

## **SERIE RESEARCH MEMORANDA**

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### **Abstract**

This paper reviews the promotion of small scale and cottage industries (SSCI) in Indonesia with particular reference the employment creation. The review is carried out for the province of Central Java, which is the 'heartland' of SSCI employment. Participation rates in technical and financial assistance programmes are low. The programmes may continue for many years before a majority of the SSCI producers will be reached. A field survey was executed to gain insight into the effectiveness of current assistance programmes to enhance the development of SSCI. The analysis highlights that there is little sign of a positive impact of programmes on employment in the less dynamic clusters. In the very dynamic clusters it was found that firms which made use of a combination of technical and financial assistance were most successful in terms of employment generation. Finally, the field works provides indications that present assistance programmes are not a 'cause' of employment growth in SSCI but that they are principally accommodating such growth.



## Introduction

The Indonesian government has long recognized the importance of small scale and cottage industries (SSCI) in economic development. A number of policies and programmes have been formulated to assist SSCIs play their potential role in promoting welfare through employment creation and economic growth. A main agent in the promotion of SSCI is the Ministry of Industry, in particular the *Direktorat Jenderal Industri Kecil* (Directorate General of Small Industries). Its technical assistance can be roughly divided into direct guidance of small firms and activities aimed at linking SSCI to large private and government enterprises. Financial assistance is the responsibility of the Ministry of Industry, but it is executed by the banking system under the supervision of *Bank Indonesia*. Other Ministries have policies and programmes which aim at the promotion of small scale enterprises in general. Finally, there are numerous NGO's active in the field of small industry promotion.

The aim of this paper is to review the impact of promotion on the development of small scale industries, with particular reference to productive employment creation. The Indonesian economy will continue for the foreseeable future to face an ongoing major challenge to create significant numbers of jobs for the new entrants into the labour market. The Indonesian government gives high priority to employment creation policies and programmes. The review is carried out for the province of Central Java, which can be characterized as the 'heartland' of small scale industrial employment in Indonesia. The impact will be assessed at two different levels. Firstly, an attempt is made to calculate the participation rates of the various distinct stimulation programmes. This provides insight into the percentage of small scale firms which have received technical and/or financial assistance. Our conclusion will be that participation rates are low, and the programmes are so far only reaching a minority of SSCI in a direct way. Secondly, fieldwork was executed in *sentra industri* (clusters of SSCI) in Central Java. The focus was on both an inventory of interventions that have taken place in selected *sentra* throughout the years, as well as an assessment of impact of interventions on firm development and employment. Our comparison between participants and non - participants will show that the combination of technical assistance and credit appears more successful than either alone. Moreover assistance is most effective in supporting dynamic firms. This raises questions concerning the effectiveness of current policy instruments to reach the poor.

## The Role of Small Industry in Developing Countries

It is generally acknowledged that SSCI are characterized by relatively high labour inputs per unit of output. SSCI has consequently been identified as a key sector for employment creation. In order to produce a given amount of products, employment effects will be larger when production is by SSCI compared with large scale industry. Many developing countries, and Indonesia is clear example, have an abundant supply of labour compared with capital, and development of labour-intensive technologies and SSCI may in many cases lead to an efficient use of scarce resources (Poot et al. 1990). SSCI also deserves special attention because it provides an additional source of income to a substantial part of the labour force from low income households (Rietveld and Gorter 1990). Thus, incomes and employment created in SSCI play a special role because of equity considerations. Especially in rural areas SSCI provide jobs and income for low income households with limited access to agricultural income generating opportunities. Rural SSCI are an important starting point for policies to counter poverty. In addition to employment and equity, another reason why SSCI deserve special attention is that they contribute to a favourable development of the balance of payments. They have the potential to contribute to exports, and the induced imports of intermediate products are modest (Thee 1992). Increased labour intensity in industry can be promoted without much concern for scale. Macro policies which are scale-neutral may significantly contribute to the allocation of resources toward labour-intensive industries among which competitive SSCI (Little et al. 1988). In the majority of countries, however, policies are biased towards larger industries, and this may be considered a justification for the existence of direct SSCI assistance programmes.

Insight into the diversity of SSCI is important for policy purposes because prospects and bottlenecks to enterprise growth and employment creation vary widely between distinct manufacturing subsectors (Schmitz 1982). Opportunities for the development of SSCI depend on either strengthening the enterprises' position in given production-distribution systems, or enhancing its competitive strength within the subsector (Gamser 1992). In Indonesia a number of SSCI subsectors have been strongly hit by the development of large scale industry. In several cases large scale (often 'modern') industry has been able to make products which are either cheaper or of superior quality compared with SSCI. Examples include textiles (woven), food processing (rice mills), foodstuffs, beverages, footwear and household utensils. Nevertheless there are also many examples where SSCI have been able to compete successfully with large industry (cf. Rietveld 1988). Recent discussions have stimulated attention for SSCI located in clusters, which can be defined as groupings of small enterprises producing similar output (Schmitz 1989). Clustered enterprise may allow SSCI to reach levels of economies of scale which are unreachable for individual enterprises, and it may also make possible product - and process innovations which exceed the technical and financial capacities of individual firms. The geographical proximity of similar enterprises offers opportunities for interfirm linkages, cooperation, and agglomeration efficiencies (Schmitz, 1989; Nadvi and Schmitz 1994). Clustering is a salient feature of SSCI in Indonesia in both urban and rural areas, particularly in Java, and attention for clustered industrial enterprise (locally referred to as *sentra industri*) is prominent in policies and programmes. Our field research was carried out in 6 clusters.

#### Employment in Small Scale and Cottage Industries in Central Java

Assessments of industrial employment trends in Indonesia are frequently hampered by the paucity and inconsistency of data <sup>1</sup>. The Ministry of Industry defines SSCI differently from the *Biro Pusat Statistik* (Central Bureau of Statistics). The most recent definition of the Ministry of Industry, effective since 1990, defines small and cottage industries as enterprises to be owned by an Indonesian citizen with a total asset value that does not exceed Rp. 600 million, excluding the value for housing and land occupied by the plant. This new definition was simultaneously introduced with a new credit scheme for small businesses in Indonesia (not limited to industrial enterprises) *Kredit Usaha Kecil* (Small Establishment Credit). Banks are required to provide 20% of its total credit to enterprises with total assets of less than Rp. 600 million. Compared with definitions of other government departments and agencies this definition is very broad, and consequently, it includes many businesses which are not classified as small enterprises according to e.g. the Ministry of Finance, the Central Bank of Indonesia, and the Indonesia Chamber of Trade, Industry, and Commerce. The definition of the Ministry of Industry differs most from the one used by the Central Bureau of Statistics. The latter defines the size of the business by total personnel involved in the activities, and small scale industry comprises 5 - 19 workers, while cottage industries employ less than 5 workers. Our experiences in Central Java indicate that the large majority of medium scale enterprises (19 - 99 workers), and quite some large scale enterprises (more than 100 workers) have a total asset value which does not exceed Rp. 600 million. Consequently, according to the definition of the Ministry of Industry, they would be classified as small enterprises (*industri kecil*). There is thus an enormous diversity among the *industri kecil* target group of the Ministry of Industry.

