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15485

Distr.
LIMITED

UNIDO/IS.617
14 March 1986

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

ENGLISH

**POLICIES AND STRATEGIES FOR SMALL-SCALE INDUSTRY DEVELOPMENT
IN ASIA AND THE PACIFIC REGION**

Report on study programme and expert group meeting
held in Seoul, Republic of Korea, 17 - 20 September 1985*

Prepared by the
Regional and Country Studies Branch
Division for Industrial Studies
in co-operation with the
ESCAP/UNIDO Division of Industry, Human Settlements and Technology

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EXECUTIVE SUMMARY

In its study programme, the Regional and Country Studies Branch of UNIDO, gives special attention to the role of small-scale industry in the industrial development process. In this context an Expert Group Meeting on Policies and Strategies for Small-scale Industry Development in Asia and the Pacific Region was held in Seoul, Republic of Korea, on 17-20 September 1985. It was organized jointly by the Regional and Country Studies Branch, UNIDO, and the ESCAP/UNIDO Division of Industry, Human Settlements and Technology, in co-operation with the Korea Advanced Institute of Science and Technology (KAIST). The presented documentation and the proceedings of this meeting were synthesized in this report.

The report examines first the role of small-scale industries (SSIs) in industrialization (Chapter II) and shows that small-scale enterprises dominate industrial activity in many developing countries, both in terms of the number of establishments and employment. National planners and policy-makers are indeed increasingly aware of the decisive role SSIs can play in expanding and diversifying industrial production and in attaining the objectives of socio-economic development. Thus the SSIs contribute in particular to:

- 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;
- supplying parts and components for large-scale industries.

On the other hand SSIs are encountering various challenges particularly in terms of pressures to introduce new technologies, such as micro-electronics. The introduction of micro-electronics technologies in small

enterprises presupposes, however, that concomitant social and economic problems can be solved.

In a following chapter (III), current policies, strategies and programmes for SSI development are reviewed. It is shown that effective support to SSIs is generally provided through:

- macro economic policies which create a favourable economic environment;
- the clear pronouncement and continuation of government policies and priorities so as to create an atmosphere of confidence and stability;
- integrated public support programmes readily accessible for the SSI entrepreneur.

The support needs to be directed to the traditional and modern technology-intensive SSIs respectively. For traditional industries the most urgent problem to be solved is raising the general technological level whereas for modern industries it is the lack of highly qualified labour and of capital. For both categories of small industries assistance in the identification of new markets is needed.

More specifically, the following forms of support to SSIs can be observed:

- provision of training for entrepreneurs and labour;
- provision of information on markets, technologies, etc.;
- rendering of financial support, through tax reductions and/or credits;
- assistance in improving productivity and product quality and in adaptation to modern production processes;
- establishing required physical infrastructure (outside major urban areas) so as to ensure the mobilization of rural SSI potential;
- provision of trained support staff for these schemes; and
- initiating and supporting programmes of co-operation, locally, nationally and in Asia and the Pacific region.

It has been noted that Government support programmes with a strong regulatory and controlling stance can be counterproductive. Support programmes need to be designed so as to assist and not replace or obstruct

entrepreneurial initiatives and decisions. A form of support to SSI which deserves to be further explored is the arrangement of international co-operation between SSIs in developed and developing countries to enhance the transfer of modern technologies to the latter.

Some selected key areas for SSI support are examined in greater detail in Chapter IV.

The development of small industry entrepreneurship is certainly a key issue for developing countries, which need to catch up in a rapidly changing international economic and technological environment. Special measures to stimulate (potential) entrepreneurs and increase their know-how are therefore called for although it is problematic to formulate effective entrepreneurship development programmes per se. This is not just a technical issue: socio-cultural and political factors also play an important role in the making of successful entrepreneurs. Thus the "creation" of entrepreneurial skills and initiatives is also largely a matter of improving general education and vocational training and of providing an environment, in the administrative services and society, which is sympathetic to the role and needs of the small industrialist.

Some important aspects to be considered for entrepreneurship development programmes are:

- the need for quality rather than quantity: A few enterprises which are successful in the long run are more important to the economy than the setting-up of a large number of firms;
- the need for time restrictions: Entrepreneurs generally are engaged full-time already in an occupation or an enterprise and have very limited time to their disposal;
- the need to take account of special local circumstances;
- the need for enrolling trainers well familiar with the business environment for transferring practical instead of theoretical knowledge.

Of particular interest are the new forms of small-scale industry co-operation which can significantly stimulate the growth and economic efforts by SSIs. Such co-operation schemes may involve activities in fields, such as

contacts with large industries (e.g. subcontracting exchanges); joint marketing, joint R and D; joint administrative services; co-operation with financial institutes; setting up and operation of own technical service institutes and/or co-operation with such public and semi-public institutes; management and skills training; etc.

The establishment of such schemes may be furthered by:

- Promoting the forming of companies' groups, associations and/or co-operatives among private sector entities. Special attention would need to be paid to the training of such groups' executive officers, who should have a thorough knowledge of the industry, good contact with local government and a broad knowledge of supplier services;
- Introducing government agencies responsible for SSI to new forms of association, and creating joint government-business supervisory boards in such agencies;
- Establishing government procedures enabling groups of SSIs to participate in public tenders.

It may also be possible to arrange for members of SSI associations from developing countries to be informed about and introduced to the organization and functioning of such associations in developed countries.

Establishing linkages between small and large scale industries is one important approach for enhancing SSIs growth prospects. The main forms of linkages currently practiced are subcontracting and product complementation arrangements. Another form which is still rather uncommon in the region is the contracting of SSIs by large industries for the provision of services in the areas of maintenance and repair, technology services, computer software services and alike. While inter-industry linkages in developed market economy countries are mainly market-induced, the initiation of co-operation between small and large industries in developing economies may need to be provided by outside support due to shortcomings of the markets and the lack of experience of SSIs to meet product specifications and delivery schedules as set by the larger partner.

The support to establishing and strengthening small/large industry linkages can be provided through:

- promotional measures to foster the establishment of subcontracting and complementation linkages between SSIs and large-scale industries;
- technical and quality control support measures for SSIs to meet quality standards of the contracting company;
- schemes to enable SSIs to qualify for participation in public tenders and activating SSI associations to identify tender potentials for its members;
- elimination of double taxation for products manufactured under linkage agreements;
- creation of national and regional subcontracting exchange schemes.

Another area of support is the promotion of exports of small-scale industries. Due to their limited resources SSIs are usually not able to identify and utilize their export prospects. SSIs could certainly contribute to considerable foreign exchange earnings, especially since they primarily use local rather than imported raw materials and other material inputs. To achieve such export-orientation, however, requires SSIs to be able to adjust the production to changes, meet minimum economies of scale, maintain required quality and delivery times, have access to utilize information on international market trends and to dispose of sufficient working capital reserves to absorb the consequences of delays in international payments. With other words, shifting to an export-orientation will usually mean a complete shift also in terms of management and resource availability. In practice SSIs will concentrate on the domestic market first, gaining expertise and growing to acquire the resources needed for possible expanding to export markets. SSIs with highly specialized products have particular potential to penetrate in export markets. In order to assist the SSIs in utilizing export prospects some promotional measures could be considered, such as:

- tariff/tax reductions, including rebates on customs duties and tariffs on imported inputs;
- export credit guarantees;
- measures to facilitate deliveries by SSIs to enterprises in export processing zones;
- assistance in product development and design as well as packaging for exports;

- marketing support (e.g. through international trade fairs), special export facilities (e.g. through export houses) and improved market information flows.

The subject of financing is a further crucial issue for the development of small-scale industries. Access to institutional finance by SSIs is constrained both by the attitude of lending institutions in developing countries and by the lack of knowledge and management capabilities of the SSI entrepreneur. Financial institutions usually concentrate their lending to low-risk large-scale industries and lack the attitude, or the information base required for dealing with small borrowers. These institutions need therefore to be more directed to the special conditions of SSIs if the promotion of this sector is to succeed.

Moreover, examples of special lending schemes of several Asian countries show that whenever special financial measures for SSI were introduced by governments, these measures had to be supplemented by the provision of advice, business counselling, training and extension service to achieve the desired impact. A further substantiation should be made as regards financial aid schemes which provide cheap credit to SSIs. Empirical studies indicate that commercial banks which participate in such financial assistance schemes tend to be reluctant to continue providing loans if the schemes are perceived to be commercially unattractive. Moreover, there is a danger that cheap credit could reduce the economic efficiency of recipient enterprises and that they would primarily benefit those SSIs which already have the better access to institutional finance rather than the less-established enterprises for which such schemes were conceived.

It can be concluded that in the long run the development of SSIs is better served by good access to credit at normal bank lending rates rather than by cheap credits available on limited scale. The rate of interest would need to cover the higher risks and administrative costs of banks serving a large number of small enterprise loans. In addition, special arrangements, e.g. in connexion with donor support schemes, could provide the banks with access to low interest loan funds. The system could be backed up by credit guarantee schemes and based on adequate assessment criteria for SSI loans. Thereby emphasis should be on the viability of the project and not on strict

collateral requirements. Training of loan officers may be needed to create a new generation of development-conscious loan officers with ability to assist small industries. It may be useful to concentrate the co-ordination of financial services for SSIs at the country level to perhaps one or two specialized institutions with a network of branch offices. Such financial schemes should be a part of an integrated package of assistance to SSIs.

The upgrading of technology in small-scale industries is crucial for the survival and growth given the rapid international innovation process. In upgrading technology levels, a number of factors will have to be considered, such as socio-cultural patterns, labour-related aspects and the general industrial environment. In several cases rudimentary improvements in technologies and production processes have proved to be sufficient to make SSIs, especially in rural areas, competitive. Technological innovations may have to be adapted to suit national or local environments - "relevant technology" is the keyword rather than modern or high technology. The financial problem is often a major constraint. Even in the case of basic technology improvements, credit schemes offered by official financing institutions are currently not usually available for such purpose.

As concerns the impact of new technologies on employment it can be said that although technological innovation may reduce employment in certain activities there would be gains in others. Increased productivity can lead to overall growth and increased demand with positive employment effects. The skill structures will be effected most in so far as new technologies usually require higher skills for certain operational and maintenance activities. Human resource development through special training schemes, on-the-job training and improved professional and general education is therefore called for.

An example of effective support to technology development can be found in the Republic of Korea, where commercialization of research results and financial participation in new small and medium scale ventures based on locally developed or adapted "relevant technologies" are actively stimulated. The question is how this scheme could be adopted by other countries of the region, and whether such relatively sophisticated technologies can be applied

in other countries. Although R and D co-operation already exists in the region, an increase of such co-operation would possibly contribute to solving this question.

Technology support would in particular:

- assist traditional SSIs to move towards the mainstream of development;
- increase SSIs' access to new technologies, such as computer-aided machinery;
- improve product standardization and quality control.

The development and strengthening of small-scale industries in non-metropolitan areas is a problem that requires particular measures. In many developing countries, industrial capacity tends to be highly concentrated in and around major urban centres. This has led to congestion, social disruption and a highly uneven distribution of incomes in the national territory. A spatially more balanced pattern of industrial development would reduce the social costs of economic growth and promote the more intensive utilization of natural resources and human potential in the countryside, thus contributing to balanced overall development.

Strengthening SSI in non-metropolitan or rural areas should form part of such regional development policies. Indeed, SSIs with their relatively modest demands on sophisticated infrastructure and highly qualified labour are often better placed to initiate rural development. However, rather than moving existing industries away from urban centres industry in rural areas should be built up through local entrepreneurship development.

Policy measures stimulating SSI in rural areas are being implemented in a number of countries. Experience has taught that total dispersal may lead to the loss of scale economies, of agglomeration advantages, etc., and makes high demands on rural infrastructure. Grouping SSI around rural population centres seems to be a sounder policy.

In summary the following conclusions and recommendations can be listed.

First, major problems identified as obstructing further SSI development are:

- shortcomings in social, institutional and physical infrastructure;
- insufficient and/or malfunctioning linkages with large industries;
- insufficient access to credit;
- government policies focusing mainly on larger industries;
- lack of co-ordination among SSI support agencies.

Second, to strengthen the role of SSI, assistance should be integrated in overall development policies, and activities of support agencies should be co-ordinated.

Third, specific SSI issues and specific support measures would need to be further explored, such as:

- the relationship between foreign investment and SSI development;
- the experiences of industrial associations working at the sub-national level;
- attempts made to integrate SSI and agriculture at the local level;
- the organization, dissemination and application of R and D for SSIs;
- methods of providing facilities (e.g. mini-estates) for SSIs in rural areas;
- marketing organizations for small enterprises;
- subcontracting potential for highly specialized small industries and industrial services firms;
- alternatives to the present schemes of providing credit to SSIs; and
- introduction of new and emerging technologies into the SSI sector.

Fourth, specific support measures to SSIs could include:

- identifying unique features of traditional and modern SSIs which may be exploited either at the national, regional or international level;
- identifying and stimulating entrepreneurial talent at the local level;
- improved access of SSIs to commercial credit;

- improving quality control and overall product quality;
- creating better operational and service facilities for SSI at the local level;
- support to co-operation among SSI, both nationally and internationally;
- involvement of SSI associations in the formulation and implementation of support programmes;
- inducements and incentives for SSIs to participate in public tenders;
- providing better links between large and small industries;
- encouraging-SSI related R and D and improved access of SSIs to research and development, and technological institutes;
- creating information exchange networks; and
- human resource development.

INTRODUCTION

Developments in recent years made policy makers in developing countries increasingly aware of the limits of assumed 'trickle down' effects of large-scale, capital-intensive and usually highly import-dependent industrial plants. These plants alone failed to significantly increase the rate of labour absorption in the industrial sector and to generate self-sustaining growth. It has at the same time been more fully recognized that small-scale industries play a role in expanding and diversifying industrial production and contribute to such basic objectives as employment generation, poverty eradication, improved income distribution and fulfilling basic needs. The development potential of SSIs can be tapped at relatively low costs; investment outlays per employee are usually significantly lower than in larger industries; their reliance on local raw materials and other local resources integrate them in the national economy. Small and medium-scale companies in fact dominate the industrial sector in most countries in terms of the number of establishments and employment. At the same time these companies face various development constraints which would need to be encountered.

Major characteristics and problems of SSI in developing countries can be singled out as follows:

- low level of technology, unstandardized products and scant links with the existing large-scale enterprises;
- limited prospects for autonomous growth and modernization;
- little access to or ability to apply new technologies such as numerically controlled machines, computer-aided design or microprocessor-based information and control devices.

