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**DRAFT STUDY ON
ANALYTICAL SYNOPSIS PERTAINING TO REVIEWS/CASE STUDIES OF SELECTED
SMALL-SCALE AND RURAL INDUSTRY DEVELOPMENT PROGRAMMES AND
SCHEMES IN SOUTHEAST AND EAST ASIA**

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1. INTRODUCTION - PURPOSE OF THE STUDY

The present document continues the work done in earlier studies^{1/} of the Regional and Country Studies Branch, UNIDO which have explored the problems and the potential of SSI in developing countries, and have assessed and suggested support to the sector to increase its contribution to industrial and overall development. SSI's contribution can be particularly strong in:

- value added generation;
- employment generation;
- accelerating rural development and contributing to stemming urban immigration and problems of congestion in the large cities;
- establishing links between agriculture and industry and utilizing local raw materials and waste products available in relatively small quantities;
- stimulating entrepreneurship, especially in the countryside;
- mobilizing private savings and harnessing them for productive purposes;
- enhancing flexibility of production and rapid market response;

^{1/} See references.

- supplying parts and components for large-scale industries.

Major constraints on the full realization of SSI potential are:

- insufficient knowledge among entrepreneurs of modern management techniques, markets and such industrial support services as are available to them;
- low level of technology, unstandardized products and scant links with the existing large-scale enterprises;
- limited prospects for autonomous growth and modernization as a consequence of unfavourable legislation and difficult access to finance;
- little access to or ability to apply new technologies such as numerically controlled machines, computer-aided design or microprocessor-based information and control devices;
- an unfavourable general policy environment.

Taking into account of recent evaluations of SSI development schemes in Asia and a global survey of rural SSI support programmes^{1/} this document presents a brief synthesis of support schemes focussing on selected key aspects of SSI development in Southeast and East Asia. It is hoped that both the analysis and the suggestions for action will be useful to policy makers in designing more efficient assistance to the small-scale sector.

^{1/} See references.

The study is divided in two parts: the first is centred on programmes which aim at improving the local environment in which SSI operates, the second deals with programmes aiming at removing the various constraints in the performance of the enterprise as such.

The attention given to the local SSI environment stems from the realization that support aiming at the solution of particular problems of the individual enterprises - technical assistance, credit, etc. - is unlikely to have a full impact if the enterprise as such cannot operate properly as a result of external factors. The scope of the present document is restricted to the local industrial and infrastructural environment; in other words, linkages between enterprises and the provision of sites, power and other collective equipment are the object of the analysis. It should, however, be kept in mind - and the example of the Thailand Songkhla Lake Basin clearly indicates this - that an all-in concept of development is necessary for SSI to make its full contribution. On one end of the spectrum, SSI will benefit from development of the agricultural sector and the concomitant growth of rural incomes and increased availability of raw materials; on the other, integrating SSI in export promotion and in the design of export facilities will provide stimuli. An element of the environment that has received little attention so far is the role played by socio-cultural factors in the development of SSI: many of the units, especially those in the more traditional production lines, rely on skills passed on in the family, or within a population group, and the labour force tends to consist of relatives. One reason why attempts to involve SSI in assistance schemes or co-operative groupings designed by outsiders have been unsuccessful could well be that such attempts impose participation of SSI entrepreneurs in networks that are totally unfamiliar to them; the case studies below contain several references to schemes that have

functioned well because they relied in part on traditional relationship or networks that had grown spontaneously over time.

With proper attention the SSI environment - from local to global - support measures aiming at solving specific problems within the enterprise will be more successful. The impact of assistance can be increased by following two ways simultaneously: first, by increasing the demand-orientation of support; second, by streamlining support. With regard to demand, several case studies show that technical assistance will be more effective if the real needs of individual enterprises or specific industries are given maximum attention. Agencies and their staff have often been too remote - physically and mentally - from SSI, especially in rural areas. With regard to streamlining: there are many indications that support agencies have become top-heavy and take too little account of each others activities, which leads both to overlaps and gaps in assistance. Better co-ordination of activities and a concentration of resources on the types of support that can be rendered efficiently will increase the benefits to SSI. In a situation where public resources tend to decrease and the need to efficiently mobilize domestic development resources and forces becomes all the more urgent, this approach should help to increase SSI's contribution.

2. PROGRAMMES FOR THE LOCAL SSI ENVIRONMENT

A number of support programmes concentrate efforts on providing the right environment for the development of SSI. Although on the whole direct support to individual enterprises in the form of training, credit, entrepreneurship development, etc. are also available in one form or another, the SSIs are approached as a group, by providing collective facilities and/or stimulating collective linkages and/or subordinating SSI support to area development programmes. The present chapter presents illustrations of:

- industrial estates with special services for SSIs;
- linkages programmes between SSI and between SSI and larger enterprises and/or other sectors of the economy;
- area development programmes including SSI development schemes.

2.1 The "nursery factory scheme" at Pengkalan Chepa, Malaysia

In order to help modernizing and rationalizing SSI, and to strengthen the role of the bumiputras, a indigenous small-scale entrepreneurs, the Malaysian Government has launched several support programmes. The "nursery factory scheme" is specially to help overcome the following constraints:

- (i) the shortage of well-designed and aptly located small factory premises. Those currently available are generally overpriced and the rental rates are normally prohibitive as far as the small-scale enterprises (SSEs) are concerned;

- (ii) the lack of managerial expertise and technical know-how. The absence of a bumiputra entrepreneurial class is indeed conspicuous;
- (iii) the lack of marketing expertise, contacts and outlets; and
- (iv) the lack of business guidance and integrated financial assistance.

Under the scheme, a number of suitable designed factory premises are built within an area with the provision of an integrated system of financial, advisory and technical support to assist participating small-scale bumiputra enterprises or entrepreneurs. The Bank Pembangunan Malaysia Berhad (BPMB), a Government-owned development bank, takes the responsibility of providing these factory premises and co-ordinate the provision of other basic utilities such as electricity, water and telephone facilities. On completion of these factory units (numbering between 15 to 30), they at subsidized rates to local entrepreneurs.

BPMB also extends supportive services such as training, management, finance and technical know-how. To ensure the effectiveness of BPMB's role in implementing the scheme, a scheme manager placed by the bank at the site. The scheme manager closely supervises on the progress of every entrepreneur. The grouping of small enterprises should a.o. enhance the interaction of entrepreneurs and thus contribute to the learning process.

When an entrepreneur is found to be successful, the subsidy element granted by the bank will be gradually withdrawn so that eventually he will be requested to relocate his manufacturing activity outside of the scheme once BPMB is satisfied that he can survive without substantive assistance from the

bank itself and other related government agencies. The factory unit so vacated will then be allocated to a new entrepreneur.

The Pengkalan Chepa estate is the first attempt to implement this type of scheme. If it proves successful (which is not just a matter of pure economic calculation but also of the social costs and benefits) others are likely to be built and operated.

Pengkalan Chepa was selected as the site for the first nursery scheme for the following reasons:

- presence of a previously established industrial estate which a.o. might provide linkages;
- proximity to Kota Bharu, the Kelantan state capital;
- good infrastructural facilities in the area including an airport.

Units of various sizes, equipped with water and electricity, are made available to entrepreneurs. Telephones are not yet installed, and this is considered a major shortcoming by the entrepreneurs. A proposal to provide machinery for common utilization by two or three units has not been implemented.

The majority of firms operated in August 1986, when a survey of the project was made, belonged to the food processing industries. Traditional crafts but also metal working, chemical and plastic products were represented as well. Selection of the enterprises was made by BPMB (with a representative

of the Small Enterprise Division of the Ministry of Trade and Industry). A first category of entrepreneurs was selected on the basis of their previous experience with "backyard factories" and their capability to provide a "demonstration effect" for the second category of new enterprises in need of management and marketing experience. Preference is given to entrepreneurs who are able to provide at least 10 per cent of the project cost (excluding land and premises); new enterprises must pay this share in cash. This will stimulate the entrepreneur to be fully committed to the project. Loans are given for five years, with a one-year grace periods at rates slightly below market rates. The unit's equipment and some other form of property (usually land) serves as collateral..

Projects are chosen on the following criteria:

- (i) must be technically feasible, financially sound and economically viable in the context of the 'nursery factory scheme';
- (ii) total net assets or shareholders' funds must not exceed M\$250,000;
and
- (iii) total full-time paid employees must not exceed 25 persons.