Central Java is the 'heartland' of SSCI in Indonesia. According to Hill (1990), in 1985 slightly more than 20 % of Indonesia's manufacturing employment (in full-time equivalents), in enterprises with more than 5 workers, was concentrated in this province. In 1985, 53.3 % of employment in industry in Central Java was recorded in enterprises with a workforce between 5 - 49 workers, 8.2 % in enterprises with 50 - 199 workers, and 38.5 % in enterprises with more than 200 workers. It should of course be remembered that these data do not take account of manufacturing employment in

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<sup>1</sup>Data - and definition problems have been extensively discussed by Hill (1992).

cottage enterprises, employing less than 5 workers. Hill (1990) has excluded them from the analysis since no reliable information was available on the full - time equivalents of cottage employment which is frequently carried out on an on/off basis during the day, season, or year.

Data from the *Sensus Ekonomi Jawa Tengah 1986* (Economic Census of Central Java) reveal that almost 65 % of the industrial labour force in Central Java was employed in cottage industries, which are generally characterized by low labour productivity, low incomes and wages, and products of low quality. Female participation in cottage industries is significant <sup>2</sup>. The marginal nature of cottage industries in Central Java is confirmed by the domination of low rewarding foodprocessing - and building materials industries within this size category <sup>3</sup>. Small scale industries, according to the BPS definition, employ some 15 % of the workforce, and only in engineering is the percentage much higher than this average figure. Insight into developments of employment of distinct industrial subsectors and industrial size groups in Central Java since 1986 can only be obtained using data from the Ministry of Industry. Data suggest a steady growth of the small enterprise sector in Central Java, with growth of employment being higher than growth of the number of enterprises. This would imply that the average firm size in terms workers is growing <sup>4</sup>.

SSCI in Central Java frequently cluster or group together; they form spatial groupings of small enterprises belonging to the same subsector. For example, small scale roofing tiles enterprises group together. They use the same clay pits, get firewood from the same trader, and may sell to the same middlemen. In the case of the metal casting industry, clustering may be necessary to be able to share the use of very expensive machinery which cannot be economically managed by individual small firms. The small industry clusters - or *Sentra Industri* - are the focal point of the promotion programmes of the Ministry of Industry, as will be discussed further on in this paper. Data from the Ministry of Industry suggest that in 1990, according to their definition of SSCI, about 46 % of all SSCI and 33 % of SSCI employment in Central Java is clustered.

### Promotion of Small Scale and Cottage Industry in Indonesia

#### Macro Policies

National policies to stimulate the macro-economy will have a positive impact on SSCI because of the increase in aggregate demand. Without such a favourable economic development as experienced in Indonesia during the last decades the prospects for stimulating SSCI would not be promising. It should be noted, however, that the growth in income per capita leads to changes in consumption patterns which may not be favourable to the development of SSCI. As far as SSCI

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<sup>2</sup> The Population Census for 1990 provides insight into the importance of female participation in industry. Women constitute 51.6 percent of the total industrial labour force, and 62.9 percent of the labour force in the categories selfemployed, selfemployed assisted by family worker / temporary worker, and family worker. Cottage industries dominate these three categories.

<sup>3</sup> We refer to the findings of the field survey which are presented in this paper.

<sup>4</sup> For 1990, data of the Ministry of Industry are available not only for small scale industries in Central Java but also for 'non - small scale' industries. According to the definition of the Ministry of Industry 2,026,978 persons were employed in small scale industries, while 369,733 persons were employed in other industries, bringing total industrial employment in Central Java in 1990 at 2,396,711 workers. This figure is much larger than the outcome of the Population Census 1990. The fact that some service activities are included in the Perindustrian data cannot make up for the difference. The problem is very likely to be found in the reporting system used by the Kanwil Perindustrian. The *Tingkat II* (regency) levels frequently do not regularly clean their data files, and there is frequent reporting about firms which are no longer in existence.

produces inferior products (i.e., products with a negative income elasticity so that when income increases consumption of these products decreases), producers will face a decrease in demand when incomes grow. Since not all economic groups benefit to the same extent from the macro-economic growth one may expect that even for inferior products there will remain a market based on low income consumers, but the prospects for producers in this sector are poor. Another favourable development for SSCI in Indonesia has been the adoption of an agricultural and rural development policy which has led to a broadly based economic development in rural areas. Since a large share of small scale industry is located in rural areas, SSCI will have benefitted from the various linkages (see UNDP, 1988, Yuwono, 1993)

A negative impact of government policies on SSCI may be expected from general industrial and trade policies as explained in the literature on this subject. These policies tend to affect SSCI in developing countries adversely by favouring large-scale and capital intensive industrialization and discriminating against small-scale industry (UNDP, 1988, Poot et al. 1990). In that case production costs in SSCI are adversely affected by higher costs of inputs, credits and marketing, compared to large scale industries. Large suppliers often get preferential treatment in the market. For example, in government procurement one can observe a clear bias against small scale industry. Export promotion tends to be focused on larger industrial firms. It is much easier for large firms to get access to credit programs than it is for small firms. SSCI producing for export are at a disadvantage because it is very difficult for them to obtain intermediate inputs duty free because they are not big enough to utilise the draw-back system. Although in theory the benefits of general measures to promote the industrial sector may also have been available to SSCI, in practice most of these benefits will have flowed to large industrial firms. According to the judgement of UNDP (1988) these distortions can be observed in many developing countries including Indonesia, although in Indonesia the situation is not extreme compared with other countries. Poot et al. (1990) indicate that scale neutral policies are called for to achieve the aim of the development of an efficient small scale industry sector. As long as such scale neutral policies cannot be fully implemented there is at least one good justification for special incentives and programmes for SSCI.

#### **The Ministry of Industry**

There is a wide variety of programmes to stimulate SSCI. The programmes are addressed to the various inputs (capital, labour, etc) and outputs, as indicated in Figure 1. It is not difficult to check that all inputs mentioned here have received attention in small industry sector programmes in some or other form. The *Direktorat Jenderal Industri Kecil* of the Ministry of Industry is the most important agent in the provision of technical assistance to SSCI in Indonesia. Because of its wide definition of SSCI its target group is extremely broad (see above) <sup>5</sup>.

