper:

a. Field evidence suggests that small and cottage enterprises in clusters are more involved in technological change processes than their dispersed counterparts (Weijland 1999). This suggests that clustering may foster innovation adoption. Clusters are in the advantageous position because small producers are able to share the costs and risks of innovation adoption. This is especially relevant when innovation adoption concerns so-called ‘technological indivisibilities’ that require inter-firm collaboration to render technological change feasible. In dynamic clusters, there is frequently a degree of division of work among small firms. Skills and wages of the workforce in dynamic clusters are higher.
b. Innovation adoption does not come about by itself, but it is initiated by actors (agents of change). Initiators may well be the producers themselves. Especially larger

producers in clusters may be pioneers in technological change processes. However, there is ample evidence, discussed below, that big firms and traders may also play a very important role. Big firms may stimulate adoption of new technology by their subcontractors. Traders may do the same when they spot new domestic or export market opportunities that can be fulfilled only after technology upgrading by small producers. Finally, suppliers of equipment may offer their products on favourable terms to penetrate new clusters of small producers.

4. Business Development Services: An Overview

We have studied the growth trajectories of selected dynamic clusters in the province Central Java, Indonesia. In our cases, the growth trajectories concern technological change through process *and* product innovations. They lead to making and marketing new products and substantial increases of productivity. Clustered small enterprise has the opportunity to adopt new equipment and machinery that is beyond the financial and technical capabilities of individual small firms. Collaboration among small producers makes it possible to adopt so-called ‘technological indivisibilities’.

The report to the Donor Committee on Small Enterprise Development (Gibson *et al.* 1997) provides an overview of possible instruments that may be employed by BDS organisations. A distinction is made between so-called micro, meso, and macro level instruments. In this paper, we concentrate on reviewing the importance of various micro level instruments only for the development of selected clusters. The report (1997: 28-54) distinguishes the following micro instruments:

a. *Training*: this includes both business management and entrepreneurship subjects and vocational subjects. It seeks to develop skills and knowledge on issues that include marketing, bookkeeping and dealing with specific problems. Training is one of the most important instruments used in small enterprise development. The biggest change in the training approach over the last few years has been in attitudes towards charging for training, and it is increasingly acknowledged that small producers will pay for things that they value.
b. *Counselling and advice*: this refers to one-to-one advice and discussion between a private or public counsellors and small producers. As a one-to-one exercise, it is inevitably very resource (labour) intensive. There are good experiences with the provision of counselling as a follow-up to training. This is reported to be a recognised way of enhanced learning. However, it is recognised also that it is relatively expensive, and, consequently, it is not yet sure whether it can be provided on a cost-recovering basis to small producers.
c. *Developing commercial entities*: this refers to the setting up of businesses by BDS providers that supply specific services that are needed by small firms to overcome key constraints or fill identified gaps in the existing marketing patterns. There may be a need for the active creation of such entities in case private sector partners are not aware of opportunities.
d. *Technology development and transfer*: this refers to the design and development of technologies and their dissemination to small-scale enterprises. Two main views are

distinguished with regard to technology. The first approach sees technology development in terms of externally developed technology (by BDS experts) and the main trust is to market new technology among the small producers. A second approach is stressing the importance of indigenous technology development and it emphasises the development of technological capabilities by the small producers themselves.

e. *Information*: this concerns the provision of access to a variety of information. It includes information on trade fairs and exhibitions, and also learning visits to others small firms in different locations. Business one-stop-shops have been created by public agencies and NGOs' to facilitate small firms' access to information.
f. *Business linkages*: finally, there may be (public or private) interventions aimed at strengthening the commercial linkages between small firms and big firms, and among small firms themselves. The former refers principally to subcontracting, while the latter include strengthening of collaboration among small firms in clusters.

In the remainder of this paper we will review the relevance of these various BDS instruments while discussing the trajectories of development of selected dynamic clusters. We discuss cases from field work in Central Java and some additional experiences from UNIDO (1998) in Indonesia.