BPMP's management of the project is entrusted to a Management Committee comprising all departmental heads of the Bank and a representative of the SED of the Ministry of Trade and Industry.

The major functions of the management committee are as follows:

- (i) to formulate policies relating to the scheme;
- (ii) to approve:
 - the establishment of new schemes
 - the appointment of the Scheme Manager
 - the selection of scheme participants
 - the reallocation of successful enterprises; and
- (iii) to ensure that each scheme functions according to the prescribed concept and policies. This requires a continuous assessment of each scheme's performance.

As far as the Pengkalan Chepa project is concerned, item (iii) seems to be the most important function given that it is a 'pilot project' and its success or otherwise will directly determine the future role of the 'nursery factory scheme'.

To ensure effective planning and monitoring, four BPMB departments are directly involved in the implementation of the scheme:

- Research and Development;
- Technical and Engineering;
- Entrepreneurial Development;
- Property Unit.

While the first three support the operations of the enterprises on the basis of their own specialisms (with R&D) as the general administrator, the

Property Unit is in charge of facilities. Everyday administration, assistance and supervision are in the hands of the Project Manager and his staff.

The 1986 survey of the scheme showed that 11 out of 17 SSI enterprises (with a total employment of 151) or the esate were involved in food processing, and that these were on the whole largest and most advanced enterprises; average sales were M\$ 12,681 as opposed to M\$ 10,250 for the others, five entrepreneurs had received formal business training (none in the other industries). Labour intensity was highest in the non-food enterprises: their average employment was 15.6 as opposed to 5.2 for the food processors. Unskilled labour predominates, and on-the-job training in all that is considered necessary for the type of work being done. The majority of enterprises disposed of less than M\$ 50,000 equity; the average size of investment loans supplied by BPMB was approximately M\$ 39,000. Few entrepreneurs had sufficient working capital, and BPMB supplied loans with an average size of M\$ 23,000 for the purpose. Inadequate financial management and low sales (moreover often made on credit) caused lack of working capital to become a major problem of the SSIs.

During the survey period, 3 enterprises were not in operation while 5 had either been inoperational or phased out of the scheme. The major reasons for these enterprises to become inactive were disagreement among business partners, financial mismanagement, and inability to expand markets.

Inputs were generally acquired from Kota Bharu, against cash without formal buying arrangements. Joint procurement arrangements, which could have lowered both transport and purchasing costs, did not exist.

The major markets are Kota Bharu, other districts in the state and the public sector (Government contracts). Competition was the problem in expanding sales especially in the food sector which is considered to be more or less saturated. Lack of product promotion and exposure were the next most important reason for low sales. Backward or forward linkages with larger industries in the area do not appear to be important.

2.2 Promotion of SSI in the West Sumatra Province, Indonesia

SSI promotion in Indonesia has taken several forms, all of them with a strong element of (intended) linkages among SSIs and/or between SSI and large industries. These schemes include:

- grouping of SSIs on industrial estates (Ulu Gadut);
- "foster father" schemes involving formal and information industries (Sungai Puar);
- SSI clusters (Kota Gadang).

The Ulu Gadut SSI estate near Padang was designed for both export-oriented (i.e. serving national and international markets) enterprises and units working for the local market. As part of a modernization and promotion device for SSI, the estate was planned in 1981 and completed in 1984. Both types of industries were expected to become intensively linked to some medium-scale industries also located at the estate, the so-called strata-one industries. These would provide the various inputs needed by the

export-oriented SSIs, or strata two industries. The products would be marketed by the strata-one enterprises. The strata-three industries were those operating the local-market; in principle their supply/marketing relationship with the strata-one enterprises would be the same.

The emphasis was to be an export-oriented industries mainly using resources available in the region. The export of semi-finished or finished goods instead of raw materials would increase the region's income, enable the penetration of new markets, and create employment. Relying on local raw materials would reduce the supply problems of industry. By linking the SSI to medium-scale industries with their more experienced management and external contact and by providing production facilities, the usual problems that SSI faces in producing for non-local markets would be overcome.

The production lines selected for the estate were based on timber, rattan and leather processing. These are widely available in the region, and so is manpower skilled in handling these materials. Moreover, they have considerable export potential. The strata-one industries, besides exporting their own semi-finished products (rattan splits and sawn timber), would also supply the strata-two units producing furniture and shoes.

The product differentiation was thus quite limited. This would keep the range of special facilities and machinery down and thus reduce the cost of the estate. It was expected that in the long run 10 strata-one industries would locate at the estate, creating forward linkage effects for some 50 strata-two and 200 strata-three units (see Table 6).

The management of the Ulu Gadut estate is handled by the Small-scale Industries Centre (Pusat Pengembangan Industri Kecil (PPIK)) a special authority established by the Ministry of Manufacturing Industry. During the preparatory phase, PPIK had the responsibility for preparing the feasibility study including the industrial plant design and searching candidates for the estate. During the construction period, PPIK advised and guided the participants in designing the plant lay-out, constructing the buildings and equipping them. At the operational level PPIK - provides various facilities to support the development of the small-scale industries. The government facilities covered a wide range of "software" and "hardware" services, the later including basic industrial equipment and technical support.

High expectations existed with regard to penetrating international markets through the strata-one industries when the estate opened in 1984. The available premises for strata-two industries were therefore soon all taken. The strata-three industries were not strongly attracted by the estate, as the distance to the urban market was too large. After three years, the strata-three timber and rattan industries had all stopped operations at the estate, while the number of leather-working units dropped to one-half of the 1984 number - which again was half of the long-term total expected. Stagnation in international markets led to reduced exports by the strata-one industries. Rattan exports did well, but this product should have been supplied to the strata-two industries who therefore were forced to rely on irregular supplies of inferior material. This again negatively influenced their competitiveness. The expected linkages between industries were not realized.

Essential facilities at th estate were provided by the Government. The remainder had to be provided by the industries themselves, and here the SSIs were at a distinct disadvantage, their access to credit being problematical. It proved, however more difficult for the larger enterprises than for SSI to mobilize sufficient working capital once the units were operating, working capital needs of the SSIs being very low. The problems were compounded by delays in acquiring forest concessions which led to production bottlenecks. In turn, this reduced sales and the reduced profits caused loan repayment arrears. Although the ratten dismal financial performance of many units is due to a variety of reasons, the approval of a recent application for a collective forest concession would certainly help to improve the performance of the estate.

Training was one of the successful elements in the Ulu Gadut scheme. It was recommended by the strata-two and strata-three industries to expand this programme. The disadvantage of conducting training outside West Sumatra was that it was too costly and could thus be attended only by a few participants. Guided by these considerations, the 1986 training programmes were conducted at the estate. For the medium-scale industries the training services were less essential, as they produce unsophisticated intermediate goods which require few special skills.

The Sungai Puar "foster father" scheme attempts to link industries in their individual locations, with the large-scale industry acting as a buyer of the SSI output, and filling the supporting role played by the Government in the estate approach by providing training, supervision and consultancy to SSI. It was expected that the link would help small industry to grow through "trickle down" effects.

In the present case, the contacts between the Padang Cement Factory (P.T. Semen Padang) and the Sungai Puar SSIs in the metal working branch had been developing for some time before the links were formalized. The expanding factory could no longer be supplied with sufficient spare parts by its own workshop. Formal contacts were established in 1983 by the Regional Office of the Ministry of Manufacturing Industry.

The SSI at Sungai Puar originally produced simple agricultural equipment for the regional market. Quality was not very important, and scrap iron could generally be used as raw material. The cement factory imposed high quality standards on the spare parts, and as a consequence high quality raw materials came to be used as well. Initially, production for the cement factory involved two Sungai Puar SSIs; this number had risen to four by 1986. Total production for the cement factory increased from Rp.4 million to Rp.14 million (see Table 8).

In spite of the rapid expansion, the Sungai Puar workshops could not produce all the spare parts needed. The cement factory therefore turned to producers in the other locations mentioned, Bukittinggi and Padang having the added advantages of being very favourable located.

The cement factory provided training to the Sungai Puar workers, improved management skills and production methods and helped the SSIs to procure proper raw materials. The quality of the products was thus raised, and the small industries learned to make deliveries within the agreed time limits. Although the heavy dependency on the cement factory, the major buyer of output, was a drawback, the expected "trickle down" effects were in part realized and a contribution was made to the "growth with equity" concept of development

planning. The strong position of the cement factory in the regional market which helped it to "pull along" the small enterprises, and the fact that the large and small enterprises were not competitors for inputs, made this scheme more successful than the Ulu Gadut estate.