A number of programmes are currently operated by the *Direktorat Jenderal Industri Kecil* :

#### **1. Program Keterkaitan Sistem Bapak Angkat (Linking Big and Small Enterprise including Subcontracting)**

This programme aims at deepening the industrial structure of Indonesia, and also to reduce inequalities between different types of industrial enterprise. The programme tries to strengthen the

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<sup>5</sup> Policy documents ( *Direktorat Jenderal Industri Kecil* 1992 ) make a distinction between traditional / nonformal SSCI and modern / formal SSCI. The former refers to enterprises with a value of assets less than Rp. 5 million, while the latter refers to those with a value of assets more than Rp. 5 million but less than Rp. 200 million till 1990, and less than Rp. 600 million since that year. The Ministry of Industry also distinguishes different types of SSCI entrepreneurs. In the first place, there are *pengrajin* (artisans) that operate cottage enterprises and primitive equipment. In the second place, *pengrajin pengusaha* (artisan entrepreneurs) operate on a somewhat larger scale, and their equipment is more sophisticated. Finally, there are *pengusaha* (entrepreneurs) who operate with relatively modern equipment.

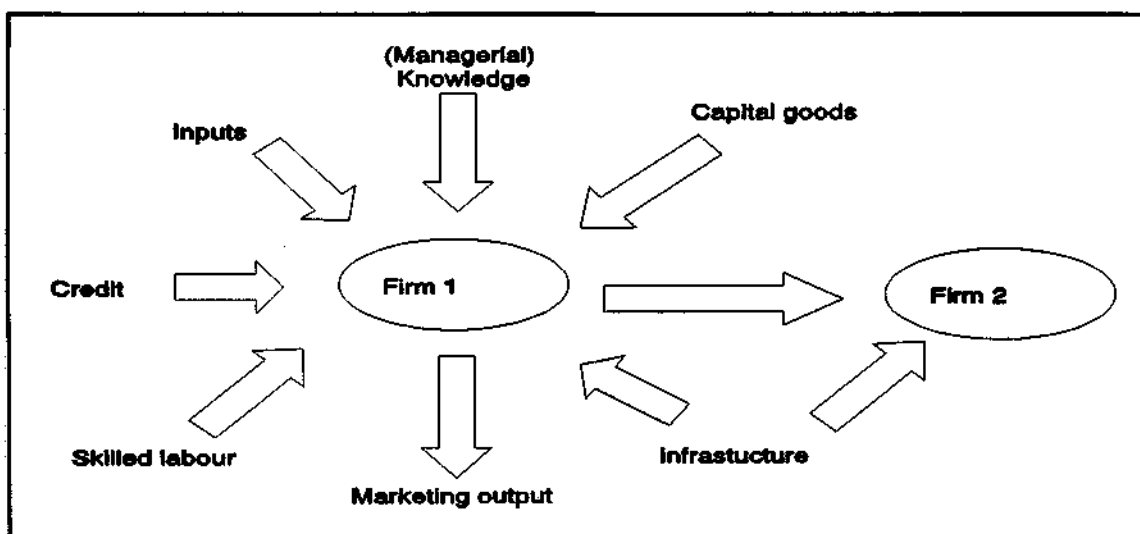


Figure 1. Points of entry of small scale industry programmes

linkages between *industri kecil* and big enterprise. The latter is not solely confined to large industrial enterprises but encompasses big business in general. The programme originally started to develop industrial subcontracting linkages between large and small industrial enterprises with the latter functioning as suppliers of inputs through putting out systems. Large industrial firms were stimulated to buy inputs inside the country instead of imports, and they were also stimulated to buy certain inputs from SSCI instead of making those themselves. The concept has been extended to a more general approach where large scale enterprises (thus not only large scale industries) are expected to assist SSCI in general, including those that have no relation to the branch of the large industry. The support of the large scale industry may include assistance in supply of raw materials, training, technical advice, as well as assistance in marketing of products.

#### 2. Pemanfaatan 1 - 5% keuntungan BUMN (Using Profits for SSCI Development)

State enterprises in Indonesia do not only have to perform as business units, but are also subscribed a role as "activators" (*penggerak*) in development. Since 1989 state enterprises are required by law to spend 1 - 5% of their net profits to develop and assist SSCI and cooperatives. This requirement does not only concern the state industrial enterprises, but also all other state enterprises. Activities that are carried out within this framework include managerial training, technical assistance, provision of working capital, marketing assistance, and provision of loan guarantees to the formal banking system when SSCI are lacking collateral for execution of feasible economic projects. This programme is linked to the *Bapak Angkat* system, in the sense that large enterprises should allocate part of their profits for the development of linkages with SSCI.

#### 3. Kredit Usaha Kecil (KUK) (Credit for SSCI)<sup>6</sup>

Banks in Indonesia are required to provide 20% of their total credit fund (not including the liquidity credit from Bank Indonesia) for the development of small enterprises, including SSCI. KUK is provided to businesses with total assets of Rp. 600 million or less (aside from the house and the land being occupied) for the funding of productive business activities. This programme is on paper linked to the *Bapak Angkat* system, in the sense that large enterprises should assist SSCI to apply and properly use available capital.

#### 4. Penjualan Saham kepada Koperasi (Selling Shares to Cooperatives)

Large enterprises are required to sell shares to cooperatives, including the industrial cooperatives (*Koperasi Industri Kecil; Kopinkra*) to improve their own capital base. This programme is aimed at

<sup>6</sup> KUK is essentially a more liberal substitute for the previous highly directed credit programmes (like KIK/KMKP) which collapsed because of high costs and low repayment.

sentra industri which can only become eligible to buy shares once they have been inaugurated as official (government recognized) cooperatives.

#### **5. Pendidikan dan Latihan bagi Industri Kecil (Education and Training)**

This programme aims at training and skills development of entrepreneurs and their workers. It is executed by the Ministry of Industry in cooperation with state enterprises, and private enterprises involved in the *Bapak Angkat* system. A number of training programmes have been developed and put into practice. Provision of training is frequently linked to the provision of working capital, and very occasionally fixed capital. In case it is fully financed by the Ministry itself it is executed on a modest scale. However, assistance may become more substantial when it is backed up by another state - or private agency. Execution of this programme is as much as possible tied to one of the other programmes.