Realizing the prospects for and constraints to SSI development, the fundamental question that arises is: By which means can the dynamic role of SSIs be most effectively and economically enhanced without distorting resource allocations and without reducing the motivation of small-scale entrepreneurs.

Recognizing that this question or issues calls for systematic analysis and inter-country comparisons and exchange of experience an Ad Hoc Expert Group Meeting on Policies and Strategies for Small-scale Industry Development

in Asia and the Pacific Region was organized jointly by the Regional and Country Studies Branch, UNIDO, and the ESCAP/UNIDO Division of Industry, Human Settlements and Technology, in co-operation with the Korea Advanced Institute of Science and Technology (KAIST), in Seoul, Republic of Korea, on 17-20 September 1985. Officials from various countries, representatives of development agencies and international experts met to discuss key issues and to formulate recommendations with respect to small-scale industry and its process of development. A number of background papers were submitted. The present report reflects the findings of these studies and of the discussions at the meeting.

The first chapter outlines the development potential of small-scale industry and the framework for support to SSI. Chapter II gives an overview of policies, strategies and programmes for SSI development. In Chapter III, some of the key issues with regard to SSI support are treated in greater detail. Chapter IV, finally, presents overall conclusions as well as proposals and recommendations for further action.

I. THE CONTRIBUTION OF SMALL-SCALE INDUSTRIES TO INDUSTRIALIZATION^{1/}

Small-scale industrial enterprises comprise diversely organized activities: household production, handicraft, small maintenance and repair, etc. Major differences exist between traditional, handicraft-oriented SSI and SSI using modern technologies; the latter are often capital-intensive. Traditional SSIs are frequently located in the countryside, modern SSIs tend to concentrate in or near major urbanized areas where subcontracting arrangements with large industries are more easily made, know-how is more easily available and a good physical and service infrastructure exist. One of the major challenges to development policy is the upgrading of traditional SSIs and/or the development of modern SSIs outside urban centres.

An essential, common characteristic of small (and many medium-scale) enterprises is the way they are managed and operated: usually, the owner/manager assumes the full responsibility for all long-term (strategic) and short-term (tactical) decisions. Still, SSI is a relative concept, being dependent above all on a country's industrialization level so that criteria will lead to different threshold values in different countries.^{2/} This is certainly true for the developing countries in Asia and the Pacific region which find themselves at various levels of the industrialization process.

The sectoral distribution of SSI seems to follow a fairly stable pattern across various countries. In the case of ASEAN countries, empirical evidence has shown that irrespective of the relative size of the small and medium industry sector, the small and medium industries tend to be concentrated in

^{1/} Based on a note with the same title prepared by the Regional and Country Studies Branch, UNIDO, for the expert group meeting at Seoul, and on the meeting discussions.

^{2/} Where the number of employees is a criterion, the upper limit in most developing countries is between 10 - 50 for small-scale and between 50 - 100 for medium-scale industries (Cf. Kuivalainen, A., "Possibilities of promoting the industrialization of developing countries by means of resource transfers from small and medium sized industries", Helsinki 1982). In some countries small industry is defined by a maximum of fixed capital rather than by a certain number of workers. It may be recommended for policy purposes that a constantly reviewed combination of both be used, keeping in mind the circumstances and stages of development in the particular country.

the same industrial activities. These include industrial activities using relatively simple, labour-intensive production techniques such as: leather, footwear, furniture and metal production; industries processing spatially dispersed raw materials such as: food processing and wood processing; and industries particularly dependent on proximity to the market such as: printing and publishing. Where sub-contracting plays a role, there is a wider branch range of activities. Small-scale suppliers of components, for instance, are particularly found in the engineering (transportation and communication, metal products, machinery) industries.

1. Some key features of small-scale industrial enterprises

SSIs (including "medium-scale industries") collectively often constitute the majority of installed manufacturing capacity and employ the majority of the industrial work force in most developing countries. SSIs share some key features which to a large extent determine their role in the economic process:

First, in smaller manufacturing establishments, the manager is frequently the sole owner of the enterprise and the major source of production 'know-how'. His responsibilities often cover the organization of production, book-keeping, supervision of labour, sales, servicing of equipment, and dealings with suppliers, buyers and authorities. In functional terms the chief distinguishing characteristic of a 'small' enterprise is thus that all important entrepreneurial and operational decisions are taken by one person.

Second, for many small enterprises, the mobilization of financial resources, the access to markets and the acquisition and upgrading of know-how, each constitute major problems.

Most small enterprises have a chronic shortage of capital. This may be partly due to the entrepreneur's inability to attract or have access to sufficient capital and/or credit for his company and partly to a frequent imbalance between fixed and working capital. It can also result from poor inventory control, high wastage, low levels of efficiency in production, incorrect pricing methods, etc. Shortage of finance may prevent an enterprise from operating efficiently and imposes additional costs when short-term credit has to be raised. The lower business credibility, limited security and high risk of failure of SSIs makes it difficult, however, to raise capital from the usual sources and often forces them to secure loans at higher interest rates from other lenders.

Marketing constitutes a difficult task for many small enterprises given their limited management resources and skills. Most SSIs in developing countries confine themselves to supply their local markets. The question arises how SSIs could be assisted to expand their markets through greater awareness of market opportunities and greater information on SSIs' products to potential clients.

The entrepreneurs who establish, own and manage small enterprises display the ability to mobilize resources, and to take risks. By and large, however, they lack formal training in management and tend to have a narrow range of technical or production skills. Long-term survival or growth of the enterprise depends on the entrepreneur's ability to adapt production to changing market conditions. Most small enterprises tend to be imitators rather than innovators in terms of technology and tend to produce simpler products and to utilize less complex or 'packaged' production processes.

If a SSI is successful, it is likely to grow into a larger, more sophisticated industrial company. Programmes of assistance should support this process and take into account the required changes in the SSIs. The more complex the production process, the greater the need for better trained and adaptable employers and supervisors, for supporting services and maintenance skills within the enterprise. To develop small enterprises into larger, more organized and more efficient production units, with consequent qualitative and quantitative increases in output, however, also involves changing attitudes of key decision makers.

2. Impact of SSIs on development and industrialization

SSIs make a relatively strong contribution to employment generation in developing countries. Not only is the vast majority of the industrial labour force to be found in small and medium-scale enterprises, but empirical evidence also shows that these tend to use particularly labour-intensive technologies. There is no evidence of any general inferiority of SSIs as compared to the large-scale enterprises in terms of efficiency: in many countries SSIs have proved to be highly efficient and competitive both on the local market and on export markets. Indeed, a recent study on SSIs in ASEAN countries showed that in many industrial sectors (above all in wood processing

and metal products) SSIs reach a higher capital productivity than large-scale enterprises^{1/}.

A second key advantage of the SSI sector is its positive influence on the distribution of income both in functional terms (wages/profits) and in regional terms. The pursued growth path of many developing countries in the past implied that urban centres grew at the expense of rural areas, resulting in glaring regional income disparities. Since a large share of SSI production is located in rural areas,^{2/} an active promotion of rural SSIs would serve "as a means of decentralizing industry thereby not only accelerating rural development but especially stemming urban immigration and the consequent problems of congestion in the cities."^{3/}

A third advantage of SSIs is their potential to establish links between agricultural and industrial production. SSIs figure prominently both in the processing of agricultural goods and in the production of machines and equipment for use in agriculture. It has also been shown that the demand elasticity for goods produced by SSIs^{4/} is high in rural areas and among workers employed in SSIs.

SSIs also contribute to domestic capital formation. This is of particular significance in the face of foreign debt crises in many countries.

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- 1/ Cf. Hiemenz u., "Growth and efficiency of small and medium industries in ASEAN countries", in Asian Development Review, Vol.1 (1983), no.1, p.111. The same study also concludes that in about half the industry subsectors, small and/or medium scale firms were more efficient than large-scale ones, even if capital and labour input coefficients are taken into consideration.
- 2/ The share of traditional rural industries in total manufacturing employment is, for instance, 70 per cent in Bangladesh and 63 per cent in Malaysia. Cf. ILO, "Rural small-scale industries and employment in Africa and Asia", Geneva 1984, p.3.
- 3/ UNIDO, "Small industries development programme" (UNIDO/IO.545), 14 June 1983, p.5.
- 4/ In the case of Sierra Leone it was estimated that a 10 per cent increase in agricultural production leads to a 16 per cent increase in demand for the products of small-scale firms. Cf. Bottomley, A., "Government actions for promoting small-scale industries with respect to final outputs, intermediate activities and primary inputs", in ESCAP, Small Industry Bulletin for Asia and the Pacific, No.18, 1982, p.17.

Small-scale entrepreneurs are a major source of private savings^{1/} for productive purposes. Furthermore, SSIs are known to require relatively little infrastructural investment (partly because of their proximity to consumers) and to utilize locally available raw materials instead of relying on imports.

In addition SSIs have further advantages for the long-term industrialization process:

- SSIs provide a training ground for the creation of indigenous entrepreneurs in terms of technical, managerial and marketing know-how. Hence they are an essential element in the cultivation of an overall business environment conducive to innovative and competitive behaviour;^{2/}
- SSIs enhance the flexibility and diversification of industrial production because their output may be more easily adapted to changing market conditions and because they are often able to operate profitably even in very narrow markets with low purchasing power. The production flexibility of SSIs makes them potentially highly competitive;
- SSIs can play an important role as manufacturers of parts and components for large-scale enterprises because of their specialized skills and cost advantages.

3. The application of new technologies

The early 1980s have witnessed particularly drastic technological innovations in industry. The precise consequences, such as the impact on the international trends in global restructuring of production and trade, are still largely unknown. The introduction of cost-saving microelectronic devices and data processing systems in manufacturing, be it directly in production or for management purposes, is in any case expected to exercise substantial influence on the size distribution of manufacturing enterprises.

Recent innovations such as numerically controlled machines, computer-aided design or microprocessor-based information and control devices are said

^{1/} "Data on the sources of funds for initial capital investments in very small firms in Africa consistently show that eighty percent or more comes from personal savings supplemented by loans or gifts from relatives." (Page, J.M.Jr./Steel, W.F., "Economic issues of small enterprise development in Africa", World Bank, Industry Department, March 1984, p.7).

^{2/} Cf. Sit, V.P.S., "Strategies for the promotion of small-scale enterprises in the developing ESCAP region", in Economic Bulletin for Asia and the Pacific, Vol. 33, no.1, June 1982, p.73f.

to "have made modern technology more potentially applicable to traditional producers"^{1/} and to "facilitate small-scale decentralized operations".^{2/} Jumping from traditional to the most modern and sophisticated technologies is thus no longer impossible. Indeed, microelectronic technologies can be put together from standard, off-the-shelf components and can thus be adapted to the needs of individual industrial client.

Potential for the adoption of microelectronic technologies exists even in very small enterprises. The realization of this potential depends, however, on economic and socio-cultural factors. The scattered empirical evidence available points to a positive correlation between growing firm size and the readiness and ability to introduce these new technologies.^{3/} One reason is that in many cases the application of the new technologies requires extremely high amounts of investment capital. Firm-economies of scale therefore tend to become a decisive factor for reducing unit costs of production. It should also be noted that by and large wages are lower in small firms than in large ones, which reduces the economic incentive to adopt labour cost-saving microelectronic technologies.

The impact of microelectronics on SSIs as subcontractors is fairly ambiguous. Microelectronic production techniques create the need for absolute reliability of inputs and components both in terms of delivery schedules and of quality standards. Sub-contractors in developing countries may fail to meet these requirements, stimulating further backward vertical integration of large firms, be they indigenous or multinational enterprises.

The overall impression is that, apart from those areas where highly skilled, specialized and innovative SSIs are involved, the emergence of new microelectronic technologies will in the developing countries on the whole

^{1/} Report of the Panel, in: von Weizsaecker, E.U. et al. (eds.), "New frontiers in technology application. Integration of emerging and traditional technologies", Dublin 1983, p.7.

^{2/} UNIDO, "Prospects of microelectronics application in process and product development in Africa" (UNIDO/IS. 331), 22 July 1982, p.1

^{3/} Cf. e.g. "Microelectronics in small/medium enterprises in the United Kingdom", in ILO: Blending of New and Traditional Technologies. A Portfolio of Experiments and Projects, Geneva, 1984, p.99 ff.

strengthen the role of large-scale, heavily capitalized enterprises. Where this is either due to the information advantage of larger enterprises or to skill constraints of managers/workers in SSIs, there is a convincing case to be made for policy support measures aimed at eliminating these bottlenecks in the adoption of new technologies within SSIs.^{1/}

^{1/} See also 'New industrial technologies and human resource development in Asia: Some selected issues', paper prepared by the Regional and Country Studies Branch, UNIDO, 19 February 1986 (UNIDO/IS.611).

II. STRATEGIES, POLICIES AND PROGRAMMES FOR SMALL-SCALE INDUSTRIAL DEVELOPMENT

1. Some principles for support of the small-scale industry sector^{1/}

Whereas the subsectoral distribution of SSIs is influenced, inter alia, by the technological level of various production processes, their overall importance and role in a country's economy is largely dependent on the overall industrial development strategy and specific Government policy measures. Industrial policy is often - implicitly - primarily directed towards large-scale, capital-intensive enterprises in urban areas. The rationing of import licenses or of bank loans normally has the same effect: larger enterprises have both the knowledge and the resources to cope with the administrative procedures connected with such schemes. In this way many policy measures - although not directly aimed at favouring larger scale industrial activity - have actually worked to the disadvantage of SSIs. In the light of the development prospects of SSIs, however, there would be a strong argument for neutral general policies combined with specific support measures to promote SSIs.

Such policies are needed to create a generally favourable business climate. What is required is:

- a macro-economic policy package inducing development of primary resources, education and training, stimulation of savings, investment, foreign trade and public/private sector policies, thus creating a favourable environment (also) for small private industrial enterprises; and
- clear Government priorities creating an atmosphere of continuity and certainty.

In order to more specifically support SSIs, additional measures are called for such as:

- public industrial support programmes, disposing of a network of a number of specialized functional, resource or service centres aimed at assisting the SSIs sector. The public programmes should be staffed with skilled and motivated personnel;

^{1/} The following sections are based on the paper "Policy recommendations for the strengthening and promotion of small-scale industries", prepared by the Regional and Country Studies Branch, UNIDO, for the expert group meeting in Seoul, and on the meeting discussions.

- promotion of co-operatives and other self-help organizations for SSIs.