The problem of diversifying the small industries' markets remains. In co-operation with the Ford Crop Extension Service, the cement factory also trained the SSI workers in new production techniques for agricultural equipment, but since the 1970s serious competitors have emerged for equipment produced at Sungai Puar. The agricultural tools production volume has thus been badly reduced.

The only financial link between the cement factory and the SSIs was cash on delivery payment. Although there was a short-term credit arrangement made available by the factory, mainly for obtaining raw materials, the workshops never used this credit, financing operation costs from their own resources.

The "foster father" link did not go so far as to provide credit for capacity expansion of the Sungai Puar workshops. Instead, orders were placed elsewhere when the need for spare parts exceeded the existing production capacity. Had the Sungai Puar metal workers invested (or been able to invest) in expanding production, they might have retained a larger share of the quickly growing demand of the cement factory. An argument in favour of the allocation system is that orders were distributed among a larger number of SSIs, and that thus the "equity development" principle received due attention. On the other hand it can be argued that the cement factory used the quota system to be in a stronger position vis-à-vis its suppliers: instead

of being dependent on one or two relatively strong partners it had a large number of small partners, enabling it to shift its business if necessary.

The third approach, that of the household and cottage industry cluster (sentra industri kecil), was used to strengthen the smallest industries in the country usually on a co-operative basis. Linkages were stimulated among the cottage-scale enterprises themselves. The basis for Government assistance would be existing industries in and around a specific location. The relationship between these industries were strengthened through the provision of training, equipment, raw materials and marketing services on the basis of a cluster of industries engaged in identical production lines. Focussing on identical industries simplified the efforts to strengthen them.

The roots of the scheme at Kota Gadang go back many decades, and the strong ties that have developed between the units and with the private training and marketing institute that is the centre of the scheme in its original form have proved essential for its success. Recruitment of workers is along family lines, and this has provided another element of stability. Production was based on local crafts: embroidery and silverware-making.

The Ministry of Manufacturing Industry used the training institute as a basis for a modernization and expansion programme. Modernization included the introduction of new designs - the foundation had continued to rely on traditional local design. Assistance also included training, technical and managerial support and marketing. Although the authentic traditional type of craft is now in the process of disappearing, the market for the town's products has grown. Much of the output is sold in Bukittinggi, a nearly major town which also serves as a source of raw materials. The main constraint on

further expansion would seem to be the shortage of skilled workers, as a high degree of artistic training is needed to create a good product. The problem has been solved to an extent by involving household and cottage producers in nearby villages in the scheme, which now has the legal form of a foundation.

(c) Financial issues

The financial resources of the foundation mostly consisted of contributions from the individual participating cottage industries to the common fund. For external funding, KAS relied as much as possible on grants and related types finance. Bank credit was avoided in order to be free from interest burdens. The funds are in part used to provide interest-free loans and raw materials to the participants. The profits made on sales are distributed among the participants on the basis of individual shares in production and sales, after loan repayments and common fund contributions have been accounted for. Earnings are sufficiently high to enable participants to generally finance their own operations; credit requests to the foundation are rare. Government intervention has all in all been very limited.

2.3 Promotion of SMI in the Songkhla Lake Basin, Thailand

In Thailand, 90 per cent of industrial output is generated in the Central Region around Bangkok. Although the disadvantages of agglomeration will appear sooner or later in the form of rise in land prices, wages, transportation cost and pollution abatement cost, individual industrialists cannot go out of the metropolitan area because the investment environment is extremely inferior in the non-metropolitan regions, with underdeveloped areas

for industrial use, low skilled manpower, transport problems, poor urban services, and a limited market size. Industrial development in the non-metropolitan regions cannot be achieved without government support.

The availability of raw materials and the convenient location of South Thailand for international trade present an opportunity for decentralizing development. The Sixth National Economic and Social Development Plan (1986-1990) therefore states clearly that one of the main objectives of regionalization is to open the Southern region economy to world competition, to disperse industrial development to the Southern region in close relation with the development of other areas, and to increase efficiency in natural resource exploitation and in environmental management as well, traditional resources such as wood and fish having suffered from overexploitation. Top priority has been given to the development of Songkhla/Haadyai as the principal economic and administrative centre of the South. Transportation and communication systems will be set up to establish the interlink between the Eastern Coastal area (Surat Thani) and the Western Coastal area (Phuket).

In comparison with the national industrial structure, the Songkhla Lake Basin (SLB) is characterized by industries captive to their location, either serving the demands and market of the local region or processing local produce and output. "Footloose" industries, i.e. those which may have chosen the South in preference to other locations in Thailand are not represented. The local industries lack versatility and technological sophistication. Base industries like iron-steel, chemicals and textiles are negligible, as are engineering industries and assembly operations. Accordingly, there are few subcontracting possibilities, which is the normal way of upgrading the operation of small metal working and machine repair shops. The region is

well-connected to the rest of Thailand, but internal infrastructure (including power supply) needs much improvement, and if the region is to become a major exporter, port and airport facilities will have to be improved as well.

A large part of the manufacturing activities in the area takes place in the informal sector, which accounts for some 50 per cent of industrial employment. Besides, medium and especially small-scale industry dominate the formal sector. Special attention to SMI is thus essential to mobilize the areas development potential.

Overall planning of promotional activities within the Plan framework is in the hands of the Southern Industrial Economic Development Centre (SIEDC) of the National Economic and Social Development Board which like other support agencies - suffers from severely limited staff and budget. The Department of Industrial Promotion and the Industrial Economic and Planning Division of the Ministry of Industry are also involved in the planning of such activities, co-operating with other units within the Ministry and well outside agencies formulate programmes for support to SMI; in 1987, three Industrial Promotion Sections of the Provincial Office were set up in the area.

Promotional activities include:

- dissemination of information on opportunities;
- resource management;
- technology deffusion;
- management training;
- skill improvement;
- credit and tax facilities.

Data on investment and market opportunities
ern Industrial Promotion Centre of the Depa
and the Office of the Board of Investment.
ation dissemination would also be created
ncial Industry Office from a largely regula
ion. It has now been decided that there wi
mation service centre established in the P
fic information for investment decision wil
ces will be provided on issues related to r
trial siting, machinery and instalment, sou
arketing.

As the area's resource base has suffered fr
rce management and improvement schemes have
ontinuing rubber replantation programme und
ulture and Cooperatives, the Songkhla Rubbe
nsible for R&D in rubber plantation and pro

On fishery, the increasing importance of
e of raw materials becomes evident in the i
e resources. The National Institute of Coa
epartment of Fisheries takes initiatives in
ery technology. The Department of Fisherie
ontract farming system by introducing large
gement with small farmers.

The role of the Southern Industrial Promoti
tion insofar as industrial services and sup
e. It relies heavily on Bangkok-based divi

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information, research and technical staff for training, being understaffed and underfunded. The centre, in collaboration with the Industrial Service Division has organized such basic courses as fibre-glass making, chromium plating, and boiler control. In 1985, five technical courses were conducted with total participants of 322. In addition, technical information service is offered upon request. Given the resource constraint, it can be said that the performance of the Centre is very good and their staff are very well accepted by the entrepreneurs.

Management training, provided by the Management Development and Productivity Division of DIP, is concentrated in town areas. The range of activities includes personal consultation, training and demonstration. In organizing each training course, close co-operation with the Southern Industrial Promotion Centre is the norm. In 1985, three courses on modern management technique, filing, and accounting were organized with the total participants of 140. The entrepreneurship development programme appears to have been quite effective. Many young businessmen have attended courses on management techniques, technology and marketing information. The courses moreover provided a platform for the exchange of information. Unfortunately, resources are again too limited to cover demand.

As regards private institutions, the Institute of Management Education for Thailand Foundation (IMET) in co-operation with the National Institute of Development Administration has played an important role in strengthening the secretariat of the Provincial Chambers of Commerce. Modern management courses are also organized for entrepreneurs in regional areas. In addition, consultancy services are provided upon request. Each consulting team will consist of IMET co-ordinator, a university lecturer, and an experienced

Businessman. The a IMET received financial assistance from the Centre for Inter-private Enterprise and from the fees of those participated in training courses. The Institute has a plan to launch a young business and civic leader programme which is similar to the entrepreneurship development programme conducted by Ministry of Industry.