This training programme is the only programme which has been transformed into a project with a budget. *Bimbingan dan Pengembangan Industri Kecil khusus Golongan Ekonomi Lemah (BIPIK)* (Guidance and Development of Small Industry especially those Operated by Weak Economic Groups) is a project for technical assistance carried out in all Indonesian provinces with participation of the *Kanwil* (provincial level) - and *Kandep* (regency level) industrial offices. Technical assistance is always directly aimed at SSCI and not at other points of leverage in the production - distribution systems in which they are embedded. No financial assistance is provided through *BIPIK*. Policy documents however do mention that provision of technical assistance will be as much as possible linked to the other programmes which fall under the responsibility of the *Direktorat Jenderal Industri Kecil*. These other programmes, especially the *Pemanfaatan 1 - 5% Keuntungan BUMN, Kredit Usaha Kecil* and to a lesser extent the *Penjualan Saham kepada KOPINKRA*, should provide the financial means to small scale industries for follow up to technical assistance. This may include provision of working capital, procurement of equipment, process and / or process innovations, etc. Technical assistance provides the software, while the other programmes should facilitate the small scale entrepreneurs gaining access to finance to purchase the hardware.

#### **Credit for Small Scale and Cottage Industries with Particular Reference to Central Java**

SSCI entrepreneurs do not complain about the high interest rates of formal credit, but do consider access to formal credit to be a major constraint. SSCI are paying considerably higher interest rates when funds are obtained from informal credit markets through middlemen, suppliers, specialized moneylenders etc. Access does not merely concern the availability of a formal banking institution in the neighbourhood, but it is also affected by the provision of services that fit the customers' needs. This often includes a search for collateral in accordance with the characteristics of the target group. Access to formal credit in Indonesia has significantly improved during the last few years. This has happened in spite of the fact that subsidized interest rates have been almost fully replaced by market rates of interest. This replacement has of course made it more attractive to banks to enter this market. The deregulation and liberalization policies have significantly increased the number of financial service points in urban but especially rural areas (Pangestu 1992).

There are different programmes or institutions that are specialized for different segments of the market. *KUK* credit is managed by the commercial banks. The influence of the Ministry of Industry on credit disbursement towards SSCI is limited. The *KUK* target group is extremely broad, and not less than 99 % of industrial enterprises in Central Java would in principle be eligible for *KUK* since the value of their assets does not exceed the limit of this credit programme. The *Unit Desa System* of the *Bank Rakyat Indonesia (BRI)* operates the wellknown *Kupedes* loan programme. It aims at the financing of smaller economic activities compared with *KUK*. This programme provides commercial, non-subsidized credit with interest rates in accordance with the cost of funds. Smaller amounts of credit are provided by so-called micro enterprise finance institutions which are supervised and monitored by the *Bank Pembangunan Daerah* (Regional Development Banks). Also in this case, micro enterprises are treated as a market, to which products are offered with attributes to clients at a price that covers costs (Rhyne 1991). The formal credit market for SSCI is frag-

mented. *KUK* credit has an average loan size of Rp. 38.7 million. The next scheme, *KUPEDES*, has an average loan size of Rp. 790,000 for all loans, while the mini credits provided by, for example, *Badan Kredit Kecamatan (BKK)* mini credit programme has an average industrial loan size of Rp. 91,000.

Informal credit is another important source to finance small scale business activities. There are numerous examples of traders providing credit to finance working capital or even investments. Suppliers of equipment are also interested to provide credit when they feel that this may contribute to the opening of new markets. Dynamic entrepreneurs in clusters generally function as a source of both technical and financial assistance for others. Informal finance is especially used to prefinance the next production cycle of small entrepreneurs who lack their own funds to do so.

### Participation Rates

The impact of the various distinct promotional efforts discussed above can be assessed by estimating the percentage of firms which have participated so far. The estimations presented in tables 1 and 2 are based on data from the Ministry of Industry as well as on information from the various credit programmes which are operated in Central Java <sup>7</sup>. The conclusion that can be drawn is that participation rates are low. The continuation of these programmes, with current budgets, implies that it will take many years before a majority of SSCI will have participated in programmes offering technical and/or financial assistance <sup>8</sup>.

Table 1 Participation Rates of Perindustrian Programmes in Central Java

| Programme                  | Participating SSCI firms by Dec. 1991 | Participation rate (%) |
|----------------------------|---------------------------------------|------------------------|
| 1. Subcontracting          | 2,100 big firms<br>40,000 SSCI firms  | 6.6                    |
| 2. Profit Disbursement     | no info                               | no info                |
| 3. KUK credit              | 6,240 firms                           | 1.1                    |
| 4. Shares for cooperatives | 52 among which Kopinkra               | no info                |
| 5. Training*               | 22,850                                | 3.8                    |

\* The number of enterprises in clusters where BIPK training has been provided was 45,700, which is 7.5 % of SSCI in Central Java according to Ministry of Industry data. Our field experience indicated that at the most 50 % of enterprises in BIPK clusters actually participates in training.

<sup>7</sup> It should be kept in mind that the Ministry of Industry data are not easily comparable with those published by BPS. The findings therefore should be interpreted with care.

<sup>8</sup> The Ministry of Industry does not have a stated target with respect to the participation rates. The Ministry acknowledges the existence of tricking down effects in clustered enterprise. Firms may indirectly profit from assistance provided to other firms.

**Table 2 Participation rates of Some Credit Programmes in Central Java**

| Credit Programme        | Average Loan Size | Number of Industrial Participants | Participation Rate (%) |
|-------------------------|-------------------|-----------------------------------|------------------------|
| 1. KUK (Dec. 1991)      | Rp. 38,700,000    | 6,420                             | 1.1                    |
| 2. KUPEDES (March 1992) | Rp. 792,000*      | no info                           |                        |
| 3. BKK (June 1991)      | Rp. 91,600        | 45,440                            | 7.4                    |

\*In the case of KUPEDES, the average loan size mentioned above does not refer to average industrial loan size but average overall loan size as no more detailed information was not available.

### Fieldsurveys in Central Java

Fieldwork was executed during February and March 1993. The starting point of the fieldsurveys was the *BIPIK* programme of the Ministry of Industry. Six clusters were selected in which *BIPIK* promotion has been provided. The survey also studied the impact of other forms of financial and technical assistance which has been provided to firms in selected clusters. The survey makes a distinction between yes/no participation in specific forms of assistance, and the intensity of participation. Our assessment did not only focus on the question whether intended effects of promotion actually occurred, but it also assessed the possible occurrence of unintended effects which have been harmful to receivers of assistance as well as other firms operating in the same cluster making similar output <sup>9</sup>. There is an enormous diversity among clusters in Central Java with respect to prospects and bottlenecks to growth. This diversity is especially significant among the dynamic clusters (Sandee and Weijland 1989). It was therefore decided that the sample of clusters would be purposely biased towards the more dynamic clusters <sup>10</sup>.