5. Case Studies: The Role of Traders in BDS Provision

There is ample evidence of the important role played by traders in linking rural producers to urban and export markets (Alexander 1987). The high population density of rural Java facilitates their role as brokers for rural development. Trading the output of clustered firms is of special interest because collecting products from many producers that operate close to each other reduces transaction costs. We make the following distinction:

a. First generation traders refer to so-called conservative traders. They concentrate on provision of marketing services and credit to producers in clusters;
b. Second generation traders are more intensively involved as they also provide additional BDS services such as training and quality control. Furthermore these traders may also stimulate small producers to adopt innovations.

5.1 Trading Leather Goods (first generation)

Our first case on the role of traders comes from a leather goods cluster in the province of Yogyakarta, Indonesia. This is a very large cluster with production being concentrated in 10 distinct villages. Main output includes bags, belts, and wayang puppets. A limited group of 14 traders are responsible for marketing output and provision of credit. Output is sold to domestic markets, tourists in Indonesia, and foreign tourists. Manufacturing leather handicrafts is a household activity that is carried out unpaid family labours. Technical skills are relatively high and they are based on traditions. There is virtually no inter-firm collaboration in the production process. In addition, government agencies have provided several well-rated training throughout the years that have contributed to a further increase of technical skills.

Traders provide specified orders including samples of products that need to be produced. Samples are designed by the traders themselves or by their clients that operate near main tourist resorts. This marketing strategy was successful during Indonesia's period of rapid economic growth. Presently, however, the cluster is facing declining sales as a consequence of the economic crisis and the lower tourist arrivals to Indonesia [2]. Traders in the cluster have not (yet) used the crisis as an opportunity to venture into new markets. The decline of the Indonesian currency has made Indonesian handicrafts cheaper on international markets. Traders are afraid, however, that producers will use new ideas from direct contact with export markets to develop direct links with foreign traders and bypass them. They do not stimulate producers to get to know the market.
Also, these traders are involved in distributing a wide range of products, and, clearly, this limits their interest in upgrading specific product lines only. Some producers have attempted to design new products by copying samples from international leather fashion magazines. However, their lack of marketing experience and reluctance on the part of the traders has not yet made this undertaking very promising. Moreover, presently, traders pay producers some 50 percent of the value of output when ordering products. This allows producers to buy inputs and organise production. Producers that want to develop their own designs and export directly, are soon confronted with cash shortages as traders do not supply advance payments under these conditions, and there is a credit crunch during the crisis.

5.2. Trading Handicrafts (second generation)

Our next example highlights a more proactive role of traders in the development of clusters by providing BDS. We discuss a case of a trader who has established a registered trading company in 1995 that deals with so-called 'functional art'. Presently, the company employs around 200 employees and it has business linkages with more than 5,000 producers in selected clusters in rural Java, Bali, and Lombok. All clusters concentrate on the production of handicrafts made of natural materials like wood, leather, metals, etc. Clusters that participate in the network of this trading company have a long-standing tradition in the production of handicrafts, and their present focus on export markets builds on these traditions.
Indonesian producers in handicrafts are generally know for their excellent skills in the manufacturing of fine arts, but they are used to produce small quantities and according to their own time schedule. The trading company concentrates on export markets. It is responsible for design and selection of raw materials in accordance with the preferences of international customers. The trading company's marketing strategy is based on securing orders from large customers in the West and distributing the orders among the clusters. The company pays much attention to creating awareness among producers about the need to produce in accordance with the requirements of the export markets. It invites representatives of clusters to visit its showrooms and understand the organisation of the

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[2] This trend is in sharp contrast with the developments in another leather goods cluster located in East Java. Here producers were able to reorient marketing away from their dependence on tourists. In contrast, producers have become much more active in marketing themselves through participation in trade fairs, developing own trademarks, and use of attractive catalogues with a display of self-designed products that can be ordered.

export trade. It employs a group of 40 workers who provide on the job training and supervision to the clusters. The company allows clusters to sell their products directly to the market too as longs as they are able to fulfil their contracts. Producers use the designs of the trading company for their own sales. This is not considered a problem as the company considers that producers do not have the capacity to generate their own designs in the future, and due to ongoing changes in demand particular designs will be out of fashion soon.