Employment-oriented training is provided by the Institute of Skill Development at Songkhla. A wide array of courses is offered. In FY1985, the Institute trained 1,386 persons. Among the successful programmes are the training courses in mechanical and electrical skills, wood and metal working. The courses last from 4 to 14 months. Although these training courses are practical and employment oriented, they are not well known among SMI entrepreneurs.

Credit is provided by the Industrial Finance Corporation of Thailand (IFCT-see also section), in the form of medium- and long-term loans. The minimum and maximum loans for small projects are 0.5 and 5 million baht, respectively. During 1984-86, IFCT has financed 13 projects in Songkhla Province with the total loan amount of 33.3 million baht. The average loan size is between 2-3 million baht per project. Projects include smoked rubber, concentrated latex, brick, cement product, plastic product and refined palm oil. In addition, the industrial credit guarantee scheme will guarantee working capital and overdrafts for businesses with fixed assets of less than 10 million baht. Tax facilities include reduction or exemption of import duty, tax holidays, etc. So far these have only been extended to the larger industries, but it is considered including SMI in these schemes as well.

A survey of SMI in the area shows that Government support has in many cases not functioned satisfactorily. Entrepreneurs are critical of Government agencies because of their complex regulations, the overlapping activities of the wide variety of agencies and the shortage of qualified agency personnel on the spot. While there seems to be institutional overdevelopment in Bangkok, there is a shortage of essential infrastructure, including physical infrastructure, on the spot.

2.4 Promotion of small scale and rural industries in Palawan province, the Philippines

The Philippine administration encourages the regional dispersal of small and medium industries as a means for alleviating mass poverty. Small scale enterprises promote development consistent with the community's resources, whether it be the natural resources or the human wealth. More importantly, the proliferation of many small scale enterprises assures a distribution of wealth and power among the many as opposed to a situation where one large enterprise could dominate the economic and political life of a community. A basic consideration is that SSI development in the countryside cannot be separated from overall rural development.

One of the island provinces, Palawan, rich in natural resources but so far on the margin of national development efforts, is the locus of an Integrated Area Development Project (PIADP). This includes agricultural development, infrastructure, social and health services. The Rural Enterprise Development and Rural Employment Generation Project (RED-Palawan), started in 1983, builds on these improvements. It mobilizes the province's

entrepreneurial resources, complements the efforts of the public and private sectors and identifies and fills in the gaps in the development process through institutionalized support systems. Through its activities in research and project development, the project makes available relevant economic information directed to the needs of investors and extension workers. Its training and skills development efforts are oriented towards the development of the human resource base - the existing and potential entrepreneurs, the government extension workers, owner-managers, production workers, the private sector and others who will contribute to the province's industrialization. It extends technical and management services to its clients through extension workers and makes business information available to enterprises.

Project management and design was made the responsibility of the University of the Philippines, Institute for Small-Scale Industries (UP-ISSI) while the implementation of the three major programme thrusts was shared by the following institutions: UP-ISSI for research and project development, training and project management; PIADPO for co-ordination and monitoring; Small Business Assistance Center (SBAC) and the National Cottage Industry Development Authority (NACIDA) under the Ministry of Trade and Industry (MTI) for industrial extension and consultancy services. (Refer to Annex G for organization structure of the project.) The PIADPO provided the necessary funding for the implementation of the project, drawing from the Government of the Philippines (GOP) counterpart funds to the Asian Development Bank, and the European Economic Community's development assistance funds which amounted to about US \$85 million.

The following elements in the projects have been realized so far:

(i) Research and project development:

- Study of commodity flows and marketing of selected commodities;
- integrated socio-economic and investment potential surveys of Palawan;
- Five-year comparative agro-business and rural industry development plan for Palawan;
- Investment profiles of identified viable industries;
- study on entrepreneurial potential;
- inventory of SSI credit facilities.

(ii) Industrial promotion:

- Training programme on entrepreneurship, management, skills development, extension service training (total of 273 trainees so far);
- technical assistance and project promotion (total of more than 100 firms assisted);
- information dissemination (business newsletter, technology bulletins, investor's guide, establishment of the Palawan Agro-Industrial Technical Information and Assistance Network).

(iii) Industrial development and support services:

This programme thrust sought to facilitate and improve the delivery of services to the target sector through the formation of industry associations. The project built on the activities of an existing trade and industry organization in the province, the NACIDA Cottage Producers Association of Palawan and Puerto Princesa City, Inc. The local businessmen were involved in planning, selection and recruitment of participants and preparation of training programmes which made possible accurate identification of training needs and better programme design and implementation.

The programme also encouraged co-operation among entrepreneurs on raw material sourcing, marketing and credit. One result was the establishment of a display and marketing centre. Institutional support services were improved through training programmes for extension workers and networking among the Government agencies involved.

No impact evaluation of the project has been carried out yet. In an environment where most of the preconditions for industrialization still have to be created, the effects of promotion efforts will only become apparent after considerable time. One difficulty is the proper meshing of the activities of the various organizations and individuals involved; another is the restricted amount of resources available to the agencies which makes it essential that maximum efficiency is exercised, e.g. by concentrating resources on the most promising business activities. Properly and effectively involving the private sector in the projects has proved another problem. Experience shows that business responds better when Government agencies keep a low profile.

2.5. Evaluation and support measures

The present selection of examples shows that estates specially catering for SSI have not been too successful in helping SSI to develop. Although the Indonesian and Malaysian examples show different types of problems, the negative experiences in both cases strengthen a fairly general image of weak performance.

As already pointed out in a 1978 UNIDO study,^{1/} estates work best in an economy where industrial and general development have already reached a fairly high level, and they work best for relatively large-scale, capital-intensive industries. They can then serve to relieve congestion in metropolitan areas while at the same time benefiting from inter-industry linkages, a highly developed infrastructure, the network of industrial services and the large markets of the metropolis. A fairly well-developed economic "tissue" is in other words needed for such estates to emerge - for there is little evidence in developed market economies that artificially created industrial centres (growth poles, etc.) have served as locomotives for industrial growth.

Industrial estates are thus unlikely to perform their role well in the environment of the examples presented here: they were built on the periphery of medium-sized towns in areas where infrastructure and industry are still at a relatively low stage of development, where consequently industrial services will also be rather weak, and where the size of markets is modest.

^{1/} UNIDO - The effectiveness of industrial estates in developing countries. New York 1978.

The small size and traditional nature of the enterprises presents another problem. In most cases such enterprises need to be very close to the urban market both to acquire inputs and to attract customers. In the Ulu Gadut case, the estate was at 10 kilometres from the town of Padang, and although a number of SSIs managed to attract customers at the estates, many of them had to continue relying on some sort of "presence" in town in order to operate. Neither at this estate nor at Kota Bharu were any significant linkages developed (or likely to develop). The remoteness from the urban area thus increased SSI operating costs. "Presence" in town can be especially important in the case of sales: informal networks (e.g. the neighbourhood community) also play a role in creating a market niche for an SSI producing traditional goods, and such networks - which involve other than purely economic factors - may help an SSI entrepreneur to compete successfully against products from elsewhere.

The provision of support and services on the spot apparently is not sufficient to counter-balance the negative sides of the estate set-up. This will partly be the consequence of the general problems which are encountered by SSI support programmes focussing directly on the functioning of individual units (see Chapter 3). In the Ulu Gadut case, the fact that the larger industries did not do much to assist the SSIs was a major reason for the lack of overall success. The presence of cheap facilities is of course an advantage, but evidence shows that these may not be used efficiently. Groups of SSIs which have been established on a more or less spontaneous basis appear to function better. In the case of the Padang Cement Factory, there were strong linkages between the large-scale industry and the SSIs, and there was considerable skill and know-how transfer to the small units. The spread effects were also considerable, although this was at the cost of individual

unit growth. There was in fact very little Government intervention in the scheme. A weakness of the "foster father" system would seem to be the excessive dependence of the SSIs on the larger unit. Co-operation among SSIs (as in the Kota Gaoang) case, can be useful as it can be to procure raw materials (and) machinery that can be used collectively and for transport and marketing purposes. As the Indonesia example shows, and there is considerable evidence from other Southeast Asian countries pointing in the same direction, co-operation on more than an incidental basis is very difficult to realize. While common interests within such units often function on a family basis, the industrial network outside the individual units may as yet be too weak (area and/or industry-wise) for individual entrepreneurs to perceive sufficient advantages in co-operation and if co-operation is realized (which may take decades to function properly), this is most likely to succeed in the case of a very specific long-term concern - e.g. the bulk purchasing of a certain raw material, or marketing of similar products.