### Selected Clusters and Overview of Received Technical and Financial Assistance

<sup>9</sup> There are several unintended effects which might occur and which in certain cases are adverse to the aims of the policies and programmes. In the first place, there may be unintended effects which take place within a certain firm. They include the unfavourable impact that subsidized credit may have on labour intensity because it changes the relative prices of labour, capital, and other inputs. Training aimed at technological change may lead to adoption of innovation which may have an adverse effect on labour demand. There are also effects which take place between firms and which are easily overlooked. An example of such an impact is crowding out. When firms are operating in a given and limited market special facilities offered to some firms may give them an advantage above other firms not receiving assistance. This change in competitive power may improve the situation of the firms affected, but the results for the whole of SSCI in that particular market will remain the same: other firms will have experienced a decline in production and employment.

<sup>10</sup> The survey was executed by staff and students of Satya Wacana Christian University and the Vrije Universiteit Amsterdam in February 1993. Fieldwork in the Jepara regency was retarded due to heavy rains and floods which struck Northern Java during that time. An extensive questionnaire was prepared to gain insight into participation in a wide range of governmental and non - governmental technical and financial assistance programmes. Besides, the questionnaire included economic sections to allow for a comparison of participants and non - participants in various distinct programmes. In each cluster slightly more than 30 enterprises were randomly selected. In total the sample consisted of 193 respondents in 6 clusters. Data processing was carried out at Satya Wacana Christian University in Salatiga during March 1993, while data analysis was carried out in Salatiga as well as at the Vrije Universiteit Amsterdam during March / April 1993.

#### 1. Palm sugar (*gula kelapa*) in the Boyolali regency.

Palm sugar production can be found all over Java, and it is generally carried out by the poorest households in rural communities. Palm sugar is obtained twice a day by climbing the palm trees and emptying the cups which have been placed there to collect the juice. Participation rates in assistance programmes are low in the cluster. The main bottleneck is the limited market opportunities as the product is principally consumed in the direct surroundings of the village. *BIPIK* has provided brief technical and management training courses. A very limited number of producers have received credit from *KUPEDES*.

#### 2. Vermicelli (*soun*) in the Klaten regency

Transparent vermicelli is an ingredient of the famous *soto* dishes like *soto ayam*, *soto madura*, *nasi soto*, etc. *Soun* of the best quality is produced from the *aren* tree through a process in which its marrow is mixed with other raw materials, boiled, and dried in the sun. *Soun* producers face competition from noodles producers. Dishes like *mie Jakarta* are becoming increasingly popular in urban and rural areas. The main bottleneck is access to good quality raw materials and reasonable prices which allows producers to remain competitive. *BIPIK* activities in this *soun* cluster include donation of a limited number of equipment to selected producers, and participation in regional and national exhibitions. Credit has been provided by *KUPEDES* and a revolving fund organized by a *Bank Indonesia* pilot project aimed at linking small scale producers to the formal banking system.

#### 3. Tiles (*genteng*) in the Boyolali regency.

The majority of tiles producers in this cluster use traditional techniques to fabricate a low quality tile which is sold to nearby rural areas. By early 1993, a small group of tiles producers had adopted the so called handpress technology, and they were producing higher quality output for more dynamic markets. Formal credit and the development of a revolving credit fund by the local government were widely used to finance the adoption of new technology. The main bottleneck is access to credit needed to adopt the new technology. *BIPIK* has provided brief training courses for both adopters as well as traditional tiles producers.

#### 4. Metal Casting (*cor logam*) in the Klaten regency

This cluster contains distinct firms involved in a wide variety of metal casting as well as the manufacturing of a range of metal products. Diversity in output is very much related to diversity in size of enterprises, number of workers, as well as skills of the labour force. In this cluster one can find small firms employing not more than 10 workers specialized in production of simple fences of cast iron, but one can also find large firms with more than 200 workers producing output for the national railways and the automotive industry. The main bottleneck for all firms is rather similar, that is the need to improve the quality of output. Use of formal credit in this cluster is surprisingly low. *BIPIK* is mainly present through the establishment of a common service facility (*Unit Pelayanan Teknis*) which is used by firms for finishing cast iron products. An Indonesian conglomerate is highly active in this cluster through the *Bapak Angkat* system. It provides longterm training, which even includes a study tour to Japan for selected producers.

#### 5. Wooden Furniture (*Mebel*) in the Jepara region

The Jepara furniture industry is producing for national as well as export markets. There are a number of furniture clusters in this regency. The cluster studied here is specialized in production of chairs. The size of the workforce varies significantly among firms. Interfirm linkages in the cluster are complex, and specific stages of the production process are frequently contracted out to specialized firms. Access to credit is considered of great importance as it allows production for stock. Credit indeed is a very important facility in the cluster. *BIPIK* has provided one day training courses on topics like production techniques, management and bookkeeping. A small non-governmental organization assists producers to market their output through the opening of a small showroom.

#### 6. Woven Cloth (*Tenun*) in the Jepara regency

There is a well-know *tenun* cluster in the Jepara regency which serves both national markets as well as the tourist markets. Woven cloth from the cluster is used for shirts, dresses, decorations, etc. Most firms used handlooms, but a small number of large firms have made the switch to power-operated looms. The production process consists of some 9 different stages and it frequently

occurs that some stages are contracted out to other firms. There are even a few examples of big firms which have contracted out all stages to distinct firms, and the manager of the big firm is responsible for coordination, getting new orders, and selling output. Further expansion of the cluster seems to be highly dependent on penetration of new markets. Interfirm linkages are of great importance, and there is a balanced division of tasks and labour not only within but also between firms. There are four different forms of assistance which have been available to producers: credit, management training, technical training, and bookkeeping training. The latter three have been provided by *BIPIK*. The larger firms in the cluster have access to *Kredit Usaha Kecil (KUK)*.

### Results of Field Research.

Table 3 shows that the average firm size of our survey is relatively large. Only palm sugar is part of cottage industry in the statistical sense (less than 5 workers) The roof tiles and soun industry are part of 'small scale industry' as defined by *BPS* (5-19 workers). The three remaining sectors are part of the medium size industry (20-100 workers).

Table 3 Features of Clusters

| Type of Industry | Past Employment Growth | Average Size<br>( Workers ) |
|------------------|------------------------|-----------------------------|
| 1. Gula Kelapa   | Stagnant               | 1.8                         |
| 2. Soun          | Stable                 | 8                           |
| 3. Genteng       | Dynamic                | 9                           |
| 4. Cor Logam     | Very Dynamic           | 30                          |
| 5. Mebel         | Very Dynamic           | 30                          |
| 6. Tenun         | Very Dynamic           | 36                          |

If we consider the average growth during the past period of about 15 years we observe that 4 of the 6 clusters experienced a dynamic or very dynamic development. Only one cluster was stagnant, another one was stable. This again is an indication that the firms studied are not representative for small scale industry at large: the share of stagnant or declining firms must be higher <sup>11</sup>. An interesting question is to what extent the supply of particular programmes has been influenced by the dynamics in a cluster, or by the factors which prevent dynamics. It is likely that in dynamic clusters the demand for credit programmes and training is higher than elsewhere. The way in which the supplying agencies (governmental or NGO) respond to such differences in demand may differ, however.