6. More Case Studies: The Role of Traders, Government Agencies *and* Leading Producers

We continue with some case studies in which the role of traders in the provision of BDS to SSCI clusters is less prominent, and where specific producers are active too. We will pay particular attention to the role played by leading producers in providing BDS to other producer in their proximity.

6.1 Metal Casting

The metal casting cluster in Ceper is well known in Indonesia. The cluster has more than 150 enterprises that range from micro enterprises employing 10 workers specializing in the production of simple fences of cast iron to large firms with more than 200 workers assembling parts for the national railways and automotive industry. There are intensive and complex inter-firm linkages that are adjusted in accordance with the specific orders that big firms receive.

Buyers of output are the main initiators (change agents) of the technological upgrading processes in the cluster. Their continuous demand for better quality of output is the driving force behind process and product innovations among the producers. The main buyers of the output have an ongoing dialogue on quality of output with the leading firms in the cluster. The latter disseminate their expertise to the others in the cluster through the existing inter-firm linkage patterns and subcontracting. Leading firms are known to search for BDS services. They are also willing and able to pay for such services. Their interest for BDS is explained by their access to dynamic national and international markets. Leading firms get their BDS from both private and public sources. There are a few private business consultants that are regarded highly for their technical expertise. They provide technical advice on new production processes and product design.

Government agencies have established together a common service technical facility that is used by many firms in the cluster for finishing of cast iron products. This service has been set up at subsidized rates. Similar ‘commercial entities’ have been established by leading producers. They offer better services but they are more expensive.

Leading firms in the cluster are the main providers of a range of BDS to the smaller enterprises. BDS is ‘part of the package’ for smaller enterprises that operate in subcontracting networks of the leading firms. Training and counselling are provided to the smaller enterprises in accordance with their capabilities and the need for leading firms to ascertain high quality of the half-fabricates that are manufactured by their subcontractors. Technology development and transfer also take place mainly through the subcontracting networks.

There are also small enterprises in this metal casting cluster that do not participate in subcontracting networks but that produce directly for final consumers. Learning by doing and advice from colleagues are important strategies to upgrade product quality through time. These producers make much more use from the subsidized BDS from government agencies and NGOs compared with small firms that are embedded in subcontracting networks.

6.2 Furniture

The wooden furniture cluster in Jepara is famous throughout Indonesia. It specializes in the production of a wide range of traditional and, increasingly also, modern products. The cluster is very large and it contains thousands of small enterprises and about a hundred larger firms. Total employment in the cluster is estimated at close to 100,000 including all linkage units. There are two very distinct production and marketing systems in the Jepara cluster. First, there is the domestic segment that has remained technologically stagnant throughout the years. The domestic market is served by smaller firms that market their output through a network of furniture shops. There is little need for BDS in this technologically stagnant market that grows steadily but which does not require adjustments in production and marketing patterns on a regular basis.[3]

Second, there is the export market that has been growing fast since the mid-1980s when Indonesia made important progress towards liberalization and deregulation of its import and export trade. The export industry is presently booming as a consequence of the Indonesian economic crisis and the steep decline of the currency. Smaller enterprises participate widely and increasingly in the export trade. They are involved in this trade exclusively through subcontracting arrangements. Inter-firm linkages in the export production sector are complex with specific stages of the production process out contracted to specialist small firms and craftsmen. Foreign buyers are the main agents of change in the export trade. They determine the products and designs to be manufactured. They are the ones who communicate with international furniture markets. BDS to smaller enterprises in the export sector is arranged along similar lines as in the metal cluster discussed above. Leading producers are the principal providers of BDS through their subcontracting networks. Similar to the metal casting cluster, training, counselling, technology development, and information are ‘part of the package’ that is used to strengthen subcontracting relationships.