Evidence on industrial promotion schemes in many developing countries suggests that most measures focus on selective assistance to enterprises, often in the form of attempts to rescue enterprises experiencing difficulties. On the other hand, general improvement of the economic and business environment would encourage enterprises to help themselves. This is especially important for the development of the SSI sector: it cannot be fostered by ponderous bureaucratic procedures, the more so because SSIs are less effective than large scale enterprises at protecting or furthering their interests within bureaucratic, institutionalized systems.

2. Areas for special support schemes

Development programmes for the SSI sector would, although comprehensive, need to focus on the following crucial areas:

- Credit; lack of credit is often the greatest single impediment to the growth and diversification of the SSIs sector. Long and short term credits to small scale enterprises should, where necessary, involve managerial assistance so as to enable enterprises to upgrade their financial planning and control procedures as well as to introduce systematic accounting techniques.
- The enlargement of markets. Governments can play an important role in the development of local as well as international sub-contracting information services, and in opening up new markets, for instance through public sector procurement.
- The development of production know-how. Besides general education and training systems, technical consultancy services may be needed to help SSIs service and fully utilize their installed capacity and to enhance their production technologies. Public sector organizations and research establishments can help accelerate the diffusion of new concepts and techniques and should reinforce domestic technological capabilities (see e.g. Annex VI on the Technology Services Delivery System in the Philippines).
- Legislation to strengthen the position of SSIs in dealing with financially stronger business partners.

Through its technical assistance UNIDO supports such programmes covering various aspects of assistance to SSIs. UNIDO assistance activities in this field are described in Annex VIII; elements of relevant UNIDO activities are also reviewed in Chapter III.

3. The identification and development of industrial projects

In spite of an increasing involvement of industrial development agencies in industrial investment project identification and project planning the number of emerging 'bankable' projects remains in most cases very small. There seem to be two main reasons for this: (a) project proposals are often prepared in a 'vacuum', remote from (potential) owners or managers and from the harsh realities of commerce or industry; and (b) proposals tend to concentrate on production issues, while the market potential is often not examined in a thorough way.

Funding agencies and development institutions also advise and train prospective clients in project preparation and presentation. Experience of industrial promotion programmes in developing countries suggests, however, that whereas even in countries at an initial stage of industrial development significant numbers of people at the local level are willing and can be encouraged to assume the risk-taking role of an entrepreneur, few are aware of the steps involved in developing an investment project proposal and are able to cope unaided with the procedural formalities.

More efforts in this field are therefore called for. Special institutional arrangements are needed to assist small enterprises in all phases of investment planning. If, in key areas of assistance to small enterprises special institutional provisions may be needed, close working relationships between development officials and entrepreneurs are necessary. Experience has shown that active participation of industrialists in such institutions is essential. It may also be necessary - in spite of higher costs - to decentralize decision-making processes within development agencies to match the operational time scales and needs of small enterprises.

4. Infrastructure services and industrial estates programmes

To enable SSIs are to expand beyond the local level, it will be necessary to install road and telecommunication networks and suitable industrial sites. Location of a number of SSIs in close proximity to each other facilitates commercial, repair and maintenance services and inter-industry linkages and subcontracting. Industrial development agencies have sought to provide such

services and buildings within industrial estates or parks. An important aspect of such development initiatives is that such concentrations of industry demonstrate progress and may thus encourage similar activities. Industrial premises and estates, however, are expensive capital investments requiring exhaustive feasibility studies and preparations. They are perhaps best regarded as reinforcements for the expansion of an established industrial base rather than as initiators or catalysts of industrial development, and seem more suited to meeting the more specialized and exacting needs of medium scale enterprises than those of very small enterprises. Some experiments in providing accommodation for 'fledging enterprises' in mini-estates have been successful, but for the majority of small enterprises, it may be better to rely on their adaptability and flexibility in the use of converted or existing accommodation in the early stages.

Governments can also stimulate local SSIs by extending contracts for infrastructural improvements which are technically and organizationally within SSI-scope (construction, building of feeder roads, etc.).

5. Support for the development of established SSIs

Besides assistance for the promotion of new enterprises in developing countries, priority should be given to strengthening and upgrading the activities of established small enterprises. Given the shortage of capital and entrepreneurial/managerial skills within many economies, great attention should be paid to ensuring that those already in existence maximize their contribution to economic development.

Major difficulties inhibit progress in this area: There may e.g. be a conflict of objectives between Government and established industrial enterprises. While Governments and development agencies tend to orient their programmes and activities towards medium or longer term objectives, creation of employment or equity, etc. within the overall pattern of development, individual industrial enterprises obviously are profit-oriented and tend to have shorter time horizons. The legal, administrative and fiscal arrangements established by Governments for broader policy objectives may thus conflict with the immediate priorities of small enterprises.

Once small industrial enterprises have been in existence for a length of time, they tend to become highly adept at dealing with routine organizational and production problems. Further development of their industrial activities, however, requires a significant increase of skills and the availability of specialized technical information and advice. Outside management expertise will be needed to assist in reorganizations in periods of transition, growth or diversification, and in broadening the range of market opportunities, including in export markets.

If an enterprise is to grow, increased output quality and efficient technology application are essential. New technologies are often not directly applicable for SSIs in developing countries; the improvement of existing technologies will in most cases be more relevant for them. In this process of technological upgrading, development agencies can play a role by providing technological expertise. Moreover, organizing "self-help" networks among entrepreneurs for the exchange of new ideas could be a relatively simple and efficient way of stimulating technological expertise and creativity.

6. Training of support staff

The range of skills required for SSI development institutions covers mastering of administrative, organizational and managerial tasks as well as various technical production skills. Given the large population of small-scale industrial enterprises, the variety of output and the scattered distribution of producing units, industrial development agencies are faced with severe difficulties in creating the skilled manpower necessary to both support existing activities and to promote the creation of new industrial capacity.

Four main fields of training and retraining programmes can be singled out as particularly important: financial control and accounting, management and 'shop floor' supervisory tasks, marketing (including sales and tendering), and technological aspects of production. Short formal training courses reinforced by practical experience would be required to create the skill base for the organizational and management tasks. The technical aspects of production including production control, product development and quality control require more basic technical training, which is highly specialized and requires a

longer period. It is in this area that specialized technical support from institutions of higher education, technical research and development, test laboratories or even from large-scale industry are most needed. In addition development agencies need to ensure that their personnel has the necessary skills in industrial promotion, project identification and development, project presentation, and in consulting services.

7. The regulation and monitoring of SSI development

Given the importance of the SSIs sector, Governments have been concerned to bring the activities of this subsector within the purview of official regulatory organizations. To some extent regulating and monitoring of industrial activity may counteract with the attempt to promote the expansion and creation of new industrial capacity. Hence, it is important to insure that an enterprise's relationship with the various departments and agencies of Government is not endangered through the application of strict bureaucratic controls. Registering or licensing, e.g., which is generally a prerequisite for assistance, should be simplified as much as possible. Government legislation should altogether have a promotional rather than a regulatory character; it should provide a favourable environment rather than a detailed development model. This view is also increasingly shared these days by donor agencies. Balanced development is on the other hand unlikely to occur without policies and co-ordinating measures formulated by Governments - even the most highly developed countries cannot do without them.

Almost all Governments have attempted to bring small industrial enterprises within their regular surveys of industrial output, as an improved database is essential for the formulation of development policies. However, comprehensive coverage of small enterprises is often not feasible. One solution would be to monitor key parameters of performance in small enterprises on an annual basis and carry out more comprehensive surveys at three year intervals; another is to rely on the boards of SSI associations to gather data at the individual plant level.

8. SSI development policies in ESCAP member countries - an overview

Individual Governments of countries in the ESCAP region have formulated and implemented various sets of policies to stimulate the development of

SSIs. A brief overview of policies and measures by country^{1/} is presented in this section.

Bangladesh

The industrial sector is heavily dominated by traditional SSIs. The Second Five-Year Plan (1980-1985) emphasized development of rural industries mainly catering for the local market for simple producer and consumer goods. To support local industry, basic infrastructure was improved and the linkages between public and private enterprise were strengthened. The 1982 New Industrial Policy protects local industries by tariff measures and promotes geographical dispersal and the exploitation of local resources. Linkages with larger industries, quality improvement and technological upgrading receive particular attention. A special Small Scale Industries Development Commission has been established within the Ministry of Industry.

Burma

Policies for the development of SSIs are part of the Long-term and Short-term Economic Policies formulated in 1972 for a 20-year period. Technical training, assistance and research and quality control are provided by government institutions. A large part of SSIs is organized in co-operatives which to some extent dispose of their own training facilities. Assistance to co-operatives takes the form of loans, inputs and machinery. In co-operation with UNDP/ILO, SSIs plant and technology are upgraded under the "Small Scale Industry Development in the Co-operative Sector" programme. The Federal Republic of Germany also assists in improving the performance of industrial cooperatives and in the establishment of a technical consultancy unit within the cooperatives.

^{1/} More details will be found in the country studies which were presented at the Seoul expert group meeting and are appended (in condensed form) to this report. Reference is also made to a "Report on the development of small- and medium- scale industries in the ESCAP region", prepared by the ESCAP/UNIDO Division of Industry, Human Settlement and Technology and presented at the meeting.

China

In an effort to distribute economic growth more evenly, industry in rural areas has received much support. So far, policies have concentrated on labour-intensive SSIs with low capital requirements having linkages with agriculture and also encouraging the rural population to use local non-agricultural resources. Support takes the form of low-interest loans and tax incentives; otherwise, funds are largely provided by the local collectives themselves. Policies have now begun to stress environmental and technological improvements, with part of the funds provided by central and local authorities. Planning will pay more attention to the integration of SSIs in the overall economy. Recently, subcontracting to large industries in urban areas has begun to receive attention.

India

The overall development strategy pays special attention to SSIs through the "Village and Small Industries programme" while pursuing integration with other sectors of the economy and the correction of regional imbalance. SSI production is protected by special measures (e.g. product reservation), and co-operation within the sector is strongly encouraged. Comprehensive support, from infrastructural and credit facilities to feasibility studies, is available. In recent times, technological modernization has received special attention. There is a continuous interest in stimulating the handicraft sector through the introduction of simple technical improvements. Another recent policy measure is the stimulation of ancillarization, an intensive form of co-operation between large (government-owned) and small industries.^{1/}

Indonesia

SSI programmes are an integral part of overall economic and industrial policy. Besides assistance to traditional, mainly rural SSIs, much attention is given to promoting modern SSIs which have close relations with the machinery

^{1/} See the study report "Mechanisms for small-scale industry development: Ancillarization - development of feeder industries" (UNIDO/IS.551) by the Regional and Country Studies Branch, presented at the expert group meeting at Seoul.

and electronics industry. Certain productive activities come under reservation schemes for SSIs. For the diffusion of SSIs throughout the national economy, infrastructural support is made available under the Small Industry Estate, Small Industry Village and Common Service Facilities programmes. Small rural industries are clustered for greater efficiency. Support measures include training and information services, feasibility studies, credit, provision of capital goods and inputs and export promotion.

Malaysia

The Fourth (1981-1985) Malaysian Plan seeks to integrate small-scale enterprise in the overall national development strategy. Support programmes range from feasibility studies and export incentives to product reservation schemes. Banks have to set aside part of their loanable funds for small enterprise, some of it to be made available on special, favourable conditions under the Special Loan Scheme. Inter-firm information exchange is encouraged and a subcontracting exchange will be set up to improve links with large industry. A special package programme for bumiputra entrepreneurs has been made available with World Bank assistance.

Nepal

The Industrial Service Centre of the Ministry of Industry provides a package of non-banking services (information on investment opportunities, procedures, policies etc.) and carries out feasibility studies. Banks have recently been obliged to invest in small enterprise. Tax incentives favour SSIs over large industry. Training, promotional services and raw material supplies are provided by the Cottage and Village Industries Board, which also manages some SSI projects. The Cottage Industries and Handicrafts Emporium was specially set up to facilitate the supply of inputs and to market finished products. With IDA assistance, special support has been made available for (largely export-oriented) handicraft industries. This scheme will be extended during the next economic planning period. As an experiment, collateral requirements have been waived in districts where a special financial assistance programme is carried out with World Bank assistance.

Pakistan

Under the present Five-Year Plan, SSI has been designated as one of the leaders of the export industry. Support consists of improved designs, credit, marketing and export facilities. The activities of the Small Business Finance Corporation will be expanded in the near future. Special attention to SSIs is given in the provision of physical infrastructure e.g. in the form of SSI estates. Training, information and technical services are also provided. Subcontracting is stimulated. The institutional infrastructure includes special Provincial Small Industries Corporations, set up by the Government to provide a wide range of services.

Philippines

Within the framework of the country's Development Plan, a variety of special agencies deal with SSI. Activities are co-ordinated by the Commission on Small and Medium Industries (SMI). Financial assistance emphasizes fixed assets rather than working capital. In co-operation with educational establishments a special programme has been designed to upgrade business training and to stimulate entrepreneurship, both among students and in the towns and villages where the schools/universities are located through the Institutes for Small Business (ISBs). Channels for various types of extension service and methods of identifying small and medium enterprise potential are being improved with USAID support.

Republic of Korea^{1/}

The 10-year Long-term Promotion Plan for Small and Medium Industry was adopted in 1982 to raise the value added, employment and investment shares of small and medium industry to some 50 per cent of national totals. A central role in formulating, initiating and co-ordinating support plans is played by the Small and Medium Industry Promotion Corporation (SMIPC).

^{1/} Based on a paper presented at the expert group meeting at Seoul: "Korean small business - Current issues, policies and promotional activities" by Yun-Sang Choi, SMIPC. The full text of the paper will be included in a forthcoming report on SSI support in the Republic of Korea.

Promotion policies for small business include financial, technological and marketing assistance, encouraging (by financial support, government contracts, etc.) the formation of co-operatives and stimulating technological and managerial modernization through extension and information services and training programmes. Certain areas of production are reserved for SSIs on the basis of efficiency and comparative advantage criteria. Special assistance is to be given to SSIs which locate in rural areas and for new ventures employing advanced technologies. Government has established a Small and Medium Industries Promotion Fund providing long-term low-interest loans. Commercial banks must reserve part of their loanable funds for small business and are also encouraged to invest in small enterprises.

Singapore

Assistance is mainly given to SSIs which have linkages with large modern industries. Grants and tax incentives are available for R and D initiatives and a science park is under construction. The focus of the assistance schemes, a large part of which is provided through the Economic Development Board's Skill Development Fund, is on sophisticated technologies and factory automation and includes low-interest long-term loans, consultancy, a state-supported robot leasing/robot consultancy company and manpower training. Manpower development is also the object of a number of training units which have been set up in cooperation with aid donors and overseas investors.