SSI promotion schemes have often been formulated in the context of overall area development programmes. Where agricultural production grows is a consequence of such programmes, SSI can serve growing rural markets and at the same time process an increasing volume of local raw materials, contributing to further dispersed economic growth.

The projects described here have not been functioning long enough to provide any general conclusions with regard to performance; moreover, their success is to a large extent dependent on the overall functioning of the area development projects themselves. The realization that SSI development (or any other type of industrial development planning) cannot be conceived or executed in isolation from a comprehensive concept of development is by itself of major

importance. There are many examples of industrial development plans where a significant role was to be played by industries relying on local or domestic agricultural resources which failed because precisely those resources were not sufficiently available as a result of badly concluded agricultural policies. Similarly, the absence of a sufficiently developed physical and social infrastructure outside major urban region has seriously constrained industrial development efforts.

Integrated area development plans, and the SSI component of them, are only likely to succeed if a number of conditions is fulfilled. First, development effects must be seen as a network of interrelated activities. This may seem obvious enough, but integrated area development plans have often predominately been lists of projects mainly related to each other by virtue of their being located within a circumscribed geographical space. In other cases, one economic sector is given systematic attendance while others are neglected. The analysis and establishment of linkages (in the widest sense of the word) is the key: linkages not only between industries, and between industries and other sectors of the area economy, but also the links with infrastructural and educational developments, with developments elsewhere in the country, with overseas markets.

Integrated development makes great demands on the agencies involved. While a linking and matching of institutional activities is essential, all too often there is absence of co-operation, overlapping and even downright ignorance of the purpose of other agencies. Thus, although the need for interrelated growth is realized in the countries studied above, material resources and manpower are wasted (and the attainment of development goals is delayed) because of the insufficient meshing of institutional activities.

This is all the more serious because development programmes for areas away from the economic and political centre of a country often suffer from a shortage of human and material resources. Although a centralization of highly qualified personnel and of other resources in capitals and a few other major cities is logical enough in early stages of development, the diffusion of development throughout a country cannot be undertaken without such resources being available on the spot - or without decentralizing decision-making.

Environment-related measures and projects for strengthening SSI would include:

- Thorough assessments of the small-scale development potential of the natural resource base against the background of long-term resource management;
- Stimulation of agriculture to strengthen the SSI resource base and to expand the rural market for SSI products;
- General improvements of transport and communication and of education;
- Special attention to human resource development in areas which are likely to be of importance for future industrial growth;
- Analysis of the constraints faced by SSI in a specific region to serve as a basis for tailor-made support services serving the actual demands of enterprises;

- Studies of commodity flows of/among the productive units (including non-manufacturing sectors) to gauge the linkage potential;
- Comparative analysis of formalized linkages in the various countries of a region (e.g. in South and East Asia: foster father schemes, export production villages, ancillarization);
- Measures to strengthen the know-how transfer to and the contractual status of SSI in formal and informal linkage schemes;
- Tar measures favourable to the development of subcontracting (e.g. special low VAT rates);
- Identification of naturally-grown SSI clusters for tailor-made types of support;
- In more developed economic/areas: provision of sites with basic infrastructure at points of good access to urban/external markets;
- Identification of and co-operation with/stimulation of spontaneously grown networks among SSI entrepreneurs;
- Co-operation between SMI in regions in developing countries and regions in developed countries.

3. ENTERPRISE-ORIENTED PROGRAMMES

In this chapter, the focus shifts from measures to stimulate the environment in which SSI operates to measures directly supporting individual units. The programme assessments and suggestions below are primarily based on the following case studies covering four main aspects of direct support to individual enterprises:

- entrepreneurship and management development programmes in the Philippines;
- technical support in Malaysia;
- SMI financing schemes in Thailand;
- Commercialization of R&D for SMI, Republic of Korea.

3.1 Entrepreneurship and management development

In the Philippines, a number of programmes has been implemented to stimulate SSI entrepreneurship and to improve management. The Ministry of Trade and Industry runs the Medium and Small Scale Industries Co-ordinated Assistance Programme (MASICAP) and the Market Information and Direct Assistance Project (MIDAS) for this purpose.

MASICAP was designed to actively seek out entrepreneurs requiring support to deal with the complexities of assistance schemes, project organization and

loan requirements, thus enhancing the business potential of the SMI sector. The first step was to assess the existing economic activities in a number of towns and provinces and the potential for expanding them, along with the availability of industrial services and support institutions. On the basis of this information, prototype projects were formulated and entrepreneurs were sought out who, with MASICAP assistance, could be expected to carry through these projects. Part of the work was carried out by college and university students who thus acquired first-hand experience with development problems. The experience gained with MASICAP led to the formulation of a scheme to improve SMI marketing. MIDAS supplied information on domestic and export marketing, on buyers and suppliers. Information was supplemented by training courses for entrepreneurs, and six roving marketing assistance teams actually served as buyers and sellers.

Earlier programmes that were successful, even though their scale and time duration was limited, were the Local Study Mission (LSM) and the Sectoral Productivity Association (SPA). These were both set up by the Productivity and Development Centre of the Development Academy of the Philippines.

The starting point of LSM was the hypothesis that direct information exchange between rural entrepreneurs and those in the capital would help to stimulate the farmers' activities. Visits to Manila plants, combined with lectures, discussions and workshops, was expected to be a more effective way of transmitting know-how than training of the classroom type. The sharing of experience was considered to be an instructive exercise by itself.

The project consisted of a series of area and sector-specific sub-projects. Focus was on three industries - the garments, metal-working and

furniture industries - which dominate the rural SMI sector. First, a preliminary study was made, whereafter an economic profile of the area was drawn up, and the need for assistance assessed. Then participants were selected from lists provided by the Small Business Assistance Centres of the Ministry of Trade and Industry. Participants had to belong to the small and medium business category, show an aptitude for business (with increased sales as a criterion) and have at least two years of experience in the present business. For know-how transfer, staff members of the Development Academy and persons with experience in the industry branch in question were selected. Whenever possible, visits to three factories were planned, a small, medium-scale and large one. In this way, participants could be familiarized with the different demands at various stages of growth. Altogether, 320 industrialists (roughly equally divided among the branches) and 55 staff member of the Small Business Assistance Centres took part in LSM.

A 1980 evaluation of LSM indicated that production management had been improved in a number of ways; also, technological innovations had been introduced in a number of enterprises.

It was observed, however, that the more significant improvements were introduced by those entrepreneurs whose enterprises already possessed relatively well-developed techno-managerial capabilities. These relatively large enterprises disposed of more qualified personnel and more resources in general to implement the ideas and observations which were the result of participation in the LSM. To maximize the benefits from the approach outlined above, the difference in absorptive capability among enterprises should therefore be taken into consideration.

Other results of the LSM were the trade and sub-contracting linkages that were worked out by the entrepreneurs among themselves. These were established in two forms: trading and subcontracting arrangements between Manila-based enterprises and countryside enterprises; and specialized subcontracting among enterprises in a locality.

The SPA project was a result of LSM. LSM participants, now realizing the usefulness of collective activities, decided to address constraints related to the size of their enterprises in the adoption of improvements, e.g. meeting big market orders, installation of certain production facilities, training, management development, etc. LSM participants were therefore encouraged to form what were called "core organizing groups" for the formation of Sectoral Productivity Associations. These were area-specific, sector-based associations of small and medium scale entrepreneur-managers (e.g. furniture makers in the same locality). It was assumed that they would have very specific common concerns that would require and encourage a group approach.

To help the new SPAs mount substantive activities aimed at upgrading the techno-managerial capabilities of the entrepreneur-managers, PDC undertook seminars and workshops jointly with the STAs. PDC also assisted SPAs in the formulation of their annual operations plans and helped identify financial and other resources and generally acted as an intermediary between SPAs and Government agencies.

- helped to organize needs assessment workshops;
- identified areas for external assistance;
- formulated action plans;
- assessed support activities of relevant Government agencies;

- established contacts between SPAs and these agencies;
- assisted agencies in the development of support packages.