Public BDS at the micro level concerns provision of training courses to smaller firms. The subsidized courses are popular among smaller firms that are not involved in subcontracting networks but produce for the domestic market. Improving designs and marketing skills are especially relevant. The government has, however, played an important role in the development of the industry ‘in the background’. The export trade was boosted very much by the development of container facilities at a nearby regional harbour. Likewise this trade was fostered by the improvement of regional infrastructure (roads, telephones, and faxes) that stimulated international trading of furniture.

[3] During the economic crisis in Indonesia production for the domestic market declined substantially. Recently, this market has gradually stabilized and domestic demand has increased slightly in the last year.

6.3 Woven Cloth

A third cluster that was monitored concerns the production of traditional and modern woven cloth designs. The cluster serves both national and tourist markets. Main products include shirts, dresses and accessories. Most firms operate with handlooms, but a small number of larger firms made the switch to power-operated looms. The cluster is characterized by a balanced division of work among enterprises, and there exists a strong patterns of inter-firm relations.
There have been two main processes of innovation adoption in recent years. In the first place, the introduction of the power loom has resulted in important increases of output. In the second place, the penetration of export markets has resulted in the introduction of a wide range of new designs in accordance with international tastes.
The development of the cluster is characterized by the absence of principal buyers that play a leading role in initiating change among the producers. Most sales are to retailers in Java and Bali. The main agents of change are the larger producers in the cluster, especially those that have access to power looms. They are the leaders who have trade networks in the major Indonesian cities and tourist resorts. They pay much attention to getting access to updated information on the preferences of tourists so that unsold stocks can be kept at a minimum.
It is widely acknowledged that the government provided relevant BDS by sponsoring the participation of selected producers from the cluster in national and, occasionally, international trade fairs. Such visits were very useful to understand the quality, kinds, and designs that are popular among tourists.
BDS by leading producers in the cluster is chiefly confined to the smaller firms that are part of their subcontracting networks. The BDS interventions work in a similar way compared with the metal casting and furniture clusters discussed above. Access to BDS by small enterprises that are not embedded in subcontracting networks are very limited. Their main sources for technological development are learning by doing and imitation of production processes and designs of their neighbours.

6.4 Tile Making [4]

Tile making is a typical clustered industrial activity. We can find tile clusters throughout rural Java, and most clusters are located near rivers or irrigated rice fields that supply clay. Since the mid 1980s demand in both urban and rural areas has been shifting from traditional tiles to so-called pressed tiles. The latter are made with hand or power-operated presses and a power-driven mixer to prepare the clay. Rising demand for pressed tiles has stimulate adoption of the press technology in an increasing number of traditional tile clusters throughout rural Java. We studied a cluster in which a government agency provided useful information by organizing a study tour for selected producers to another site where the press technology was widely in use. The tour included a visit to a supplier of equipment who used this opportunity to promote his products and open up new markets.
One of the distinguishing features of the press technology is that successful innovation adoption requires the introduction of a power-driven clay mixer. Leading producers

[4] The tile cluster was already introduced in Section 5 of this paper

purchase such expensive mixers only with the assurance that others will pay for these services. It is in these networks that smaller enterprises in the cluster receive BDS from the larger counterparts. Larger firms, and owners of mixers, give advice on printing tiles and firing output. Also they encourage small producers in the cluster to adopt the press technology which leads to increased demand for their mixer services.