South Pacific Island countries^{1/}

Most South Pacific Island countries consist of a number of widely scattered islands and are confronted with the problem of very limited markets and resources. Manufacturing production targets outlined in development plans are accordingly modest, but precisely under these circumstances SSI can play a significant role. Fiji has the most comprehensive range of industrial support measures, including the provision of industrial infrastructure and priority for industries processing local raw materials and/or producing inputs for

^{1/} Based on a draft study of the South Pacific Island Countries which will be issued by the Regional and Country Studies Branch, UNIDO.

other sectors of the economy. Tonga and Western Samoa provide industrial estates for small- and medium-scale industries. Product reservation schemes are common in the South Pacific Island countries.

Sri Lanka

Economic policy stresses the diffusion of development both spatially and among population groups, for which SSI is a major instrument. SSI production is protected by import tariffs, and stimulated through tax and investment incentives, training and management services, design and craft centres, marketing assistance etc. Many of the services are provided through the Rural Industries Development Corporation, which also participates in SSIs by buying equity shares. A Subcontracting Exchange (SCX) was established in 1981 to improve contacts between SSI and large industry. Rural Development Banks have been set up by the Government to help meet credit requirements of small entrepreneurs.

Thailand

Current and coming development plans recognize the essential role of SSIs in developing the country's industrial base and promoting the diffusion of industrial development throughout the country, away from the Bangkok area. Attempts are made to harmonize industrial dispersal with regional urban development plans. Policy is implemented and co-ordinated through the Department of Industrial Promotion (DIP) and support to SSIs includes feasibility studies, low-interest loans, vocational, entrepreneurial, management and technical training, product upgrading and information services. To assist the dispersal programme, Regional Industrial Promotion Centres and provincial offices have been established.

9. Towards a regional programme for SSI development in Asia and the Pacific region

Due to its very nature, the SSI sector to a large extent operates on its own within the limited framework of local markets. However, it has been shown above that there is strong reason to enhance the role and to utilize the large development potential of the SSIs through various measures. In many countries

in Asia and the Pacific an extensive institutional framework and significant experience with industrial development in the small-scale sector already exist. Examples of activities of two regional institutions, the Asian Productivity Organization (APO) and Technonet Asia, are given in Annex VII.

The priority for the immediate future should be to upgrade the capabilities of existing agencies both at the national and regional levels, so as to improve their effectiveness. Weakness in technical or commercial support services may be dealt with by appropriate assistance from the international agencies, but most of the countries could now benefit from their own experience and from that of other developing countries. Both the successes and failures of other countries can help policy-makers to formulate proper strategies - the experience of other countries should, however, serve as an instructive example rather than a blueprint: specific situations call for specific policies. This should also be borne in mind by international organizations involved in SSI assistance. When intra-regional experience and resources are utilized for a supporting programme among the countries in the region, priority areas should be singled out to make the most of the available resources. Through regular consultations - possibly backed up by international assistance - the national efforts could be significantly enhanced.

There seem to be four major areas for such regional consultations. First, the improvement of information flows on products, markets, technology and other key economic factors to national and regional bodies. Second, the recording and disseminating of progress in development strategies, techniques and methodologies. Third, joint elaboration of innovative approaches to encourage the growth and efficiency of SSIs. This may include the utilization of new information technologies to increase the presence of SSIs in the market. Fourth, the training aspect whereby skilled and experienced 'practitioners of development' learn from each other and are being exposed to new concepts from external sources.

III. SSI SUPPORT - KEY AREAS FOR ATTENTION

1. Entrepreneurship development^{1/}

A key element in the present-day discussion about development is the renewed awareness of the central role of entrepreneurs, "individuals who are risk-takers, daring, innovative, assertive, and motivated enough to strike out in industrial ventures...." Governments and other bodies may provide support of the various kinds outlined below, but the actual economic opportunities have to be realized by well-run enterprises. Strong entrepreneurship is therefore of prime importance for the process of economic growth. In developing countries, which find themselves confronted with the urgent need of catching up in a rapidly changing international economic and technological environment, and where general education and industrial experience are far from ubiquitous, special measures are needed to stimulate (potential) entrepreneurs and increase their know-how.

Many factors play a role in the development of entrepreneurship. Basic entrepreneurial characteristics like risk-taking, achievement orientation, etc., are a result of family group, educational and general social/cultural influences. The overall economic situation, market conditions and economic policies represent the environment in which these qualities must be translated in economic activities. Stimuli do not only come from a favourable economic environment; social appreciation of the role and problems of the small industrial entrepreneur is essential for success as well.

Entrepreneurs may undertake some form of business activity only after previous, related experience, but nevertheless often require a wide range of new skills and knowledge. Because of the operational characteristics of small enterprises, owner/managers are not readily available for training etc. once an enterprise is in production. There is therefore a need for short-term training in management skills before an entrepreneur establishes his enterprise. The quality and availability of training materials and manuals through which entrepreneurs might inform and train themselves, supported by distance learning methods, will often need to be improved. Problems of

^{1/} Based on "Entrepreneurship development: basic issues and industrial support mechanisms", prepared by the Institutional Infrastructure Branch, UNIDO, for the expert group meeting at Seoul, and on the meeting discussions.

language, dialect, technical terminology, literacy and numeracy need particular attention when assistance is provided to small enterprises in remote and relatively undeveloped areas.

Several countries in the ESCAP region have initiated entrepreneurship development programmes, e.g. the Thai Entrepreneurship Development Programme of the Department of Industrial Promotion. Such activities are also part of the Indian Village and Small Industry and the Malaysian Majlis Amanah (MARA) programmes and occupy a central place in the Local Study Mission and Sectoral Productivity Association projects in the Philippines.^{1/} Business associations, Chambers of Commerce, and other NGO's in various countries are also involved in entrepreneurship development; these schemes, being organized by people who are familiar with the business environment, could serve as examples for further initiatives.

UNIDO's Small Enterprises and Entrepreneurship Development (SEED) programme

UNIDO's Industrial SEED programme is directed towards mobilizing indigenous entrepreneurial capacities and identifying persons with the suitable attitudes and ideas. The programme covers the period from the selection of the entrepreneur through the planning and setting-up of an industrial operation to the break-even point of the enterprise in question. The goal is quality rather than quantity: the emergence of a few sound enterprises with long-term viability is considered to be a more important achievement than the setting up of the largest possible number of firms. Procedures and techniques are chosen to suit both local circumstances and more general development objectives. A small central executive agency co-ordinates the elements of the support programme which covers all aspects related to the setting-up of an enterprise. Care is taken not just to transfer technical skills, but also to foster the values and attitudes which make an entrepreneur. Experience with the programme has shown that a business-related background is not essential for the emergence of entrepreneurial talent - candidates for the programme come from a wide variety of backgrounds.

^{1/} See the study "The local study mission and the association building projects: Approaches to SME development" prepared by Arturo L. Tolentino, Manila, and presented at the expert group meeting at Seoul. The study is issued in "Promoting small-scale industry in Southeast Asia - selected support schemes in the Philippines, Thailand and Malaysia" (forthcoming), prepared by the Regional and Country Studies Branch, UNIDO.

2. New forms of small industry co-operation

(i) Overview^{1/}

If operating in an unfavourable business climate, immediate individual profits may seem more important to the small entrepreneur concerned with survival than the long-term benefits of co-operation. Yet, a well-established organization of co-operating small industries provides a more effective potential to manage critical situations. Creating sufficient awareness of long-term collective gains among members of such an organization is a difficult, time consuming process. Experience in various developed and developing countries shows that industrial associations set up with very specific objectives in mind have the best chances of succeeding in the long run. Co-operation, in other words, should not be a vaguely defined principle but requires a clear-cut goal, for instance the sharing of specific services.

Many developing countries' small-scale industries have formed associations, partly with Government support. Such associations may be organized to cover small industries in general - possibly limited to a particular geographical area - or those of a special industry branch, for instance, handloom weavers, furniture manufacturers, etc. It is particularly these specialized associations that are often supported by Government institutions in training programmes, demonstration workshops, etc. In order to ensure close functional liaison in this co-operation, representatives of the SSI associations are often called to be members of advisory councils and boards of the relevant Government institutions.

A particularly active organization in this respect is the Korean Federation of Small Business (KFSB), with well over 16,000 members. Its activities involve the co-ordination of subcontracting, collective purchasing and selling, establishing contact with overseas buyers and investors, information services, technology transfer and policy recommendations to the Government of the Republic of Korea.

^{1/} Based on the note "New forms of small industries' co-operation", prepared by the Regional and Country Studies Branch, UNIDO, for the expert group meeting at Seoul, and on the meeting discussions.

SSI in most countries are confronted with the same set of problems, i.e. acquiring access to growing and changing markets, keeping pace with technology development and handling increasingly complex accounting and financing systems and managerial tasks. The key issues for SSI co-operation, therefore, can be listed as follows:

- promotion of contacts with large industries (subcontracting exchanges; SSIs with supplementary production entering in joint contracts with large industry, etc.);
- marketing activities (including the collection and dissemination of marketing information, participation in trade fairs, export marketing, etc.);
- R and D;
- administrative services (accounting, tax administration, auditing, etc.);
- co-operation with financial institutes in the context of special SSI credit schemes;
- operation of SSI technical service institutes (testing, quality control certification) or guidance to and co-operation with public or semi-public technical service institutes;
- up-grading management and technical skills.

The rapid technological developments currently taking place present a special challenge to SSIs. Although the trend towards smaller and cheaper microprocessors will reduce the importance of "economies of scale" in many microelectronic applications (and also increase the potential for SSI dispersal), joint action among SSIs could still be very useful to realize economies of scale in several fields, such as the development of software.

On the other hand, the potential of "economies of scope" represents an increasingly important factor. If the overhead costs of microelectronic capability can be spread over several types of products or processes, they can be more easily recovered. To overcome this barrier and to improve their economies of scope SSIs can only join forces. In the SSI context such economies may be realized when small entrepreneurs co-operate to co-ordinate their range of output, thus acquiring special skills required to handle new technologies at a lower cost per enterprise.

A new wave of technological progress is underway also in the traditional industries, such as the textile sector. The so-called 'new technologies' in spinning, weaving/knitting and finishing as well as computer control are now rapidly introduced. These innovative processing technologies create a new capital-intensive generation of textile mills, which can offer a great variety of high quality fabrics in appropriate widths. The resulting increased flexibility is likely to affect the competitiveness of the SSIs in the textile field and possibly lead to further specialization among them. Thus, the opportunities in the textile and clothing sector for the application of CAD/CAM techniques and, further, for computer-integrated manufacturing systems are wide-ranging. It will be crucial to attempt to assess the specific characteristics and impacts of the new production techniques and to examine whether these new techniques may eliminate the labour-intensive production processes in textiles and clothing. New areas for co-operation among SSIs will no doubt need to be created to enable them to cope with the application of these new techniques. In this connexion it may be important to take stock of current practices in SSIs.^{1/}

The present era of rapid technological change is also a period of recession and stagnation in many national economies. Business failure is common and obtaining credit and a proper understanding of the problems and possibilities of the present situation is especially difficult for the small entrepreneur. This is even so when concerted efforts are being made to make the Government policies vis-à-vis SSIs fully transparent. By joining forces,

^{1/} An example of successful blending of traditional and modern technologies in small-scale production is the Prato textile industry in Italy which provides employment to a total of 70,000 workers in several hundreds of small establishments. In recent years substantial electronic improvements in textile machinery were introduced, above all in the fields of production process control and control of quality standards (e.g. controls of temperature and humidity of the products to reduce energy consumption). As a consequence the Prato textile industry has remained highly competitive even under severe pressure both from domestic large-scale producers and from low-cost import sources. It should be noted that the electronic improvements in textile machinery did not cause major investment expenditures (between 2-15 per cent of total investment in machinery) and that the labour force in Prato is known to be highly skilled and open to innovation. [Colombo, U., Mazzonis, D., Integration of Old and New Technologies in the Italian (Prato) Textile Industry, in ILO, Blending of New and Traditional Technologies. A Portfolio of Experiments and Projects, Geneva 1984, p.107 ff.]

SSIs could both acquire the expertise and the clout needed to deal with an unstable business environment.

International co-operation between SSI associations is still uncommon. The Republic of Korea has a co-operation agreement with the Malaysian Government under which SSI entrepreneurs from Malaysia are being trained in Korea. Korean small entrepreneurs have been invited by the Malaysian Government to work with their counterparts in Malaysia to raise the production standard of car components, a building block for the development of a national car industry.

There would be scope for more extensive co-operation between SSI in developed and developing countries; Sweden has played a pioneering role with its "sister industry co-operation" project with Tanzania and UNIDO has helped to negotiate several similar plant-level co-operation agreements (see also Annex V). Small firms in Japan have entered into joint ventures with developing country SSIs. Thus, an international network could be created which to a certain extent might counterbalance that of the transnational companies. The fact that small enterprises in developed countries are becoming more service-oriented as a consequence of overall changes in the economic structure does not have to be a drawback. Associations of such enterprises could e.g. provide much-needed management and marketing expertise.

(ii) Small-scale industry co-operation in a developed economy - an example^{1/}

The experience of the Fosiemy Group of Entrepreneurs in Malmö, Sweden, as a "self-help" organization created by small- and medium industries in a specific geographical area, may prove useful for those involved in SSIs in developing countries - even if the Group operates in a highly industrialized country. The Fosiemy Group does not rely on Government funds (members pay a modest subscription fee) and its activities require only a minimum of staff and overhead costs; this by itself is an interesting point for entrepreneurs

^{1/} Based on the paper "Study of a small-scale industry co-operation scheme in a developed country" prepared by E.B. Aronsson, UNIDO consultant, in co-operation with the Regional and Country Studies Branch, UNIDO and presented at the expert group meeting in Seoul. A summarized version of the paper is given in Annex IX.

in developing countries where finance and skilled staff are generally in short supply.

The board governing the Group is elected yearly by all members, and consists of high-level executives of various member companies who have a good overview of developments within the member companies and also have built up close contacts with government officials, outside enterprises, etc. Staff requirements are kept at a minimum by organizing working groups composed of company representatives to deal with specific tasks. Administrative support is hired or provided by the companies, whenever the need arises. For special problems (e.g. computerization of the production process) consultants are hired; support from the local government and research establishments is available for such activities.

The Fosiemy Group has served as an example for other entrepreneurs in Sweden. Small- and medium-scale industry co-operation in specific locational areas has become common, and is stimulated by a national federation which also co-ordinates information exchange between members.