### Participation in programmes.

Among the various programmes offered credit has received the largest response: about 4 of every 10 firms in the survey indicated that they received credit from a programme for *SSCI* (see table 4). Other programmes with a relatively high level of participation are marketing and technical training.

Rates of participation vary significantly among clusters, and it is lowest in the case of *gula kelapa*, and highest for *genteng* (see also bottom line of table 4). In the cases of *soun*, *genteng*, *cor logam*, and *tenun* the assistance offered is much in line with the main bottlenecks which have been mentioned above. This is less the case for *gula kelapa*, and *mebel*.

<sup>11</sup> It is important to take into account these observations with respect to the lack of representativity when drawing conclusions about the impact of programmes.

**Table 4 Participation in Programmes since 1987**

| Type of Programme     | Rate of Participation (%) |      |         |           |       |       | All Clusters |
|-----------------------|---------------------------|------|---------|-----------|-------|-------|--------------|
|                       | Gula Kelapa               | Soun | Genteng | Cor Logam | Mebel | Tenun |              |
| Credit                | 9.3                       | 65.6 | 53.1    | 9.3       | 56.2  | 45.4  | 39.9         |
| Raw Materials         | 18.7                      | 0.0  | 0.0     | 0.0       | 9.3   | 3.0   | 5.2          |
| Equipment             | 0.0                       | 43.7 | 31.2    | 18.7      | 3.1   | 0.0   | 16.1         |
| Assets                | 0.0                       | 0.0  | 0.0     | 0.0       | 0.0   | 0.0   | 0.0          |
| Marketing             | 12.5                      | 68.7 | 12.5    | 25.0      | 6.2   | 15.6  | 23.3         |
| Technical Training    | 25.0                      | 0.0  | 25.0    | 50.0      | 6.2   | 48.4  | 25.9         |
| Book-keeping Training | 0.0                       | 25.0 | 9.4     | 37.5      | 9.4   | 36.4  | 19.7         |
| Management Training   | 6.2                       | 3.1  | 9.4     | 9.4       | 9.4   | 39.9  | 12.9         |
| Other Training        | 0.0                       | 0.0  | 0.0     | 0.0       | 50.0  | 48.5  | 17.1         |
| No Participation      | 56.2                      | 25.0 | 9.4     | 31.2      | 40.6  | 33.3  | 32.6         |

Many firms participated in more than one programme (see table 5). The average number of types of programmes in which firms participated between 1987 and 1992 is about 1.6. The average number of programmes used per firm is somewhat higher (about 2.0), since some firms use a programme more than one time. But it is important to note that 3 out of every 10 firms never participated in any programme even though all firms considered here were located in *BIPIK* clusters. Thus it appears that the intensity of participation varies greatly among firms.

**Table 5 Frequency of Participation in Programmes since 1987**

| Frequency of Participation | Share of Firms (%) |
|----------------------------|--------------------|
| 0                          | 30.4               |
| 1                          | 26.2               |
| 2                          | 17.3               |
| 3                          | 12.6               |
| 4                          | 7.9                |
| 5                          | 5.2                |
| 6                          | .5                 |

In the case of credit one can easily measure the intensity of use by considering the amounts of money borrowed by firms. In Table 6 we present the results for the various clusters. In the palmsugar industry only small amounts of credit are obtained. Relatively large sums of credit are obtained in the sectors with large numbers of workers: metal casting, furniture and woven cloth.

**Table 6 Amounts of Credit Received by Firms between 1987 and 1992 (in %) in Rp. 1000**

| Activity        | No Credit | 1 - 999 th. Rp. | 1000 -4999 th. Rp. | 5000-9999 th. Rp. | > 10,000 th. Rp |
|-----------------|-----------|-----------------|--------------------|-------------------|-----------------|
| Gula Kelapa (%) | 91        | 3               | 6                  | 0                 | 0               |
| Soun (%)        | 41        | 3               | 53                 | 3                 | 0               |
| Genteng (%)     | 50        | 34              | 13                 | 0                 | 3               |
| Cor logam (%)   | 91        | 0               | 0                  | 0                 | 9               |
| Mebel (%)       | 56        | 0               | 13                 | 6                 | 25              |
| Tenun (%)       | 67        | 9               | 9                  | 3                 | 12              |

Entrepreneurs may have various reasons why they do not participate in programmes. These reasons can be classified into three groups:

1. supply related reasons: respondents would like to have participated, but they were not allowed for various reasons: they do not have collateral, they are not a member of a cooperative, they are not registered, etc.
2. demand related reasons: respondents could participate if they liked, but they did not like the programme because of various reasons: high interest rate, tight repayment schedule, etc.
3. lack of information: do not know enough about a programme, do not know the procedures.

The reasons why the interviewed entrepreneurs did not participate are summarized in table 7. Lack of information is frequently mentioned as a reason why entrepreneurs did not participate in programmes. Only for credit schemes is the percentage considerably below 50%. In all other programmes this percentage is clearly above 50%. Only a relatively small share of the entrepreneurs mentioned specific demand and supply related reasons why they did not participate. Supply related reasons are of some importance with credit programmes. Demand related reasons are of some importance in the case of credit, equipment and marketing. The results summarized in Table 7 suggests that participation in programmes may be increased by improving information. In addition it must be remarked that 'lack of information' may also be the consequence of a lack of programmes accessible to potential participants. If a certain programme has not been offered in a cluster, the information about it will probably be low. This holds true for example for the assets programme which is only offered in a very limited number of clusters. Thus the high scores for 'lack of information' may also be the consequence of a lack of supply of programmes.

**Table 7 Reasons for Not Participating in Programmes (%)**

| Programme            | Demand related | Supply related | Lack of Information | Not specified |
|----------------------|----------------|----------------|---------------------|---------------|
| Credit               | 14.6           | 18.1           | 37.9                | 56.5          |
| Raw Materials        | 5.0            | 2.8            | 70.5                | 71.1          |
| Equipment            | 11.3           | 7.1            | 60.2                | 73.8          |
| Assets               | 5.7            | 1.6            | 85.5                | 87.6          |
| Marketing            | 12.3           | 7.5            | 61.2                | 76.2          |
| Technical Training   | 9.8            | 7.0            | 68.5                | 75.5          |
| Bookkeeping training | 6.7            | 4.3            | 74.4                | 83.5          |
| Management training  | 6.9            | 4.4            | 86.8                | 91.8          |

Note: percentages add up to more than 100% because more than one reason could be mentioned

### Evaluation of programmes

The participants in the various programmes have indicated their degree of satisfaction. The 'level of satisfaction' is of course subjective. However it is important to note that entrepreneurs feel much more positively about credit which they have to pay back in due course compared with the distinct training programmes which are generally offered free of charge. For equipment and credit programmes the degree of satisfaction is high (see table 8). The score for promotion programmes is low. Also the various training programmes received ratings which are clearly lower than those of the credit programmes. Within the group of training programmes technical training is considered as more useful than the other types of training. On the basis of these results there is much reason for an in depth evaluation of the adequacy of the various training programmes in order to arrive at programmes which are better suited to the needs of the target groups. Credit was well received in all clusters. In the case of *gula kelapa* however none of the producers had used it to invest in their business. Technical training was well received in the *genteng* and *cor logam* clusters where improvement in the quality of products is high on the agenda. Equipment was very welcome in the *genteng* cluster where producers were adopting new technology.