6.5 Brass Handicrafts [5]

Traditional brass production in this cluster is a cottage economic activity that is carried out during time of the day, season, or year when there is a lack of access to more rewarding income generating activities. Traditional production is an individual matter: each household buys its inputs at the village market, makes brass handicrafts at home without involvement of paid workers, and sells their output to traders that come to the village market in the late afternoon.
Technological change in this cluster was triggered off by apprenticeships of selected traditional producers at modern brass factories in the cities. These relatively well-educated young producers considered innovation adoption as the only viable strategy to make a prolonged stay in the village economy attractive. During the period of apprenticeship they learned new designs, use of alternative materials, and new production methods. New output was no longer confined to kitchen utensils but, instead, it concerned luxury products that were in increasing demand by the growing Indonesian middle class. Government agencies played an important role in the innovation adoption process in this cluster by subsidizing the participation of producers in trade fairs. These visits were very useful to establish links with traders and customers. Further development of this brass handicraft cluster is explained by the frequent interactions between producers and traders of modern brass handicrafts.
Adopters have upgraded their production methods and designs through the years in accordance with changes in the structure of demand. Modern brass handicraft production differs substantially from making traditional brass kitchen utensils. Production is carried out on a much large scale and adopting firms employ many wage labourers. Furthermore, modern production leads to subcontracting relations with smaller producers specialized in specific stages of the production process only. In addition, traditional producers are active also as wage workers in the modern brass handicraft industry in times of high demand. It is in such networks that BDS flows from early adopters to the other producers in the cluster.

7. Lessons Learned: Towards a BDS and Cluster Development Framework

In the literature on small-scale enterprise development a distinction is made between producer-driven and buyer-driven change processes (Humphrey and Schmitz 1996). The distinction is useful when we want to understand how small enterprises develop through time. The distinction refers to the role played by respectively producers vis-à-vis buyers / traders in promoting technological change in dynamic clusters. It is also useful when we want to develop a framework for BDS to clustered enterprise. The distinction helps us to

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[5] We refer to Section 5 for some background information on this cluster

identify various actors and change processes that may be supported by private and / or public BDS.

7.1 Buyer-driven Change Processes

Technological development is externally initiated in *buyer-driven change processes*. Buyers approach small producers with new ideas, designs, products, etc. BDS is embedded in the trade relations between traders and clustered producers. In such situations small producers do not have an 'information problem' that might hamper innovation adoption as this is fully provided by buyers / traders. Technological diffusion in the cluster will take place along subcontracting networks and inter-firm linkage patterns, and BDS is provided by buyers and selected producers whenever necessary. It is not necessary that all producers have direct relations with buyers, and selected producers are likely to provide training, counselling and information to their colleagues.

Private provision of BDS is the main instrument in buyer-driven change processes with buyers and specific producers in clusters each playing specific role in the development of the cluster. We refer to the metal casting and furniture clusters discussed above. In both cases, traders are responsible for information, new designs and trade networks, while leading firms in the cluster provide a range of BDS services (training, counselling, and technology development) so that the latter will be able to meet new production and quality standards.

The same case studies show that there is also a role for provision of public BDS in buyer-driven change processes. First, public agencies may aim at triggering off buyer-driven change processes through linking and matching customers and SSCI clusters. Participation of the latter in exhibitions and trade fairs is relevant, as well as organising study tours for domestic and international buyers. Another possibility for public BDS arises when innovation adoption encompasses 'technological indivisibilities'. In such cases there may be scope for public development of common service facilities. However, field experiences show that such entities mostly gear their services to those producers that do not have access to the dynamic networks that are privately managed. Consequently, it appears that such public entities are not sustainable in the long run.

In practice, we have seen in this paper that a distinction can be made between first and second generation traders. The distinction was useful to highlight that buyers may be either conservative or progressive (proactive) when it comes to fostering technological change in SSCI clusters. We found that second generation traders are much more prominent in export trade networks, while first generation traders dominate domestic trade channels. Export trade exposure appears to offer the best framework for the emergence of private BDS mechanisms. Public BDS may aim at triggering off private BDS. In the case of first generation traders, there may be a greater role for public BDS because there is likely to be an additional need for stimulating competition among the domestic traders. In general, public BDS may aim at transforming first into second generation traders.