The experience of these local small and medium industry co-operation 'groups' in Sweden shows that:

- close physical proximity is essential if entrepreneurs are to co-operate intensively. Even in a country like Sweden, with its extensive (tele)communication systems, over 90 per cent of industries belonging to a co-operation 'group' are located in the same town; (The Fosiemy Group, for instance, includes in its membership only companies located in that particular industrial area which is part of the "greater Malmö" town area.)
- there is an upper limit to the number of companies in a 'group' (in Sweden, the great majority of 'groups' have less than 100 members);
- 'groups', when formed, should focus attention on specific purposes. Successful activities of the Fosiemy Group include services sharing (and providing services to local residents, many of whom work for member companies), bulk buying of supplies, training and information, marketing and co-operation in joint subcontracting arrangements with large enterprises, and joint actions to ensure government support in various instances. Other fields could be e.g. co-operation in organizing the sharing of service personnel for specific tasks, such as tax accounting and data storing, etc.

3. Linkages between small and large industries

(i) Overview^{1/}

The nature of the relationship between small and large industries should always be seen against the background of national development goals. The industrial structure will always include large industries exploiting economies of scale and major natural resources. Using the services of smaller units, however, enables large industries to concentrate resources on essential elements of the production process and to increase production flexibility. Special products or small production batches and special services can be handled by small outside units. SSIs are also able to mobilize resources which a larger unit might not be able to mobilize in an economically justified way.

Linkages with larger industrial establishments are thus a major factor in SSI development. For the small industrialist, the larger unit has the advantage of being a single customer placing orders of considerable size; generally it is located nearby as well. Marketing costs for the small entrepreneur are thus at a minimum (provided that the physical infrastructure is good). Larger units often use more sophisticated technologies, which implies potential learning effects for small industry. In fact, many SSIs have been set up by entrepreneurs who acquired their know-how while working in larger enterprises.

The division of labour between large and small units is thus in principle mutually advantageous. The question remains whether, given this division of labour, assistance to SSIs should be based on the needs of large industries or should focus first and foremost on the needs and abilities of SSIs. There are also practical obstacles to be surmounted. SSIs are not always able to meet delivery schedules and product specifications. On the other hand, the larger size of its partner also implies greater bargaining power, so that large industries can often virtually dictate conditions to SSIs. The vulnerability of SSIs in this respect may become especially clear during recessions, which usually present fewer problems to larger units with greater resources.

^{1/} Based on the paper "Linkages between small- and large-scale industry", prepared by the Institutional Infrastructure Branch, UNIDO, presented at the expert group meeting at Seoul, and the discussions at the meeting.

In developing countries SSIs serving as suppliers to large industries will have to be located close to the latter. Infrastructural costs are often too high to permit wide dispersal. For the same reason, such SSIs may often have to be located close to the larger urbanized areas.

Linkages in industry can take various forms. The main ones are:

- ancillarization, a particularly intensive form of co-operation between a large and a small company which includes training, know-how transfer etc. by the larger company;
- subcontracting which may either involve processing materials for the purchasing company, or the provision of parts or assemblies. At a certain stage of development, R and D and design may also be the subject of subcontracting arrangements;
- complementation, involving products which can also be marketed by themselves (e.g. electronics components, bolts, computer peripheral equipment);
- maintenance and repair services.

In the following two sections, special attention will be given to subcontracting in the small-scale electronics industry and to ancillarization, two highly topical issues in the Asian and Pacific context.

(ii) Ancillarization^{1/}

Ancillarization is a close, long-term relationship between a small and a large industrial company in which the small enterprise supplies the major part of its production and inputs to the larger parent company and the parent company provides software, training, etc., to the small company. Thus it is basically a subcontracting arrangement with the concomitant advantages, but mainly involving one buyer who also transfers (technological) expertise to the smaller enterprise.

Ancillarization is widespread in Japan and India, and the Indonesian "bapak angkat" subcontracting scheme is very similar to ancillarization. Of

^{1/} Mainly based on "Mechanisms for small-scale industry development: Ancillarization - development of feeder industries" (UNIDO/IS.551), prepared by V.K. Dhall, UNIDO consultant in co-operation with the Regional and Country Studies Branch, UNIDO, and presented at the expert group meeting at Seoul.

total sales by small- and medium-scale industries in Japan, over 80 per cent is done as part of such special subcontracting arrangements. Ancillarization is strongest in the textile and metal industry and especially in various sectors of the machinery industry (transport, electric and other machinery). In India, Government-owned industries have been among the main vehicles for the expansion of ancillarization: in the years around 1980 the number of ancillary units serving public sector firms doubled. In the private sector, ancillarization is progressing at a lower rate. Most ancillary units are found in the automobile, engineering and bicycle industries. A study on ancillarization in India has identified a potential of 60-90 per cent in the transportation industry. The service industries also offer good scope, as opposed to basic industries and industries processing such materials as paper, glass and rubber.

Many of the problems of ancillarization are identical to those found in subcontracting in general. Ancillaries do not always comply with specifications and delivery schedules and their cost management would often need to be improved. There also tends to be a rapid turnover of management, with serious loss of experience as a consequence. The parent companies, on the other hand, often order and pay irregularly and use their stronger position to enforce unfair conditions. Nor is there always sufficient commitment to providing organization support. The intensive relationship may thus turn into a dependency relationship. With a guaranteed market for the larger part of its output, the ancillary is not forced to be continuously up-to-date in its technology and marketing strategies. Technological change in the parent company (a change from electro-mechanical to digital switching equipment production) has led to insurmountable problems for ancillaries in India. On the whole ancillarization may work better in relatively unsophisticated industries, as experience with the Indonesian scheme indicates.

A more general constraint on the proper functioning of an ancillarization agreement are the infrastructural inadequacies of developing countries which cause interruptions of the production process and may obstruct communication between partners. Identifying ancillarization opportunities is another problem. The problems and constraints are however outweighed by the advantages of close co-operation in the more traditional technology fields, and many governments have initiated promotional policies and measures. From their experience a number of suggestions can be derived. Apart from a

generally favourable economic climate, ancillarization can benefit from such measures as:

- identifying ancillarization potential through, among others, improved statistical reporting methods.
- expanding the scope of SSIs support measures and facilities to include ancillaries (e.g. entrepreneurship development, product reservation, subcontracting exchanges, technology transfer, pre-feasibility studies), thus strengthening the smaller partner;
- tax adjustments taking account of the special nature of ancillarization;
- special legislation enforcing timely payment of supplies by parent companies;

(iii) Subcontracting in the electronics SSI in Asia and the Pacific region^{1/}

Inter-industrial linkages between small-scale electronics manufacturers and large industries play an important role in a growing number of countries in Asia and the Pacific region. Inter-country co-operation has been limited till now; this is largely a consequence of the fact that the small-scale electronics industry is a recent development in most of the countries, and that it is partly integrated in the production networks of TNCs.

The leading producers in the region are Singapore, the Republic of Korea and India. In all three countries governments have stimulated the electronics industry very actively. SSIs account for approximately 1/3 of total production in the branch (and for some 2/3 of consumer electronics) in India, where subcontracting receives much support. In the Republic of Korea small- and medium-scale manufacturers each represent some 40 per cent of the total number of electronics firms. In Singapore, the share of SSIs is rather modest, but subcontracting has been on the rise during recent years, and subcontractors receive technical assistance from the larger partners. Technologically, SSIs in Singapore and the Republic of Korea seem to be the most advanced.

^{1/} Based on "Small-scale electronics industry as subcontractor in Asia and the Pacific region" (UNIDO/IS.559), prepared by K.H. Plaetzer, UNIDO consultant in co-operation with the Regional and Country Studies Branch, UNIDO, and presented at the expert group meeting at Seoul.

Although Indonesia and Malaysia are important producers, technology levels among small producers are appreciably lower. In Indonesia, some 5,000 SSIs, most of them virtual extensions of larger overseas companies, are involved in the manufacturing or assembly of electronics and related employment. In Malaysia, a major exporter of electronic components, small producers are rather uncommon; subcontracting is now receiving Government attention. Thailand has a fairly well-developed industry catering for the national market, but subcontracting is the exception, partly as a consequence of a rather unfavourable tax structure; yet, some 30 per cent of the radio and cassette units marketed in the country are produced by small local assemblers.

The experience of industrializing countries has shown that the role of small-scale industry in the electronics branch primarily lies in the production of components, in complementation and in the provision of industrial services. The scope for subcontracting is, however reduced by the growing integration of production processes. Nor is innovation, with its high manpower and capital requirements, usually within the range of SSIs in developing countries. If the SSI sector in these countries is to retain or expand its share in the production of electronics, a high production standard and adaptability to product and process change will be required. Pre-investment guidance, SSI-oriented R and D and training (and retraining) highly qualified manpower are areas where Governments can assist modernizing SSIs. Otherwise, various measures outlined above (Government purchasing, fostering co-operation, etc.) may also be applied here. In section 5 of this chapter, more attention will be given to technological upgrading.

4. Promotion of export-oriented SSIs^{1/}

(i) Export potential and export constraints

Exports by developing country SSIs may consist of inputs or parts for overseas manufacturing enterprises or exports of finished goods which either

^{1/} Based on the papers "Promotion of export-oriented small scale industry", prepared by the Regional and Country Studies Branch, UNIDO, "Promotion of export oriented small-scale industries" prepared by Yeo Gyeong Yun, Korea Development Investment Corporation, and "Promotion of export oriented small scale industries" prepared by K.S. Stephens, UNIDO/SIDFA, Islamabad, presented at the expert group meeting at Seoul, and the discussions at the meeting.

have been made on the basis of inputs provided by an overseas industry (e.g. assembly operations) or of locally available raw materials. Apart from the general advantages of low costs and flexibility under changing market conditions (production of small batches), the presence of specific local resources is important for a number of industries. These factors have made certain SSIs internationally competitive. Once again, there is a difference between traditional and modern SSIs: the latter may have to rely mainly on the low cost advantage, whereas for the former unique local qualities (e.g. traditional handicraft) also play an important role. SSIs export potential seems to be largest in the textiles, wood, leather, processed food, light engineering and metal products industries, and also in certain parts of the electronics and chemicals branches.

There are several constraints on the expansion of SSIs exports, which entail a link with a completely different economic environment. High, constant product quality and reliable delivery schedules - weak points of SSIs, as noted above - are crucial for success in the international market. Identifying export opportunities is often a problem for the small entrepreneur, as he is unlikely to understand a major international language or the working of the international market. Operating in this highly unstable environment demands great flexibility on the part of the small enterprise; completely relying on the international market alone may be a great risk. Delays in international payments may threaten the financial stability of a small export producer.

(ii) Promotion measures

The business environment in which an exporting SSI operates transcends national borders. Given its weak bargaining position, the efforts of both Governments and international organizations to promote inter-country economic co-operation at enterprise level acquires special significance. The activities of APO and Technonet Asia,^{1/} are useful examples of inter-country technical co-operation. More specifically, the following measures may be considered to promote export-oriented SSIs:

- tariff/tax reductions, including rebates on customs duties and tariffs on imported inputs;

^{1/} See Annex VII.

- export credit guarantees - these have been established in a number of countries in the region, but there is scope for special conditions for SSIs, whose financial resources are put under severe strain in the case of delayed or non-payment;
- improving linkages between SSIs and enterprises in export processing zones. Spin-offs from these zones to the national economies have remained limited so far, and could be improved by SSIs serving as suppliers to EPZ firms;
- priority to the support of SSIs with proven comparative advantages (e.g. high-quality handicraft). It should, however, be kept in mind that comparative advantage is a relative, dynamic concept, and that entrepreneurs must therefore learn to adapt their production to retain that advantage in a highly competitive international environment.
- assistance in the setting up of quality control measures (e.g. testing facilities) and in the introduction of new technologies;
- assistance in product development and adaptation and packaging design;
- marketing (e.g. through international trade fairs), export facilities (e.g. through export houses) and improved market information flows.

The latter type of promotion provides one area where co-operation between small enterprises can be successful. The Korean Federation of Small Business e.g. sends trade missions to other countries and provides market information to its members.

5. Financing SSI^{2/}

(i) Impediments

For small-scale business, access to credit is often difficult. Commercial lenders in developing countries and even institutions specifically set up to provide credit to the small entrepreneur often consider SSIs as a financial risk. Small enterprises do have certain drawbacks in this respect. Loan repayments tend to be highly sensitive to economic downswings, and defaulting is common even in periods when business is good. Small entrepreneurs do not always keep proper account of their business; written

^{2/} Based on the papers "Financing of small-scale industries", prepared by the Institutional Infrastructure Branch, UNIDO; and "Financial and marketing aspects of small and medium businesses improvement in ASEAN", prepared by Kenneth James, Institute of Southeast Asian Studies, Singapore, presented at the expert group meeting at Seoul and on the discussions at the meeting.

records may not even exist. It is thus hard for a lender to acquire an insight in the nature and viability of the prospective client's enterprise. Nor may the latter be able to provide security. The paperwork involved in getting a loan and a full evaluation of the (financial) consequences of the project he is embarking on may prove to be beyond the abilities of the small businessman.

There is, on the other hand, a certain conservatism on the side of the credit suppliers. In their opinion, "bigger" all too often means "better". Credit officers tend to have a limited understanding and sympathy for the small entrepreneur causing part of the development potential of SSIs to remain untapped through limits on financial resources. Small entrepreneurs, however, also display conservatism: they are often so wary of endebting themselves as to forego good business opportunities and may rely on expensive credit from traditional sources (such as money-lenders) even when cheaper credit is in principle available from modern financial institutions. Credit is quite common in SSIs in the form of trade credit for inputs, but this type of credit of course covers "running expenses" rather than the cost of improvements or expansion; interest rates moreover tend to be high.

(ii) Some examples of financial schemes for small and medium industry

Although tax reductions, infrastructural facilities etc. may be said to represent an indirect type of financial assistance to SSIs, and although one could argue that financial assistance should be scale-neutral because a project's substance should prevail over its size, special measures are needed in developing countries to improve SSI access to credit. Arrangements and conditions vary greatly but amongst the simplest and most effective have been the introduction of hire-purchase schemes to facilitate the purchase of tools and equipment, where the asset itself secures the loan. Some promotion schemes provide seed capital to first-time investors, either in grant form or as long term, low-cost loans. Other schemes supply working capital to small enterprises. This is the area where shortages of capital are normally most serious, and as working capital requirements are in many ways derived from the sum total of management decisions within an enterprise, they are an indicator of viability and efficiency. Whatever its form, financial assistance should be part of a package which includes business counselling, etc. to be fully

effective. The following is a selection of schemes which have been implemented in Asia and the Pacific.