**Table 8 Level of Satisfaction of Participants in Programmes (in %)**

| Type of Programme    | Evaluation by Users. The Usefulness of Specific Programmes |                   |            |
|----------------------|------------------------------------------------------------|-------------------|------------|
|                      | Very Useful                                                | Reasonably Useful | Not useful |
| Credit               | 65                                                         | 30                | 6          |
| Raw Materials        | 53                                                         | 31                | 15         |
| Equipment            | 80                                                         | 20                | 0          |
| Assets               | -                                                          | -                 | -          |
| Marketing            | 32                                                         | 36                | 32         |
| Technical training   | 48                                                         | 38                | 14         |
| Bookkeeping training | 26                                                         | 63                | 11         |
| Management training  | 39                                                         | 27                | 33         |
| Other training       | 35                                                         | 7                 | 59         |

The priorities attached to future programmes have been indicated in table 9. Remarkably low priorities are attached to the various training programmes. This is related to the relatively low levels of satisfaction indicated in table 8, but the difference is much more extreme here. It appears that one must develop training programs which are considered as much more adequate in order to

come to meet the demands of the target group. The programmes to which potential users attach the highest priority are related to credit and raw materials. Also equipment and promotion receive high priorities from the potential users. Credit has high priority in all clusters. Marketing assistance is chiefly demanded in the *tenun* cluster where producers were in need of new strategies to penetrate new markets.

**Table 9 Priorities attached to Future Programmes (in %)**

| Type of Programme    | Priority attached to future programmes |              |             |
|----------------------|----------------------------------------|--------------|-------------|
|                      | 1st priority                           | 2nd priority | No priority |
| Credit               | 34                                     | 34           | 31          |
| Raw Materials        | 21                                     | 40           | 39          |
| Equipment            | 17                                     | 45           | 38          |
| Assets               | 4                                      | 14           | 83          |
| Marketing            | 22                                     | 19           | 59          |
| Technical training   | 3                                      | 13           | 85          |
| Bookkeeping training | 0                                      | 4            | 96          |
| Management training  | 1                                      | 2            | 97          |
| Other training       | 35                                     | 7            | 59          |

#### **The Effects of Participation in Programmes on Employment.**

In table 10 we present results on the development of employment in firms for the six clusters. In palm sugar the participating firms are slightly larger than the non participating firms. Participation is here defined as participation in any programme. But participation did not change the situation of stagnation in the sector. Palm sugar production remains serving rural markets in the direct surroundings of the cluster. In the roof tiles industry participating firms are slightly smaller than non-participating firms. Both groups of firms experienced a favourable development in employment, especially those firms producing pressed tiles for which income elasticities are high. In the vermicelli industry participating firms have a somewhat more favourable development of employment than non-participating firms. In the metal casting cluster participants were clearly more dynamic than non-participants. At the starting point participating firms were slightly smaller, but in 1991/1992 they were clearly larger than non-participating firms. In the furniture industry again participating firms experienced a more dynamic development than non-participating firms. In the woven cluster an even more extreme difference can be observed between participating and non participating firms.

**Table 10 The Development of Employment in Firms according to Cluster and Level of Participation**

| Type of Industry | Average Level of Employment (Persons per Enterprise) |              |       |       |
|------------------|------------------------------------------------------|--------------|-------|-------|
|                  | Participation                                        | At the start | 1991  | 1992  |
| Gula Kelapa      | yes                                                  | 2.11         | 1.89  | 1.89  |
|                  | no                                                   | 1.79         | 1.64  | 1.79  |
| Soun             | yes                                                  | 5.00         | 7.96  | 7.96  |
|                  | no                                                   | 7.00         | 8.38  | 8.00  |
| Genteng          | yes                                                  | 4.72         | 8.48  | 8.86  |
|                  | no                                                   | 5.33         | 9.00  | 9.00  |
| Cor Logam        | yes                                                  | 8.29         | 34.71 | 34.38 |
|                  | no                                                   | 9.91         | 18.00 | 21.18 |
| Mebel            | yes                                                  | 11.59        | 35.05 | 35.36 |
|                  | no                                                   | 9.30         | 11.70 | 21.00 |
| Tenun            | yes                                                  | 8.33         | 46.76 | 50.43 |
|                  | no                                                   | 6.50         | 17.08 | 18.83 |

We conclude that participation of firms in programmes in the stagnant (palm sugar) cluster did not have positive effects on employment. Also in the dynamic cluster (tiles) no signs can be observed that programmes played a role in the development of the firms. But it may be of course that trickle down processes have had an effect as indicated above. In the stable (noodles) cluster participating firms' employment grew somewhat faster than employment of non-participating firms. Finally participating firms in the three very dynamic sectors had a clearly more favourable development than non-participating firms. It is under these circumstances that employment stimulation programmes seem to have the biggest impact.

In order to see whether it makes any difference what kind of programme has been followed, we make a further distinction between credit and non-credit programmes. Thus we arrive at four types of classes according to participation in programme:

1. credit only
2. non-credit only
3. both credit and non-credit
4. neither credit, nor non-credit

In Table 11 we present the results for the three most dynamic clusters. In all cases the non-participating firms had the lowest number of workers. A combination of both credit and non-credit programmes leads to the highest employment level in two of the three clusters <sup>12</sup>. No clear picture results when firms which only used credit are compared with firms which only used another type of programme. A provisional conclusion is that it is firms that use a combination of credit and non-credit programmes which are the most successful, but it should be borne in mind that the number of observations on which this conclusion is based is rather small.

<sup>12</sup> In the *cor logam* and *tenun* clusters the mean employment levels in each of the four subgroups are significantly different from the cluster mean at the 5 % level, according to a test based on the F distribution.