By late 1981, 25 SPAs had been formed with a total of over 400 members. Long-term viability proved to be their main problem. Organizing the SMI entrepreneur-managers was easy when there was a common, pressing problem to be addressed. However, once the problem was solved, the interest of the members in the association waned and it would take an outside organization like PDC to revive that interest. The associations then became active again for the duration of PDC involvement. The objective of a sustained, self-reliant association network could not be attained.

The more lasting associations were those organized for specific purposes e.g. joint purchasing of raw materials or joint ownership of a processing facility. In these cases, the associations had a specific continuing concern and there are direct gains for members while the actual operation of their association demands little time.

A scheme somewhat similar to LSM has been implemented in Indonesia, where rural SSI entrepreneurs were brought into touch with more advanced industrial enterprises in the countryside. The development of such contacts is then largely left to the enterprises themselves. The non-directive approach seems essential: entrepreneurs are unlikely to benefit from (or even accept) directions on how to run their enterprises imposed by outsiders.

3.2 Technology support

Low levels of technology negatively influence both productivity and product quality. To improve technological performance of SSI, and to increase overall productivity in key branches like food products, metal working and wood products where small enterprise predominates, the Malaysian Government created the Technology Display and Resource Centre (TDRC). TDRC was to serve as:

- (i) a focal point through which SSIs can have access to information (in the form of books, periodicals, etc.) on available suitable technology;
- (ii) a place where various types of modern machinery can be displayed and demonstrated for the benefit of SSI;
- (iii) a provider of consultancy and advisory services to the SSIs.

Specifically, the Centre was given the following objectives:

- (i) upgrading technical knowledge and skills within SSIs;
- (ii) upgrading management skills of SSI entrepreneurs;
- (iii) advising SSIs on matters regarding the suitability, characteristics and supply of equipment and machinery;
- (iv) advising the SSIs on the financing of machinery;

- (v) encouraging the modernization of production techniques so as to increase efficiency and thus profitability;
- (vi) upgrading the quality of finished products; and
- (vii) creating a sense of awareness among the general public on the contribution of SSI to development.

The centre does not dispose of sufficient funds and especially qualified manpower to be able to achieve all these objectives. It has, however, been able to provide support in the following ways:

(i) Machinery exhibitions

Once every three months, the Centre exhibits equipment for a specific type of industry. This creates an awareness of available technology, its costs and potential, among SSI entrepreneurs. These exhibitions have focussed on the industries in which SSI predominates: food processing and packaging, light engineering, wood-working, etc.

(ii) Study tours

These are organized (and paid) by the Centre to enable visits to the exhibitions by entrepreneurs from outside of Kuala Lumpur, where TRDC is located. The focus also enable the entrepreneurs to use other information services of the Centre (lectures, reading matter, film, etc.). To complement the study tours, temporary exhibitions were also organized at Ipoh and Kuantan.

(iii) Consultancy and advisory services

These cover a wide range of themes, including:

- sources of finance and eligibility;
- choosing the right mix of machinery;
- identification of business opportunities;
- project feasibility studies;
- general management problems;
- marketing strategies; and
- planning and control procedures.

The majority of SSI entrepreneurs tend to seek advice on project financing and the selection of machinery and equipment, indicating the two major constraints that impede the expansion of SSI.

Lack of personnel, funds and facilities have limited the support that the Centre has been able to give. Moreover, not all equipment suppliers have been inclined to participate in the exhibitions, and the information provided is not always designed to be effective in the Malaysian SSI environment. These limitations and its urban location have strongly reduced the number of entrepreneurs that could be reached by the Centre. A new, larger centre in Kuala Lumpur and intensification of TDRC co-operation with the coverage and effectiveness of the Centre.

The Standards and Industrial Research Institute of Malaysia (SIRIM) is of particular interest in this context. Since its establishment in 1975, SIRIM has served as a national nucleus for promoting standardization, certificating

trade marks, industrial research and other related industrial activities. SIRIM, with its wider experience and access to well-qualified personnel and already represented in SSI policy making could complement the present activities of the TDRC. A vital link to upgrade the level of the SSIs and increase their contribution towards manufacturing growth could thus be created.

The recent establishment of the Metal Industry Technology Centre (MITEC) within SIRIM should act as a catalyst to improving the technical capability of the SSIs. MITEC has already contributed towards the improvement of the SSIs in metal and light engineering through practical training courses, in the areas of die-making, presswork, welding and electroplating. To complement this, SIRIM also provides technical advisory services through its Industrial Extension Services Unit, enhancing industry's capacity to produce quality products at minimum cost by using the most appropriate technology. These advisory services cover such areas as production technology, production control, production cost and technical information pertaining to factory location, materials handling, storage and maintenance.

Extensive support programmes exist in the Republic of Korea, where the Government has established the Technology Support Centre for Small and Medium Industries for this purpose. Apart from a transfer of technology department and a service for general technical support, it disposes of specialized foundry and precision machinery centres. Each of these departments assists several hundreds of SMI entrepreneurs yearly. The Technology Transfer Centre has intensive contacts with Japan, the US and major European manufacturing countries, and also with multilateral organizations such as UNIDO. The General Technical Service Section is also involved in R&D for SMI, in fields

that have been designated at national priorities. This type of support takes on various forms:

- One-researcher-for-one-industrial firm style support service. (The technical support system's version of a "home doctor".)
- Development of common bottleneck technology in small and medium industries;
- Efforts to stimulate an open-door policy in the research laboratories of government-supported research institutes so that easy access can be established for eminent inventors and/or small and medium industries.

A more extensive discussion of Korean R&D for SMI may be found in sector. An SMI scheme that was well received in Thailand was the Southern Region Industrial Promotion Centre, established by the Ministry of Industry in 1982. The Centre has organized courses on a.o. fibre-glass making, chromium plating and boiler control. Technical information and in some cases consultancy are also provided. The Centre could expand its activities if sufficient staff, information and research facilities could be made available; at present, the Centre has to rely on Bangkok-based divisions of the Ministry for such resources. As in the case of the Republic of Korea, these activities largely focus on a more developed section of SMI.

3.3 SMI financing

Lack of credit is a common constraint of SSI. From the viewpoint of commercial banks, SSI represents a problem. Its wide diffusion and the great number of small loans that would have to be made considerably increase the cost of providing credit. High failure risk, inadequate collateral and poor record keeping are other drawbacks.

In many developing countries Governments have stepped in to replace private banking as a source of SSI credit. A major institution in Thailand which allots part of its resources to the solution of the SSI credit problem is the Industrial Finance Corporation of Thailand (IFCT), which specializes in medium- and long-term financing of fixed assets. Since its inception in 1959, IFCT has financed 382 small-scale projects which constitute about 50 per cent of IFCT's total number of projects. In terms of loan amount, small-scale projects make up 8 per cent of the total.

In 1984 a special loan unit for small-scale projects was created to implement IFCT's current strategy to strengthen its promotion of small industry and regional development. Through a branch network, financial services are offered, including long-term funds for fixed-asset acquisition and short-term working capital loans. The target group consists of manufacturing and service units that have net fixed assets below US \$265,000, and a maximum long-term loan requirement of US \$132,500. The interest rate on loans is the same as on IFCT's normal loans, which currently stands at 14.5 per cent per annum.

So far, the loan facility has been extended to 104 clients totalling US \$10.5 million. Clients in manufacturing are mainly engaged in food processing, the production of construction materials, wood products and furniture making.

The export modernization programme of IFCT. This new financing programme for small and medium sized enterprises which initially will involve 30-40 firms, differs from the small industry lending activity described above in three major respects.

Firstly, the programme has a more specific objective. It is intended to enhance the competitiveness of export-oriented manufacturing through the modernization of production facilities and improvements in product quality, work and management systems.

Secondly, in order to achieve this objective, the programme will link the provision of technical assistance with the provision of financing, not just in the project implementation phase, but throughout the project cycle.

Thirdly, since only some US \$22 million in foreign and local currencies will be available for lending and technical assistance (the foreign component is provided by Japan), the programme will concentrate on selected priority export sectors.

The largest group consists of modernizing small and medium-scale exporters of manufactures in priority sectors (food processing, metal products, garments, wood products, toys, footwear, rubber goods and electronics). The selection is made on the basis of firm size (maximum:

US \$1.85 million in net fixed assets) and a 30 per cent share of exports in total sales. Repayments of loans are to be used as a revolving fund for further loans.