Indonesia

As part of the Integrated Project for the Guidance and Development of Small Industry (BIPIK) of the Department of Industry, extensive facilities have been made available under the KIK (Small Investment Credit) and KMKP (Working Capital Credit) schemes. With World Bank support, a network of some 1,000 branch offices of private, parastatal and state banks has been established to provide assistance. The overall programme is formulated and monitored by the national Bank of Indonesia. To be eligible, the net worth of an enterprise should not exceed Rp. 100 million. Maximum individual loan amounts and Rp. 10 million; depending on the payback record, further loans may be extended. The value of the collateral has to fully cover the loan. Applications, credit appraisal and approval are decentralized to the local bank branch level. The scheme is backed up by credit insurance agreement. Applications yearly run into hundreds of thousands, indicating the need for SSIs credit; unfortunately, no figures on approved applications are available.

Malaysia

The hub of the Malaysian support programmes is the Credit Guarantee Company (CGC). It guarantees banks up to 60 per cent of the amount of loans in default; banks also enjoy tax rebates. Every commercial bank is required to allocate 12 per cent of total loans to small enterprise, part of it through CGC. To potential borrowers, the absence of a collateral for the smaller loans and the low interest rates imposed by CGC (as low as 7.5 per cent for some loans) represent great attractions. Banks, however, have become reluctant to co-operate because of widespread defaulting for which CGC could only provide minimal compensation. Special loan schemes, part of a broad entrepreneurial development package, exist for small indigenous (bumiputra) entrepreneurs.

Philippines

Most aid to small entrepreneurs is directed through the Cottage Industries Guarantee and Loan Fund (CIGLF). It is a joint programme of public

and private financial institutions, the Ministry of Trade and Industry and the National Cottage Industries Development Authority (NACIDA). Credit maximum is P 100,000. Collateral is required for 50 per cent of a loan, the other half being covered by a CILFG guarantee. Equity requirement is 20 per cent of project cost. NACIDA helps borrowers to prepare loan requests, and is also involved in the supervision of financed projects, assisted by the local Small Business Advisory Centres. Other financing schemes involve, among others, the Venture Capital Corporation, a business partner rather than a lender. The country's increased economic difficulties have led to increased defaults on backpayments in recent years, and the number of assisted project has been reduced as well.

Republic of Korea^{1/}

In Korea, a variety of institutions and policies exist to financially assist SSIs. Government finances the Small and Medium Industries Promotion Fund (SMIPF). Two banks catering specially for small and medium enterprise are the Small and Medium Industry Bank and the Citizens National Bank. Banks operating on a nationwide scale must reserve 35 per cent of their loanable funds for small business, local banks 55 per cent. Private banks extending credit to small enterprises are supported by the central bank and a credit guarantee fund. A special institution, the Korean Technology Development Corporation (KTDC) was set up in 1981 to finance software development, enhancing the international competitiveness of the Korean electronics industry. It is a private company which is supported by the Government and the World Bank. The larger part of the funds goes to small and medium industry. Assistance varies from loans to equity participation.

Singapore

The most significant support programmes are the (Extended) Small Industry Financing Schemes (SIFS and ESIFS) which provide assistance to firms whose

^{1/} More information will be found in "Financing of small-scale industries" by Kap-Soo Suh, Korea Technology Development Corporation, and Small business in the Republic of Korea - current issues, policies and promotional activities" by Yun-Sang Choi, Small and Medium Industry Promotion Corporation. These studies will be issued in a forthcoming report, "Promotion of Small and Medium Industry in the Republic of Korea" of the Regional and Country Studies Branch, UNIDO.

fixed assets do not exceed S\$ 3 million. The funds, in which commercial banks, development banks and non-bank financial institutions co-operate, provides both cheap working capital and loans for capital equipment, with the latter now predominating. Collateral requirements are assessed on a case-by-case basis. In recent years, technological upgrading and corresponding skill improvements have received special support. The present economic downturn has led to the introduction of the "one stop" (financial) emergency assistance programme. Of all developing countries in the region, modern credit probably accounts for the highest percentage of loans in Singapore.

Sri Lanka

The Credit Guarantee Scheme in Sri Lanka came into operation in 1979. Guarantees are issued by the Central Bank on behalf of the Government. Participation in this scheme is mandatory for all participating banks. The scheme guarantees payment to the participating bank of 60 per cent of the advance granted by it, subject to a maximum cover of Rs. 400,000. The lending institution should pass on to the Central Bank the same share of the net amount recovered after the payment of a claim under the guarantee.

Thailand^{1/}

In Thailand, financial support policies to SSIs are a relatively recent phenomenon. Most of the assistance to small and medium enterprises is given by the Industrial Finance Corporation of Thailand (IFTC). Small-scale projects are defined as needing a maximum loan of US \$132,500. In 1984, a special loan unit for SSIs was created. It offers both working capital and credit for fixed capital to enterprises with fixed assets below US \$265,000. A new credit programme was to be started in 1985 with the specific objective of enhancing the competitiveness of export-oriented small and medium industries in selected sectors with a high export potential. It is combined

^{1/} See further the study paper "Two step loan - a financial scheme for small and medium industry in Thailand" prepared by Narongchai Akrasanee and Ms. Chintala Viseskul, UNIDO consultants, in co-operation with the Regional and Country Studies Branch, UNIDO, which is reproduced in "Promoting small scale industry in Southeast Asia - selected support schemes in the Philippines, Thailand and Malaysia" (forthcoming), issued by the Regional and Country Studies Branch, UNIDO.

with a technical modernization programme and will initially be limited to 30-40 enterprises. Funds are partly provided through international aid channels.

(iii) Policy suggestions

Although a variety of measures has been taken to counterbalance the orientation of financial support policies towards large enterprise, a coherent policy of assistance to SSIs, embedded in an overall development plan, has yet to emerge in most cases.

The experience with subsidized loans of various kinds leads to the conclusion that these are not an unqualified success. First and foremost, such funds have in most cases proved to be insufficient to cover the needs. They have also often been used to finance established firms with good securities instead of the struggling entrepreneurs for which they were meant. Lack of experience etc. may cause the latter to use the funds for non-viable projects or, tempted by low interest rates, they may use them in an uneconomic way. And many small enterprises have persisted in borrowing from traditional sources, in spite of higher costs. From the point of view of the banks involved, lending to SSIs is often unprofitable in spite of Government compensation.

SSI may therefore possibly be better served by improving their access to loans through the modern commercial channels. This would, however, involve an essential change in the service orientation of commercial lenders. Collateral requirements for SSI should be eased, and partly be replaced by an assessment of the viability of an enterprise or project. The shortage of qualified and motivated staff of which many financial assistance programmes suffer (and which again and again leads to understaffing of branch offices in those rural areas where they are needed most) will have to be overcome, partly through the consolidation of existing institutions; in private banks, a change in attitude of the officers dealing with small entrepreneurs would be of the essence. The core of experienced loan officers could provide on-the-job training. Backing for credit programmes which rely more on private banks could be provided by improved credit guarantee schemes, and by a specialized, experienced institution in the field (such as IFCT in Thailand or CGC in Malaysia) which could e.g. co-ordinate the training of loan officers, improve the empirical

basis for loan appraisal through market research and assist small entrepreneurs in improving their financial management.

6. Technology and SSIs

(i) Introduction^{1/}

Small-scale industries generally rely on the special technical skills of the entrepreneurs themselves. In some cases these skills lie in advanced and specialized areas of industrial activities (e.g. components for the electronic or optical industry), yet in most cases the basis for small-scale engineering enterprises in a developing country, be they formal or informal sector units, is traditional craftsmanship.

Small-scale industries have developed a marked ability in the efficient and flexible use of general purpose or second hand machinery. In most cases, unfortunately, products are not up to international quality standards, which is partly a reflection of the lack of specialization; and although the small-scale entrepreneur may be innovative enough in the use of limited resources, basic innovation will not be within his reach.

The positive social effects of SSI (income and employment generation in disadvantaged regions or among disadvantaged groups) may be strongest in the more traditional type. Traditional technology, however, is not appropriate in every context, and protecting it may result in economic and technical backwardness, as e.g. the closed-economy period in Sri Lanka has shown. In many rural areas the absence of a developed infrastructure, difficult access to certain supplies and low educational levels may favour traditional ways of producing for direct local needs (simple tools and consumer goods). But overall policy should stimulate the insertion of SSIs in the mainstream of development. The positive employment and income distribution effects can be retained if the most labour-intensive of efficient technologies are used. As

^{1/} Based on the papers "Technical support services for small-scale industries in specific sectors, in particular engineering industries", prepared by the Regional and Country Studies Branch, UNIDO, and "Small-scale industries and technology", prepared by the Technology Program, UNIDO, presented at the expert group meeting at Seoul, and the discussions at the meeting.

e.g. has been shown in India and Sri Lanka, even simple technical improvements which can be inserted into existing production processes can lead to dramatic improvements in production without loss of employment, and with substantial income gains. Upgrading technology, and especially the introduction of sophisticated technologies means a greater need/potential for higher quality employment. On the one hand, more expertise is needed, on the other technical improvements can reduce drudgery.

The most advanced technologies in the field of microelectronics or bioengineering can often not be adopted by developing country SSIs. Yet it is important that developing countries do not remain passive followers of technological trends: relying on cheap labour is no longer sufficient for a competitive edge in the modern sector. "Unpackaging" modern technologies does offer opportunities, and the decentralizing potential of modern electronics could also be tapped. Microcomputers can vastly improve the efficiency of accounting, inventory control, production and delivery planning at a low cost if such capability is shared among a number of firms. Product quality control can be improved through electronics. Agro-industries could benefit from new fermentation techniques. Software could be specially developed to serve the needs of SSI in developing countries.^{1/} Modern capital equipment will reduce the labour intensity of a number of industrial operations, but the employment loss may be more than compensated when the increased productivity of new technologies is translated in increased demand for supplies from other enterprises; a growth of industrial services is also likely. Finally, demand for a number of modern products (such as portable radios) is growing even among low-income groups.

For the introduction of new technologies in a developing country, special measures protecting markets and stimulating linkages may be needed in an initial stage. Technical support will have to be given to SSI again, it should be part of an overall programme. The small entrepreneur's access to national research institutes should be improved. Moreover, general and technical education levels must be improved to create both a favourable environment and high-quality manpower. For the majority of small enterprises assistance in the area of technology may be divided into three groups: first,

^{1/} India made a good start in software design. The initial advantage was, however, lost due to the absence of a supporting technical infrastructure.

improved know-how and access to well-established, 'off the shelf' systems and techniques; second, technical guidance and advice with particular production problems and third, technical support for product adaptation. Assistance should focus on:

- training, technology transfer, information (most SSI entrepreneurs do not realize that technology is a buyers' market);
- the selection of appropriate technologies and machinery - they should be relevant for the environment in which they have to operate;
- improving plant layout and production processes;
- greater precision and specialization.

For the more traditional SSI, improving overall technical performance should receive special attention; the success of e.g. the Swedish glass artisanat shows that co-operation can lead to significant gains here. Modern SSIs would benefit most from pre-investment guidance and the training of high-quality specialists. Co-operation among developing countries (such as provided by Technonet Asia, APO and the programme established between the Republic of Korea and Malaysia) could greatly improve the efficiency of such schemes. Although some of the developing countries in the ESCAP region (India, Republic of Korea) now have their own extensive technology research programmes, for most other countries in the region this may only be feasible through co-operation.

Institutions for technical research often have very limited contacts with SSIs, especially in rural areas. To improve such contacts, UNIDO has helped to set up the Technology Service Delivery Systems (TSDS) in the Philippines and in the Caribbean. Apart from advising on the choice of techniques these systems encompass training and information services and assistance for the improved operation of existing facilities; they also provide solutions for technical and related problems. Programmes are implemented by regional advisory centres distributed throughout the country; co-ordination takes place through a central commission. Where necessary, the centres refer problems to the appropriate research institutes. UNIDO has also assisted in the diffusion of modern engineering technology through a project with the Pakistan Automotive Corporation (PACO). PACO vendors are trained to design and tool car components, enhancing their technical know-how and reducing the country's reliance on imports.

One example of comprehensive technology support to SSIs by a Government agency is the Malaysian Technology Display and Resource Centre in Kuala Lumpur, established in 1983.^{1/} Its functions are:

- upgrading technical and managerial know-how and skills;
- advising on (the financing of) machinery and equipment;
- assisting in the improvement of production techniques and products;
- improving the awareness of the general public of the role of SSI.

Staff shortages (especially of technical staff) have so far prevented TDRC from providing all these services, although consultancy and advisory services are being offered. SSI support has also taken the form of a Machinery Exhibition Centre which introduces equipment for various industry groups (including domestically manufactured machinery) to entrepreneurs. To better diffuse the information available at the Centre, two mobile exhibitions and study tours for entrepreneurs outside the capital have been organized. Facilities, however, are inadequate, and it has proved difficult to adapt information transfer to the needs of small entrepreneurs. This has reduced business response to the activities of the Centre. Co-operation with other Government agencies (especially with the Standards and Industrial Research Institute which among others has some experience with technical assistance to SSIs) should improve the effectiveness of TDRC's activities.

(ii) Research commercialization in the Republic of Korea^{2/}

The Republic of Korea is one of the newly industrializing countries in the ESCAP region which pursue a very active technology modernization policy.

^{1/} See further the study paper "Technology Display and Resource Centre for Small-scale Industries in Malaysia", prepared by Anuwar Ali, UNIDO consultant, in co-operation with the Regional and Country Studies Branch, UNIDO. The paper will be included in "Promoting small scale industry in Southeast Asia - selected support schemes in the Philippines, Thailand and Malaysia", (forthcoming) issued by the Regional and Country Studies Branch, UNIDO.

^{2/} Based on the papers "Commercialization of R and D results - the role of a research commercialization company" by Young-Ok Ahn, K-TAC, and on "The success and failure of venture business with special reference to the commercialization of indigenous R and D results from public R and D institute" by Jinjoo Lee, Department of Management Science, Korea Advanced Institute of Science and Technology (KAIST) presented at the Seoul meeting. The subject will be covered in detail in a forthcoming report by the Regional and Country Studies Branch, UNIDO, containing selected papers on promotion of small and medium industries in the Republic of Korea.