7.2 Producer-driven Change Processes

In *producer-driven change processes* technology development is indigenous with small-scale entrepreneurs acting as the main change agents. The small producers are the ones that have to solve the 'information problem' and get insight into alternative production processes and products that lead to higher profits. Small producers may need to become proactive in situations where strong traders or other buyers are absent or unwilling, and there are new market opportunities to be explored. There appears to be a role for public BDS in linking and matching producers to markets. Visits to buyers, retailers and wholesalers, markets and fairs, may be useful to establish new trade networks that are outlets for new products. In the absence of dynamic trade networks, it is important to increase the mobility of producers as a prerequisite for technology development. Successful producer-driven change processes need strong local leaders to trigger off technological change processes in clusters. The case study on the woven cloth cluster is a fine example of public support to participation in trade fairs that has triggered off technological change processes. Similarly, public BDS has been beneficial to the development in the tile making and brass handicraft clusters discussed above. In all these cases, public BDS has allowed small producers to take initiatives.

We mentioned in the beginning of this paper that evidence from dynamic clusters suggests that their internal heterogeneity is pronounced. 'Except in rudimentary clusters, medium and large enterprises have emerged and play an important role in the governance of these clusters' (Schmitz and Nadvi 1999: 1504).BDS may contribute to the emergence of such producers through the provision of support to selected producers. There are fine examples in Indonesia of the building of so-called 'social capital' through lengthy gestation periods (Weijland 1999). It calls for a long-term involvement of BDS providers, and it appears that this trajectory is particularly relevant for public interventions.

Strong local leaders will, in their turn, provide training, counselling and other BDS to their colleagues in accordance with patterns of inter-firm collaboration. Both private and public agencies may try to 'hook into' these networks.

7.3 Conclusions

In this paper we have concentrated on dynamic small enterprise clusters in rural Java, Indonesia. We have analysed the role played by private and public BDS in their development. The case studies have shown that private and public BDS are not in conflict with each other, but, rather, they appear to be beneficial both in fostering the development of clustered small enterprise.

It is useful to distinguish between buyer – driven and producer- driven change processes when we want to gain better insight into the specific roles of private and public BDS in the development of dynamic clusters. In buyer – driven change processes private BDS mechanisms are prominent in initiating and disseminating technological development among clustered enterprises. BDS is often 'part of a package' that is offered by buyers, especially so-called second – generation traders. In such situations, public BDS may be most effective when it aims at triggering off a more proactive role of traders.

Alternatively, public BDS may be more prominent in the absence of both traders and strong local leaders. In such a situation, formation of trade networks and emergence of strong local leaders are prerequisites for technological development of clusters. Producer-driven change processes require a more substantial BDS involvement compared with buyer-driven change processes because more interventions are needed to link and match producers and buyers.

7.4 Implications for Donor Agencies

Small enterprises in Indonesia are again high on the agenda of donor agencies and policy makers. It is increasingly recognised that clustered small enterprise offers scope for cost-effective BDS programmes because large numbers of small entrepreneurs can be reached at a 'single stoke'. Our case studies highlight the important role of traders in BDS provision to clusters. Traders can be important agents of change and initiators of technological change processes. Strengthening the role of traders in small enterprise development deserves more attention as a cost-effective strategy to provide BDS to small enterprises. Building trade networks may be a necessary first step when strong traders and local leading producers are absent. Provision of information, link and match producers, traders, and markets appears to be a useful point of departure to build such networks. Public BDS can be a useful channel to stimulate traders to be more proactive and provide private BDS to clustered enterprise.

The presence of strong local producers may also offer opportunities for successful provision of BDS support. Our cases have shown that in such situations the main challenge becomes how to hook these producers into promising trade networks. Once change processes in clustered have been triggered off, there appears to be a limited role for public BDS to support small enterprise clusters. Our field work has shown that, in such situations, both traders and leading producers will find their way to provide BDS to growing numbers of colleagues in clusters.

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