The programme is based on the premise that modernization of an enterprise should cover all aspects of its operations, and not just be a matter of making finance available. The programme therefore also includes

- Basic market research to identify business/product opportunities;
- The preparation of project studies to comply with the requirements of IFCT, and government agencies if necessary;
- Production management assistance, including product design and quality control;
- Operational management assistance, covering e.g. financial management and marketing.

A country which has been very active in financially supporting SME is Indonesia, the KIK/KMKP programme has since 1974 made hundreds of thousands of small enterprise loans averaging a few thousand dollars each. These loans, handled largely by the state commercial banks which dominate the banking system, have had a wide regional and rural outreach. They have been funded by the government through the central bank and ASKRINDO, the state loan insurance company which underwrites the programme's mounting bad debts. Since the 1983 reform of the financial system and the drying-up of further government funds, the KIK/KMKP portfolio has hardly increased, in sharp contrast to preceding

years. The banks now regard it as marginal to their lending, and unprofitable. KIK/KMKP was envisaged as supporting new enterprises and particularly industrial ones. In fact, the bulk of lending has been to existing enterprises, and to the banks' favoured sector, trade.

In a number of countries, finance (for equipment has also been made available by technical support agencies. Their credit schemes have generally not been successful. The reason is probably that they have charged too low interest rates, and have regarded their clients as a favoured group without very much regard to their creditworthiness. Since they have also usually been based on "outside" government or external funds, both the programmes and their clients have tended to regard the loans as something of a gift. In some cases these flaws have been compounded by an exclusive emphasis on fixed asset finance and by over-centralization of procedures.

Savings and loan associations, though not a very common phenomenon and never designed to serve industries as such, have shown more promise. In the region, Indonesia provides a number of examples, two of which will be mentioned here. In contrast to many credit schemes, they are characterized by high interest rates, quick-repayment schedules and low arrears.

The Indonesia Bank Kredit Keeamatan (BKK) operating in Central Java is in fact a grouping of savings and loan associations at the keeamatan or sub-district level which are run by the local authorities and controlled by the Development Bank. Due to shortages of competent banking staff, the model has not been successfully transported to other parts of the country yet. The Bank Rakyat Indonesia (BRI), a Government agency, has initiated a rural savings and loan programme, inspired by the BKK programme, on a very large

scale. It now involves 4 million savers and 1.3 million borrowers; the latter are all very small scale enterprises. Few of the borrowers so far belong to the industrial sector. The scheme is not only a numerical success: arrears are very low and the programme has a financial surplus.

3.4 Promoting R&D

As industry develops, the role of R&D becomes more crucial and its financial and manpower requirements increase. It is especially important for developing countries that R&D is closely linked to the needs of industry; at the same time, the manufacturing sector - and especially SMI - may not be in a position to find the expertise and funds needed. Government assistance may thus become essential to increase the technological level of the smaller industries.

The Republic of Korea took a step towards technological self-reliance with the establishment of the Korea Institute of Science and Technology (KIST) during the second Five-year Plan (1967-1971). A special aspect of its work was the transfer and adaptation of technologies for SMI. Part of the research was Government-sponsored and made generally available, part was carried out under contract with individual enterprises. KIST was merged with the Korea Advanced Technology Institute of Science to form KAIST in 1981, concentrating the manpower and resources domestically available for this type of work in a simple organization.

Meanwhile, a number of industries (especially larger ones) have established their own research institutes, assisted by a variety of measures

stimulating private R&D. Of great importance in this context was the Technology Development Promotion Law, enacted in 1967, providing a framework for various incentives aimed at reducing the cost of foreign technology imports and of industries' in-house R and D work by allowing: reduced tariffs on the import of R and D equipment; deduction of annual non-capital R and D and engineering expenditures from taxable income; accelerated depreciation on industrial R and D facilities; and a tax credit for investment in facilities for R and D and engineering work or commercialization of local R and D results. Furthermore, the law permits a company to set aside as "technology development reserve funds" up to 20 per cent of profit before tax in any one year for use in its R and D in the following two years. The Korea Scientific and Engineering Foundation, established in 1977, provides funds for strengthening basic and applied Research. In 1981, the Korea Technology Development Corporation was founded to provide venture capital needed to promote the formation of technology-based enterprises. KTDC is largely controlled by the Federation of Korean Industries.

The expanding role of private R&D has left two important tasks to KAIST: it engages in long-term basic research ("seed technology") and it helps SMI to acquire and apply relevant new technologies. The total number of research projects contracted up to the end of 1985 was some 4,000, with a total value of US \$140 million. A recent evaluation of KAIST projects shows that those involving process innovation were commercially the next successful. Existing demand for the products incorporating the innovations was generally an essential condition for success: there was a relatively high failure rate among projects where the application of a new technology had been a more important consideration than the ready availability of markets.

The actual commercialization of KAIST's R&D, in the form of joint ventures with private enterprise is handled by the Korean Technology Advancement Corporation (K-TAC), now jointly owned by seven research institutes closely linked to the Ministry of Science and Technology (MOST).

K-TAC's tasks are:

- (i) Commercialization of research results using know-how generated by various institutes. Other foreign and domestic technologies can also be utilized.
- (ii) Marketing and sales of research results and their related industrial rights.
- (iii) Sales of prototype equipment and by-products of research development work.
- (iv) Sponsorship of additional R and D when required.
- (v) Management assistance and market research.

Over the years, the company has maintained a group of specialists whose expertise is market and feasibility studies. Financially, the company operates with a revolving fund. In principle, an organization like K-TAC can also be part of a Government research institute. It is, however, felt that by operating on a commercial basis its efficiency in introducing new technologies is greatest.

It is important to note that the recovery period of initial investment averages around 5 years, which is quite long. K-TAC's experiences so far show that the capital gain is approximately equal to the original investment, i.e. the value of the stock doubles in five years.

K-TAC regularly reviews progress in R&D. When the review uncovers a potential commercialization area, the next stage is to conduct a prefeasibility study in which a market survey is central.

This is often time consuming but most essential in deciding whether the project merits a more thorough feasibility study. Approximately one quarter of the projects survive this phase. This is followed by more detailed analysis where such items as initial capital investment and internal rate of return are estimated. Further attrition occurs and only about 10 per cent of the original number survive for further pursuit.

It is at about this stage that K-TAC begins an earnest search for a business partner. The partner preferably should have a manufacturing or sales experience. The identification of this competent partner probably is the most important factor in making the project a success.

Once the business partner is decided, K-TAC together with the partner reviews the feasibility in detail. At this stage, they also draft and sign such documents as joint venture agreement, technology licensing agreement and articles of incorporation of the new company. All details are examined carefully including the method and valuation of the stock when K-TAC decides to sell its share to the partner in the future. Financing of the project must also be discussed in detail. Normally, it is desirable for the new company to

borrow only about half of the total investment required. Up to 70 per cent of the funds needed by the business partner can be borrowed from MOST, repayable in five years. In case K-TAC plans to consider research results as a part of equity participation, it is at this time that both partners should agree on the monetary value of the know-how or patents generated through the research.

Should K-TAC decide to do so, K-TAC can also invite development banks to take part in the venture. K-TAC's experience with the development banks has been very good as exemplified by the frequent participation of the Korea Long-term Bank, (KLB) (formerly Korea Development Finance Corporation) in K-TAC projects.

The present age is characterized continuous Technological innovation. The survival and growth of the venture depend heavily on the company's ability to absorb new technology. In all cases of K-TAC's success, KIST and later KAIST have continued to support the companies with second and third generation technologies to keep up with the technology advancement.

Important factors for successful commercializations according to the K-TAC experiences are:

- thorough and detailed feasibility study;
- selection of a competent business partner with strong entrepreneurial spirit;
- adequate financial resources; and

- continuous source of technology upgrading.

Several production and technical inadequacies were identified and these were mainly problems related to the sale of the operation. These enterprises did not have the capacity to maximize economies of scale in areas such as the procurement of raw materials, production levels and distribution of their products. Although joint procurement and marketing arrangements can alleviate the problems associated with the small scale of operations, such arrangements were almost absent or poorly organized.

Most of the entrepreneurs seemed to be aware of the need to have quality control since this was, considered an important determinant in influencing their market shares or competitiveness in the market place. However, proper quality control practices were sometimes hampered by the general lack of technical knowledge. Lack of quality control was observed to be more prevalent among the food processing enterprises as reflected by the high percentage of products being returned.