Government-funded applied technical research for industrial purposes initially concentrated on the heavy industry. From the late 1970's onwards, small and medium-sized industries have been assisted in improving their technology levels through the intermediation of the Korean Technology Advancement Corporation (K-TAC). Although K-TAC is owned by several research institutes closely tied to the Ministry of Science and Technology, it mainly operates on a commercial basis. It markets and sells research results, production licenses and prototype equipment, sponsors R and D and provides management counselling and market research. The transfer of technology takes place through outright sale or through a joint venture with the company in question, after a thorough feasibility study. After an average of five years, K-TAC steps out. Experience so far has shown that K-TACs capital returns over that period will roughly equal the original investment. K-TAC co-operates with various technology finance companies. These are either of the more traditional kind providing loans or resemble a venture capital company investing in R and D. The Republic of Korea Government also provides loans for technology development which are generally awarded to firms co-operating with research institutes, thus strengthening these ties. K-TAC experience shows that:

- the domestic market (which initially may have to be protected) is an essential factor for the success of a new product; evaluating demand, the competitive environment and price movements at an early stage thus acquires great importance;
- sharing technical and sales facilities with other companies significantly enhances the chances of success for a SSI coming out with a new product;
- continuous growth requires continuous innovation.

For the continued viability of organizations like K-TAC, the following is essential:

- close co-operation with industry;
- competent staff which knows both industry and the scientific community;
- proper selection of entrepreneurs in a joint venture, and the choice of a technology with good commercial prospects;
- identifying sources of funds in industry or government which can be tapped through consultancies;
- sufficient capital reserves - it may take several years before a project becomes commercially viable.

7. SSIs in non-metropolitan areas

(i) Problems and policies - an outline^{1/}

Small scale industries in developing countries, especially the more modern type, have often followed the locational patterns of larger industries in and around major urban areas. Good infrastructure, the proximity of other industries (which may serve as suppliers, buyers or sources of information), qualified labour and a large, concentrated consumer market attract firms. Such services as are available to (small) industries will generally be located in the larger population centres, and the same applies to government institutions. Policies have in most cases strengthened the tendency for economic activities outside the primary sector to concentrate in urban agglomerations.

The process of cumulative development in and around urban centres, as noted in Chapter II, has its costs: congestion and pollution, underutilization of rural resources and rural manpower, and the disruptive effects of growing spatial disparities in income levels and mass migration from the countryside to the towns. What represents a gain for individual entrepreneurs may thus have significant costs for society as a whole.

To redress the spatial development balance, governments have formulated and implemented various policies. Small-scale industry can play a major role here, as large industrial complexes with their great demands on infrastructure, services and qualified manpower are viable outside established urban environments only if a major natural resource can be exploited. SSIs would also be better suited to acquaint rural populations with industrial activities (laying the cultural basis for further industrialization) and to use scattered agricultural resources. Where a sufficiently developed and diversified industrial core is supplemented by essential private and Government services, the "service centres" thus created can play a major role in the development of rural areas. Although much can be done to support local initiatives to establish small industrial enterprises in such service-centres,

^{1/} Based on the paper "Creation of a conducive environment for small-scale industries in non-metropolitan areas", prepared by the ESCAP/UNIDO Division of Industry, Human Settlements and Technology, presented at the expert group meeting at Seoul, and the discussions at the meeting.

SSI development will normally tend to follow and reinforce development initiatives in other sectors of the local economy rather than initiate or precipitate such developments. Appropriate training and financial assistance to small enterprises in such locations, taking account of their viability in this environment, then becomes very important. Examples of SSI development schemes in rural areas are UNIDO's SEED programme outlined above (p.24), China's rural and township industries integrated in the agricultural collectives, India's policies to promote village and small industries, the Indonesian "clustering" system of SSIs in rural areas, and the various programmes formulated by the Philippine Productivity and Development Centre which are described in section (ii) below.

Experience has shown that policies to disperse industrial growth can only be successful if they are implemented as an integrated package (improving rural infrastructure and education, extension services, capital subsidies). Total dispersal may lead to the loss of positive agglomeration effects, economies of scale, etc., and heightens the cost of infrastructural works. Locating SSI in or around population centres in the countryside is usually a better option. Re-settling existing industries has generally proved to be very costly and difficult; policy measures should therefore concentrate on dispersal incentives for new enterprises (which do not depend on actual location in urban environments for inputs, labour and sales) and - primarily - on activating and strengthening existing rural entrepreneurial potential. As unemployment and underemployment are particularly serious problems in rural areas, labour-intensive industries deserve special attention. These, anyway, often fit well in the rural environment, and a basis for industrial development may already exist in the form of traditional handicraft firms.

(ii) Support programmes for rural industries in the Philippines^{1/}

A main source of assistance to SSI in the Philippines is the Productivity and Development Centre (PDC) of the Development Academy. One of its early

^{1/} Based on the paper "The Local Study Mission and the Association Building projects: approaches to SME development" by A.L. Tolentino, UNIDO consultant in co-operation with the Regional and Country Studies Branch, UNIDO and presented at the expert group meeting at Seoul. This document has been reproduced in "Promoting small scale industry in Southeast Asia - selected support schemes in the Philippines, Thailand and Malaysia", (forthcoming) prepared by the Regional and Country Studies Branch, UNIDO.

initiatives was the Medium- and Small-scale Industries Co-ordinated Assistance Programme (MASICAP). It identified industrial development potential at the local level, and this information was used to design project prototypes. MASICAP then sought entrepreneurs and helped them to carry through the project. College and university students assisted in the programme, thus acquiring first-hand experience with development problems. The Market Information and Direct Assistance (MIDAS) project, partly based on the experience gained with MASICAP, provided information to SSI on prices, raw materials, national and international markets. Activities included, where necessary, actual sales and purchases by a series of roving market assistance teams, and marketing training and consultancy were also provided. Special attention was given to exploiting inter-regional trade opportunities within the country. MASICAP and MIDAS was eventually absorbed in the activities the Ministry of Trade and Industry.

The Local Study Mission (LSM) project concentrated on the transfer of technology from the towns to the countryside. On the basis of area- and sector-specific analyses, training and information programmes were set up. These included factory visits and discussions and workshops involving rural and urban entrepreneurs. These opportunities were also used to establish business contacts. Results were mainly registered in the larger SSIs, where entrepreneurs both have the experience and the means to realize the plans inspired by the exchanges. For very small industries (found especially in the rural food sector) a special programme was formulated.

Sectoral Productivity Associations were an offshoot of LSM. It was felt that co-operation among entrepreneurs who participated in workshops and discussions and were working in the same area and sector could bring substantial benefits in the solution of various specific problems. For development authorities such associations would also provide a channel for aid distribution and a feedback mechanism. SPA's have successfully tackled productivity, marketing and technical problems, but as soon as a specific problem was tackled, interest in the SPA tended to wane. Associations involved in e.g. joint ownership of processing facilities tend to have a more stable life. Finally, the immediate environment in which such associations operate (local government, financial institutions, other "bottom up" forms of co-operation) has proved to be of great influence on the viability of SPA's.

IV. OVERALL CONCLUSIONS AND PROPOSALS FOR FURTHER ACTION^{1/}

In developing countries, especially in rural areas where the majority of the population lives, SSIs can make an important contribution to economic and social development. SSIs generate a substantial part of employment in the developing countries and offer excellent opportunities for entrepreneurship development. They have proved to be efficient users of simple and appropriate technologies and to be flexible in the production of small batches of products using scattered resources which would otherwise not be exploited by industry.

In this further development, SSIs are confronted with several major problems:

- Serious shortcomings of several prerequisites for industrial development, especially in rural areas (notably the lack of institutional and physical infrastructure);
- Linkages with larger industries, a major road towards SSI development, suffer from unequal bargaining power between partners. On the SSI side, awareness of linkage potential is often limited, and both low product quality and irregular delivery seriously inhibit stronger linkages;
- Small industry entrepreneurs are often prevented from tapping markets beyond the local level due to lack of information and resources;
- Access to credit, in the form of working capital or finance for capital equipment, is impeded by commercial lenders' policies favouring larger enterprises and the inability of many small entrepreneurs to provide collateral guarantees as well as project viability estimates;
- Small entrepreneurs in developing countries generally lack the know-how and the resources to introduce new technologies or to make major innovations - yet technological and product renewal are necessary for success under continuously changing market conditions;
- Government industrial development policies are often focused more on large industry and less on SSI; policies for SSI often leave too little leeway for the exercise of entrepreneurship and are often also implemented by bureaucracies with which small entrepreneurs cannot cope;
- There is a lack of co-ordination among agencies assisting SSIs and the advantages of an approach which integrates the various aspects of SSI support are not always perceived.

^{1/} Based on the "Summary of conclusions and recommendations" which was considered and agreed to at the concluding session of the Seoul meeting; the full text may be found in Annex IV.

Government agencies involved in SSI development should facilitate, stimulate and co-ordinate the growth of enterprise rather than attempt to impose rigid schemes. Co-operation between agencies and the integration of their programmes could be improved; this overall streamlining could also reduce shortages of qualified manpower. Assistance to SSIs should be embedded in an overall policy to stimulate economic development; this macro-approach should also include such measures as raising the general educational level and improving the overall physical infrastructure. To support both overall and SSI development, international organizations like UNIDO could contribute by formulating or expanding programmes based on country-level assessments of structural changes resulting from technological development; trends in selected industrial subsectors of special relevance to SSIs and other factors in the national environment influencing the emergence of small enterprise. More particularly, such a programme could be formulated for the developing countries in Asia and the Pacific region. Such a programme would involve regular consultations between policy-makers, experts and others involved in promoting SSIs. To this end UNIDO can assist the developing countries with studies which would lead to policy reformulation favouring industrial development restructuring with particular reference to SSIs.

This macro-approach should be complemented by in-depth country studies analyzing specific country experience and suggesting specific measures enhancing SSI development. The studies envisaged would especially address issues such as:

- the relationship between foreign investment and SSI development;
- the experiences of industrial associations working at the sub-national regional level;
- attempts made to integrate SSI and agriculture at the local level;
- the organization, dissemination and application of R and D for SSIs;
- methods of providing facilities (e.g. mini-estates) for SSIs in rural areas;
- marketing organizations for small enterprises;
- subcontracting potential for highly specialized small industries and industrial services firms;
- alternatives to the present schemes of providing credit to SSIs; and
- introduction of new and emerging technologies into the SSI sector.

Complementary to the envisaged country level analyses, action should be taken to introduce, as appropriate, various specific measures, as suggested in the present study report, in order to:

- identify unique features of traditional and modern SSIs which may be exploited either at the national, regional or international level;
- identify and stimulate entrepreneurial talent at the local level;
- improve access of SSIs to commercial credit;
- improve quality control and overall product quality (including design and presentation);
- create better operational and service facilities for SSI at the local level;
- support co-operation among SSIs both nationally and internationally, the latter specifically to exchange experience and to transfer modern technology and management techniques;
- involve SSI associations in the formulation and implementation of support programmes (provision of incentives, credit, training, etc.);
- induce for SSIs to participate in public tenders, individually or in groups;
- provide better links between large and small industries (e.g. through subcontracting exchanges, subcontracting to firms in EPZs);
- encourage SSI related R and D and improved access of SSIs to research and development, and technological institutes;
- create information exchange networks; and
- promote human resource development (improved on-the-job, vocational and high-level technical training), involving organizations which are familiar with the business environment.

UNIDO/ESCAP Ad Hoc Expert Group Meeting on
Policies and Strategies for Small-scale Industrial
Development in the Asian and Pacific Region
17-20 September 1985, Seoul, Republic of Korea

PROGRAMME

17 September 1985 - Opening session

- Opening ceremony - (Presided by Dr. T.W. Kwon, KAIST)
- Opening statements by Mr. N. Ramm-Ericson of UNIDO and Mr. H.G.R. Reddy of ESCAP
- Statement by Mr. Vunibobo, Resident Representative, UNDP, Seoul
- Welcoming address by Dr. Hakze Chon, President of KAIST

Session I - The role of small-scale industrial development

- Introductions by Mr. N. Ramm-Ericson of UNIDO and Mr. Yun-Sang Choi of SMIPC

Session II - Programmes, policies and strategies for small-scale industrial development

- Introductions by Mr. N. Ramm-Ericson of UNIDO and Mr. H.G.R. Reddy of ESCAP
- Country paper presentations, including papers by APO and Technonet Asia

18 September 1985

Session III - SSI-support - some key areas for attention

- New forms of small-scale industry co-operation
Introduction by Mr. N. Ramm-Ericson of UNIDO and Mr. R. Aronsson, UNIDO consultant
- Linkages between small- and large-scale industries
Introductions by Ms. Z. Taluy of UNIDO, Mr. A.S.H.K. Sadique, UNIDO Regional Adviser, ESCAP and Mr. K.H. Plaetzer, UNIDO consultant
- Promotion of export-oriented small-scale industries
Introductions by Mr. K. Stephens of UNIDO and Mr. Yeogyong Yun of KDIC
- Financing of small-scale industries
Introductions by Ms. Z. Taluy of UNIDO, Ms. Chintala Viseskul, UNIDO consultant, Mr. Kenneth James of ISEAS and Mr. Hang-Seup Shim of KTDC

19 September 1985

Session III (continuation)

- Technology in small-scale industries - current trends and future prospects

Introductions by Mr. K.H. Plaetzer, UNIDO consultant, Mr. Ali Anwar, UNIDO consultant, Mr. Young-Ok Ahn of K-TAC and Prof. Jin Joo Lee of KAIST

Session IV - Development and strengthening of small-scale industries in rural as well as urban areas

- Introductions by Mr. H.G.R. Reddy of ESCAP and Ms. Z. Taluy of UNIDO

20 September 1985

Visit to the Banweol Industrial Estate Corporation (small-scale companies)

Visit to Small Business Training Institutes

Presentation (film) of activities of the Korea Federation of Small Business.