Table 11 Impact of Programmes on Employment Distinguished by Type of Programme

| Type of Activity | Participation                 | Average Level of Employment at Different Years |      |      | Number of Firms |
|------------------|-------------------------------|------------------------------------------------|------|------|-----------------|
|                  |                               | Start                                          | 1991 | 1992 |                 |
| Cor Logam        | Credit only                   | 8.0                                            | 23.0 | 23.0 | 1               |
|                  | Non-credit only               | 8.5                                            | 31.1 | 30.7 | 19              |
|                  | Both credit and non-credit    | 10.0                                           | 71.5 | 71.5 | 2               |
|                  | Neither credit nor non-credit | 9.9                                            | 18.0 | 21.2 | 10              |
| Mebel            | Credit only                   | 8.6                                            | 35.3 | 38.5 | 11              |
|                  | Non-credit only               | 39.0                                           | 36.0 | 26.7 | 3               |
|                  | Both credit and non-credit    | 5.0                                            | 35.4 | 35.4 | 5               |
|                  | Neither credit nor non-credit | 9.3                                            | 11.7 | 21.0 | 13              |
| Tenun            | Credit only                   | 15.7                                           | 23.7 | 27.0 | 3               |
|                  | Non-credit only               | 5.1                                            | 41.0 | 42.5 | 8               |
|                  | Both credit and non-credit    | 8.2                                            | 53.6 | 58.6 | 11              |
|                  | Neither credit nor non-credit | 6.5                                            | 17.1 | 18.8 | 11              |

A disadvantage of the above approach is that it ignores other factors influencing employment. In order to carry out a systematic investigation of other factors one can use a multiple regression technique. The results are shown in table 12. The  $R^2$  levels are low and the low  $t$  values for most variables indicate that the variables selected here do not contribute in a significant way to the explanation of employment in the firms concerned.<sup>13</sup>

The results for intensity of participation are positive in all clusters, though not significant in all cases. The most significant support that intensity of participation in programmes stimulates the employment of a firm is found in the *tenun* cluster. Further, in the *cor logam* and *tenun* clusters a positive and significant impact is found for the educational level of the entrepreneur on employment in the firms. The variety in the results found for the different clusters indicates that it is difficult to generalize about the impact of programmes on employment in firms.

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<sup>13</sup> We have used a linear equation; a specification in logarithmic form is not possible since intensity of participation may assume zero values.

**Table 12. Multiple Regression Analysis of Employment (in 1992) in Small Firms in Six Clusters**  
**Dependent Variable : Employment.**

| Variable                                 | Gula Kelapa      | Soun             | Genteng         | Cor Logam       | Mebel           | Tenun            |
|------------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|------------------|
| Constant                                 | 3.78<br>(14.3)   | 9.30<br>(2.72)   | 7.50<br>(2.10)  | -1.10<br>(-.03) | 18.4<br>(.69)   | -90.3<br>(-1.92) |
| Intensity of Participation <sup>14</sup> | 0.018<br>(.30)   | .242<br>(1.05)   | .496<br>(1.66)  | 3.83<br>(1.18)  | 3.95<br>(1.39)  | 7.48<br>(2.67)   |
| Age of Respondent                        | -.019<br>(-4.11) | -.001<br>(-.002) | .034<br>(.49)   | -.362<br>(-.72) | 0.85<br>(.026)  | 2.23<br>(1.88)   |
| Educational Level                        | -.048<br>(-1.04) | -.016<br>(-.05)  | -.506<br>(-.71) | 5.55<br>(1.64)  | -1.25<br>(-.52) | 7.84<br>(2.30)   |
| Age of Firm                              | .002<br>(.27)    | -.052<br>(-.59)  | -.004<br>(-.12) | .314<br>(.91)   | .850<br>(1.00)  | 2.23<br>(-1.39)  |
| R2                                       | .40              | .05              | .14             | .22             | .18             | .40              |

(t-values in parentheses)

The results shown in the last three tables seem to support the conclusion that programmes stimulate the employment growth of firms, especially in dynamic sectors. Yet one has to be aware that in addition to this conclusion there is still another interpretation of the results found. This interpretation reads: firms growing very rapidly wish to participate in programmes more intensively than firms which do not grow, (or which only grow at a moderate speed). For example, growing firms need credit for investments and therefore they are more likely to participate in programmes than stagnant firms. Also, entrepreneurs of rapidly growing firms may feel a stronger need to participate in various training programmes than other entrepreneurs. This interpretation is essentially a reversal of the causality: participation in programmes does not lead to high growth, but high growth leads to participation in programmes. To give a final answer about which of the two interpretations is most appropriate one needs to make use of advanced statistical methods, which lies outside the scope of this study. Nevertheless, even in the second interpretation, where programmes are not a 'cause' of employment growth, one can still maintain that they are accommodating such a growth.

## Conclusions

Given the limited budget of the Ministry of Industry for targeted assistance it makes sense to focus on clusters of firms. The other side of the coin is of course that the non - clustered firms are presently overlooked and also these firms may be quite important from the viewpoint of employment generation. Participation rates of the Ministry of Industry programmes are low, and the programmes are so far only reaching a minority of clustered SSCI in a direct way. Financial assistance is fragmented. There are different types of programmes and institutions that are specialized for different segments of the market. Participation rates in credit programmes are low as well, and information is far from complete. Technical and financial assistance for SSCI are not synchronized; they are in fact hardly ever coordinated. The low participation rates of all programmes raise the question what rates of participation all agencies want to reach in the longer run. The programmes may continue for many years to come before a majority of the SSCI producers will be reached.

The field survey was conducted to shed light on the effectiveness of current assistance programmes to enhance the development of SSCI with particular reference to productive employment creation.

<sup>14</sup> The intensity of participation refers to the number of times firms have participated in the same and / or in different programmes.

The programmes are to an important extent determined in the capital Jakarta at the head offices of various distinct departments and banking institutions. The consequence is that they are not always adapted to the particular bottlenecks of specific SSCI clusters. Presently, entrepreneurs are especially critical of the value of training programmes. The field survey shows that technical and financial assistance for SSCI are not synchronized; they are in fact hardly ever coordinated. In the less dynamic clusters investigated there is little or no sign of a positive impact of programmes on employment. However in the three very dynamic clusters it was found that firms which participated in programmes experienced a more favourable growth of employment than which did not participate. Further analysis in the dynamic clusters reveals that firms which made use of a combination of technical and financial assistance were more successful in terms of employment generation than other firms.

There is a need to decentralize decision making on assistance to SSCI and better adapt it to the specific bottlenecks and problems of each cluster. There is also a strong argument in favour of a more integrated approach in terms of credit and other programmes. Technical assistance in general and training programmes seem however to be mainly useful when demanded by growing firms, and linked with credit. Our fieldwork provides indications that present assistance programmes are not a 'cause' of employment growth in SSCI but they are accommodating such growth.

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