A more serious problem faced by most entrepreneurs in production was inadequate technical knowledge, particularly in the process of selecting the major parts of machinery or equipment used in their factory sites. In most cases, both Malaysian Agricultural Research and Development Institute (MARDI) and the Standards and Industrial Research Institute of Malaysia (SIRIM) were consulted only after the equipment or machinery were purchased.

Sixty per cent of the entrepreneurs indicated that technical problems associated with the purchase and usage of machinery were the major problems constraining their production. In addition, the lack of technical knowledge

and know how about their equipment and machinery in general reduced their ability to detect slight defects in time before major breakdowns and production stoppages occur. The presence of a reliable engineering facility at the estate might have remedied this problem.

3.5 Evaluation and proposals for action

Direct assistance projects to SSI seems to have functioned best where the entrepreneurs themselves had a stake in the projects. Of the examples studied here, the Philippine entrepreneur/manager development scheme was successful in spite of its limited scale and time duration because entrepreneurs were enabled to directly exchange experiences and at a later stage were directly responsible for the success of the co-operative activities undertaken to solve common problems. Evidence elsewhere in the region supports the notion that entrepreneurship cannot be "produced" by an outside agency. Rather, projects should limit themselves to providing those services that will bring out or further develop the entrepreneurial potential that is there while making it clear to participants what the individual and collective gains of intensive involvement in the schemes are. It seems that at lower development levels forms of association between SSI entrepreneurs are less likely to exist or develop spontaneously, and in such cases there is little sense in expecting too much of projects that function on a co-operation basis. Platforms for exchanging experiences with other entrepreneurs, however, can be very useful, and these may introduce the action among entrepreneurs that common problems may be solved by common activities.

Evidence on the performance of the Thai credit schemes is as yet too scarce for a proper evaluation. More generally speaking, however, credit programmes have not functioned well at lower development levels; at higher development levels they may become in part redundant as SSI access to formal banking improves. For specific sections of SSI with good market prospects, credit schemes may then still be useful, and they are more likely to succeed because enterprise management will have improved considerably.

For small-scale industries in especially rural areas, co-operative savings and credit schemes may be a better way to provide finance there are two reasons for this. One is the general argument of giving entrepreneurs a stake in the successful functioning of a scheme. The other is the lower cost of credit provision. As indicated above, the cost of providing a multitude of small loans in dispersed locations, and of monitoring the paybacks, can be very high indeed. There is also the shortage of competent banking or credit programme staff to be reckoned with. This does not mean that there should be no diffusion of banking to rural areas, but this is to be a long-term process, depending on the growth of rural prosperity, the availability of more staff at the banks (itself partly dependent on overall educational improvements) and last not least a change in attitude among bankers: their reluctance to provide credit to SSI and rural areas (even if obliged to do so under credit reservation schemes) is in part a consequence of an urban/large enterprise perspective which can only be partly justified on purely economic grounds. The stimulation of savings and credit co-operatives will have to take into account the socio-cultural background for their emergence. The widespread occurrence in Indonesia is to operate in the more remote areas, when facilities and living conditions are likely to be far inferior to those in the cities. If SSI is to be a major factor in decentralized development, then its

support services should also be decentralized to the extent that this is economically justified.

The Malaysian experience points to another problem of technology support: information, training courses and equipment that may not work under the circumstances which are typical for SSI in a specific region or industry. Designing proper information and training methods, and the right choice of technology - if necessary adopted to the local environment - becomes essential for efficient support to SSI.

With regard to the latter, the Korean experience is interesting. Although, in comparison to many other developing countries in East and Southeast Asia, Korea's industry is fairly advanced, the lessons of the commercialization/promotion schemes can be useful in designing in part to be ascribed to the existence of traditional rotating credit associations. Where such traditions are absent, it may prove extremely difficult to introduce co-operation in financial matters. (Generally speaking it can be said that co-operative forms of economic activity - if they are to be more than short-term undertakings - can only emerge if, apart from an economic rationale, the socio-cultural environment stimulates co-operation.)

Technology support has a somewhat mixed record. The accessibility of support institutions in the major urban centres may often be a problem for the small entrepreneur located elsewhere in the country; even if he is enabled to travel to the city for training or information, he may be reluctant to leave his business unattended to. This has e.g. been one of the drawbacks of the Malaysian scheme. In the present case, the limited resources available may

have been decisive in locating the scheme in the national capital. Again (and this has been noticed in other technical support units located in capitals or major towns), there may be a reluctance on the part of staff to operate in the more remote areas, where facilities and living conditions are likely to be far inferior to those in the cities. If SSI is to be a major factor in decentralized development, then its support services should also be decentralized to the extent that this is economically justified.

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With regard to the latter, the Korean experience is interesting. Although, in comparison to many other developing countries in East and Southeast Asia, Republic of Korea's industry is fairly advanced, the lessons of the commercialization/promotion schemes can be useful in designing support for the future growth of the more sophisticated SMIs in other countries. Keeping abreast of technical development is after all essential to remain competitive. The Korean case is distinguished by very intensive co-operation with private enterprise and a strongly client-centred approach. Even of the joint venture form in which technology is transferred may only be feasible at a certain development level, this basic attitude is valuable in other cases as well.

In many cases, the various types of assistance discussed above are supplied in package form by one agency. Although this principle offers the advantage of co-ordinated all-round support, practice has shown a number of shortcomings. First, the rather complex operations necessitate a fairly large organization which will tend to be located in a major city; the some disadvantages for SSI in rural or other marginal areas as outlined above apply. Organizational complexity may also result in rigid hierarchies and bureaucratization, while great flexibility (and if necessary the abandonment of inefficient individual programmes) is essential for successful support.

Third, the institution as a whole will only function efficiently if all separate services function properly and are meshed with each other. Given the resource constraints that often exist and the tendency for specialists to work in isolation from each other, the likelihood is fairly great that institutional performance will be uneven.

These criticisms notwithstanding, direct support to SSI has contributed to its development in many ways. To strengthen the impact of direct assistance on SSI development, the following policies and measures are suggested:

- rationalization and co-ordination of support agencies and programmes after thorough analysis of their present performance;
- improved access to support through decentralization (to the extent possible without loss of efficiency) and simplified administrative procedures;

- more careful assessment of SSI needs and consequent adaptation of support programmes;
- involvement of existing organizations of SSI entrepreneurs in such assessments and programmes;
- encouragement of interaction between SSI entrepreneurs to stimulate the emergence of co-operative networks;
- increased involvement of retired SMI managers from developed countries as business consultants in bilateral and multilateral support schemes;
- improving society's image of SSI and the self-perception of entrepreneurs (e.g. by publicizing "success stories");
- increasing the understanding of SSI problems among agency and bank personnel;
- assessment of formal banking sector credit reservation schemes for SSI;
- analysis of informal credit systems and possibilities of harnessing these for SSI development;
- monitoring trends in technology with possible SSI applications and improving information dissemination on technological issues;
- improving access of SSI to applied technical research;

- where technical support resources are limited: exploration of possibilities of mobile assistance teams;

- stimulating increased enrolment in vocational training schemes and technical colleges and adaptation of their curriculae to industrial needs.

SELECTED REFERENCES

1. Promoting small-scale industry in Southeast Asia: selected support schemes in the Philippines, Thailand and Malaysia (UNIDO/IS.618 of 19 March 1986)
2. The Republic of Korea: Commercialization of R and D results with particular reference to the small and medium industry sector (PPD.21 of 23 January 1987)
3. Mr. Melito S. Salazar, Jr. and Mr. Arturo O. Mangabat, "Promotion of small scale and rural industries in Palawan Province, The Philippines.
4. Mr. Anuwar Ali and Mr. Ismail M. Salleh, "Small scale industrial development in Malaysia: The case of the 'Nursery Factory Scheme' in Pengkalan Chepa, Kelantan".
5. Mr. Narongchai Akrasanee, "Promotion of small and medium scale industrial development in the Songkhla Lake Basin, South Thailand".
6. Mr. Hendra Esmara, "Promotion of small-scale industrial development in the West Sumatra Province, Indonesia".
7. Mr. James Keddie, Mr. Subrahmanyam Nanjundan and Mr. Roger Teszler, "Thematic evaluation of technical co-operation in support of rural small industrial enterprises".