Concluding session

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LIST OF DOCUMENTS

<u>Document No.</u>	<u>Title</u>
IHT/PSID/L.1	Provisional agenda
IHT/PSID/L.2	Annotated provisional agenda
IHT/PSID/1	The contribution of small-scale industries to industrialization, prepared by the UNIDO secretariat
IHT/PSID/2	Policy recommendations for the strengthening and promotion of small-scale industries, prepared by the UNIDO secretariat
IHT/PSID/3	Small-scale electronics industry as subcontractor in Asia and the Pacific region, prepared by K.H. Plaetzer, UNIDO consultant (UNIDO/IS.549)
IHT/PSID/4	Linkages between small- and large-scale industries, prepared by the UNIDO secretariat
IHT/PSID/5	Financing of small-scale industries, prepared by the UNIDO secretariat
IHT/PSID/6	Technical support services for small-scale industries in specific sectors, in particular engineering industries, prepared by the UNIDO secretariat
IHT/PSID/7	The Technology Display and Resource Centre for small-scale industries in Malaysia, prepared by Ali Anuwar, UNIDO consultant
IHT/PSID/8	Entrepreneurship development: basic issues and institutional support mechanisms, prepared by the UNIDO secretariat
IHT/PSID/9	Mechanisms for small-scale industry development: ancillarization - development of feeder industries, prepared by V.K. Dhall, UNIDO consultant (UNIDO/IS.551)
IHT/PSID/10	Report on the development of small and medium-scale industries in the ESCAP region, prepared by the ESCAP secretariat
IHT/PSID/11	Regional co-operation for small-scale industries development and technology sharing: the Technonet Asia experience, prepared by Leon V. Chico, Technonet Asia, Singapore

- IHT/APSID/12 Entrepreneurship development for small- and medium-scale industries in selected countries in the region, prepared by the ESCAP secretariat
- IHT/APSID/13 Creation of a conducive environment for small-scale industries in non-metropolitan areas, prepared by the ESCAP secretariat
- IHT/APSID/14 Small-scale industries development: a second look, prepared by Leon V. Chico, Technonet Asia, Singapore
- IHT/APSID/15 New forms of small-scale industries' co-operation, prepared by the UNIDO secretariat
- IHT/APSID/16 Promotion of export-oriented small-scale industry, prepared by the UNIDO secretariat
- IHT/APSID/17 Small-scale industries and technology, prepared by the UNIDO secretariat
- IHT/APSID/18 Two-step loan - a financial scheme for small and medium industry in Thailand, prepared by Narongchai Akrasanee and Chintala Viseskul, UNIDO consultants
- IHT/APSID/19 Financial and marketing aspects of small and medium business improvement in ASEAN, prepared by Kenneth James, Institute of Southeast Asian Studies, Singapore
- IHT/APSID/20 Development of small industries in India - policies, programmes and perspectives, prepared by G. Venkataraman, Ministry of Industry and Company Affairs, New Delhi
- IHT/APSID/21 Small-scale industry development in the Philippines, prepared by M.S. Salazar, Jr., University of the Philippines Institute for Small-scale Industries, Manila
- IHT/APSID/22 Small-scale industries interface with UNIDO's programme in Pakistan, prepared by K.S. Stephens, UNIDO/SIDFA, Islamabad
- IHT/APSID/23 Promotion of export-oriented small-scale industries, prepared by K.S. Stephens, UNIDO/SIDFA, Islamabad
- IHT/APSID/24 The Local Study Mission and the Association Building Projects: an approach to SMI development, prepared by A. Tolentino, UNIDO consultant
- IHT/APSID/25 Study of a small scale industry co-operation scheme in a developed economy, prepared by Reine B. Aronsson, UNIDO consultant
- IHT/APSID/26 The role of APO in the development of small industries in Asia, prepared by APO, Tokyo
- IHT/APSID/27 Some aspects for the development of small-scale industries in Burma, prepared by U Khin Tun, Cottage Industries Department, Ministry of Co-operatives, Rangoon

- IHT/APSID/28 Rural and township industry - key to China's development, prepared by Lin Zixin, Consultant, China Research Centre for Economic, Technological and Social Development, Beijing
- IHT/APSID/29 The development of small scale industry in Indonesia with emphasis to the Fourth Five-Year Development Plan, prepared by Bintealdjemur Danuhadiningrat, Directorate General of Small Industry, Jakarta
- IHT/APSID/30 Country report of Malaysia's small-scale enterprises development, prepared by the Small-scale Enterprise Division, Ministry of Trade and Industry, Kuala Lumpur
- IHT/APSID/31 Nepal, country paper, prepared by Ms. Ambika K.C., Department of Cottage and Village Industries, Kathmandu
- IHT/APSID/32 Country paper on Pakistan, with special reference to Baluchistan, prepared by Sheik Anwar-Ul-Haque, Director, Small Scale Industries Baluchistan, Quetta, Pakistan
- IHT/APSID/33 Country paper Sri Lanka, prepared by Bandula S. De Silva, Director of Small Industries, Colombo
- IHT/APSID/34 Country paper. Small industry development in Thailand, prepared by Padetpai Meekhun-iam, Ministry of Industry, Bangkok
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- IHT/APSID/36 Commercialization of R and D results - the role of a research commercialization company, prepared by Young-Ok Ahn, Korea Technology Advancement Corporation (K-TAC), Seoul
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- IHT/APSID/38 Financing of small-scale industries, prepared by Hang-Seup Shim, Korea Technology Development Corporation (KTDC), Seoul

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS AS CONSIDERED AND AGREED TO
AT THE SEOUL MEETING

1. The role of small-scale industries in industrialization

It has increasingly been recognized in many developing countries that small-scale industries (SSIs) could play a decisive role in expanding and diversifying industrial production as well as attaining the basic objectives of development, especially since small scale enterprises clearly represent the major part of industrial activity in most countries, both in terms of the number of establishments and of employment. Hence, planners and policy-makers are giving increasing attention to the SSI sector.

It was noted that in most countries the statistical data needed to assess the role of SSI more closely and to formulate policy measures were very weak. Often also the division between SSI and medium scale industries was, for good reasons, not clearly delineated (see further below).

The impact of SSIs on development and industrialization was considered particularly important in the following ways:

- Relative strong contribution to employment generation (although SSIs do not necessarily have to be of labour-intensive character). SSIs are essential tools for absorbing the abundant and rapidly growing labour supply in many countries. Obviously the generation of additional employment opportunities should not mean promoting inefficient labour-intensive industries.
- The pursued industrial growth path in many countries implies that the effects of policy-makers actions have tended to favour urban centres at the expense of rural areas resulting in deepened regional income disparities. Since there is a large potential for SSIs in rural areas, an active promotion of SSIs serves as a means of decentralizing industry, thereby accelerating rural development and contributing to stemming urban immigration and problems of congestion in the large cities.
- SSIs provide opportunities for establishing links between agriculture and industry. They are also often able to utilize local raw materials and waste products available in relatively small quantities.
- Although the success of development of the modern SSI sector in non-metropolitan areas requires good infrastructural facilities, these can be provided at relatively little cost.
- SSIs are a most important growing ground for entrepreneurs.
- SSI entrepreneurs are a major source of mobilizing private savings and of channeling them into productive purposes.
- SSIs enhance the flexibility and diversification of industrial production because their output may be more easily adapted to changing market conditions. This potential results from the normally small lot size or small batch production procedures of SSIs.

- SSIs can play an important role as manufacturers of parts and components for large-scale industries because of their specialized skills and cost advantages.

The emerging new technologies - in particular the application of micro electronics - are posing most important challenges to the SSI sector. Large potential for the adoption of microelectronic technologies exists even for small enterprises. The realization of this potential depends, however, on economic and socio-cultural factors, it being evident that the introduction of high technology is encountering various obstacles in the small units of production.

2. Programme, policies and strategies for small-scale industrial development

(a) Key issues identified and reviewed

In reviewing what would be the important goals of SSI development in the context of the economies of the developing countries, the experts were of the view that both labour (i.e. traditional) and technology-intensive (i.e. modern) SSIs should be promoted, thus making full use of the dynamic nature of these industries. Labour-intensive industries might encounter activity limitations due to lack of labour skills which could require a change in production technology. On the other hand, technology-intensive SSIs can contribute to additional employment opportunities on higher levels of skills as well as broaden the production range of SSI. A distinction should be made between the traditional and modern sector, especially in the context of policy formulations and promotional measures.

It was generally felt that the definition and method of classification of village, small- and medium-scale industries nearly all the developing countries of the region needs continuous updating. It is important to distinguish between the traditional SSIs and modern SSIs which employ higher levels of technology, have good export possibilities and a high linkage potential (through subcontracting and complementation) with large-scale industries within or outside the country.

(b) Proposals and recommendations

In view of the self-perpetuating tendency of concentration of SSIs in the metropolitan areas, there should be a conscious and vigorous policy to provide a conducive environment of enterprises in rural areas. The overriding consideration in this policy directive should be to eliminate the differences in the amenities between urban and rural areas. Such a policy would contribute to the decentralization of small-scale industries and can be expected to lead to an increased utilization of locally available raw materials.

As to marketing policy, SSIs should cater both for domestic and for international market outlets. The first determinants of the extent to which SSIs can penetrate markets are product type and quality. The second determinant is the marketing capability of the SSIs which should be strengthened both through direct actions of the SSIs and guidance activities of support institutions. Marketing efforts should encompass final consumer products as well opportunities for subcontracting and its other linkage schemes. This aspect is particularly relevant for the enhancement of traditional SSIs as their survival in the long run will mainly depend on increase in productivity and maintenance or achievement of high product

quality. Furthermore, the identification and pursuance of "unique features" (see section 7 below) of traditional and modern SSIs might in many cases be an essential factor for vigorous and dynamic development.

Analyzing the presently existing regulations and government interventions in many countries of the regions it was esteemed to be important that these should have a promotional rather than a regulation character and that policies with relevance to SSIs should be geared towards flexibility and strengthening of entrepreneurial capabilities. Especially the modern SSIs will require clear and transparent government policies, enhancing continued technological innovation to cope with international developments. In this context special attention was drawn to the fact that modern SSIs operate in a highly dynamic business, technology and market environment which is similar to that of large industries. This environment corresponds to the one encountered by SSI in developed countries. This leads to the conclusion that direct contact and co-operation with SSIs of developed countries will contribute to strengthen the position and perspective of SSIs in developing countries. It is recommended that a systematic approach be developed to foster such co-operation which also should encompass medium-size industries.

3. New forms of small-scale industry co-operation

(a) Key issues identified and reviewed

In the discussion, the experts observed that new forms of small-scale industry co-operation were being developed for assisting and promoting SSI development. These include the establishment of small-scale industry associations covering SSI in general or in particular branches. It was observed that associations based on certain business types such as retailers associations and food processing associations, sometimes develop intense competition and rivalries to the disadvantage of growth. Associations formed on the basis of services required by the SSIs may present a more useful form of co-operation. It was generally felt that a key issue is how to mobilize the existing associations (and new ones) to play a more useful role in assisting and promoting the SSIs. Other key issues include co-operation in contacts with large industries (e.g. subcontracting exchanges); joint marketing; joint R and D; joint administrative services; co-operation with financial institutes; setting up and operation of own technical service institutes and/or co-operation with public and semi-public institutes; training and re-training in management and skills; etc. Experience has shown that SSI associations set up with a specific purpose (collective purchasing etc.) tend to be more successful and long-lived than associations set up for general purposes.

It was observed that even modern SSIs often behind large enterprises with respect to the application of microelectronics technology and other technologies for improved operations - mainly because they lack economies of scale and scope as well as know-how. To overcome this barrier and to improve their viability, SSIs should join forces within the framework of their associations or other task-oriented groups.

(b) Proposals and recommendations

(i) At the national level

It was suggested that at the national level particular attention should be given to the following:

- Government agencies responsible for small-scale enterprises trade and business co-operatives and associations in developing countries should review and consider the new forms of associations and their benefits.
- The forming of groups of companies, associations and/or co-operatives for mutual benefits should be promoted among private sector entities. In forming private groups, executive officers should be selected who have a great knowledge of the companies and persons in the industrial area, have good contact with local government and a broad knowledge of supplier services in the area.
- Forms of co-operation which strengthen the potential of SSIs to jointly participate in tenders leading to subcontracting business.
- Establishment of government procedures which enable groups of SSIs to participate in public tenders.
- Assistance of associations to member SSIs to simplify bureaucratic procedures and obtain business advantages, e.g. in purchasing, banking, transport and services.

(ii) Regional and international level

It was suggested that at the regional and international level particular attention should be given to the following:

- Developed countries should be encouraged to invite members of SSI associations from developing countries through technical assistance programmes to inform them on the organization and functioning of associations in their countries.
- Further exchanges of information and experience should be organized, via bilateral and multilateral institutions.

4. Linkages between small- and large-scale industries

(a) Key issues identified and reviewed

In the discussion it was observed that common forms of linkages currently practiced were primarily subcontracting, followed by complementation and, to still a relatively low degree in the region, services provided by SSIs to other industries in the areas of maintenance, repair and others (technology services, computer software services and the like). However, scope and intensity of linkage activities differ considerably in the various countries of the region. Attention was drawn to the advantages and disadvantages of linkages in general and in particular of the types of co-operation currently in operation. It was suggested that linkages should contribute to the technological innovation process of SSIs, enhancing industrialization and the competitiveness of these industries.

Inter-industry linkages in industrial countries emanate mainly from market-induced forces, but in developing economies general guidance should be provided to raise the level of technology of SSIs. Co-operation between small and large industries should be co-ordinated in the context of overall economic and industrial development goals.

Particular attention was drawn to the fact that, as a consequence of technological changes in recent years, modern SSIs (i.e. technologically advanced SSIs) have taken on new dimensions and importance. Governments' attention should be drawn to this fact, especially as regards future employment potential. Besides traditional labour-intensive SSIs, the technology-intensive SSIs in specific sectors will deserve support and attention.

(b) Proposals and recommendations

Recommendations were made in respect of policies and strategies to cope with the challenging demand patterns of present times. The experts emphasized the necessity to strengthen small/large industry linkages, to reduce bureaucracy in governmental procedures related to SSI, to reduce government interventions to a guidance function and to streamline the operations of support institutions. Besides the general strengthening of traditional labour-intensive SSIs, advantage should in appropriate SSI sectors be taken of new technologies which require, normally, a higher degree of skills and professional specialization and hence give additional employment opportunities to this type of labour force in industry.

Attention was drawn to the following measures:

- Promotional measures to foster the establishment of subcontracting and complementation linkages between SSIs and large scale industries.
- Technical and quality control support measures for SSIs to meet the quality standards of the contracting company.
- Creation of schemes for participation of SSIs and groups of SSIs in the identification of tender potentials for its members (i.e. active marketing).
- Elimination of double taxation (e.g. sales tax on industrial products) for products manufactured under linkage patterns (subcontracting, complementation) to strengthen inter-industrial relations.
- Creation of national and regional subcontracting exchange schemes for highly specialized production equipment as well as calibration and quality capacities.

5. Promotion of export-oriented small-scale industries

(a) Key issues identified and reviewed

In the discussion the experts observed that SSIs possessed many advantages for both domestic and export markets and that many of the areas of assistance to SSIs aimed at enhancing both domestic and export growth potential. It was observed that SSIs also faced numerous problems and needed improvement through self-generated efforts, strengthening of local organizations providing assistance and incentives, as well as the creation of favourable external environment, especially for export promotion. Attention was drawn to the fact that promotion of export-oriented SSIs was both politically and economically desirable especially as they earn foreign exchange and often make use of local raw materials. It was observed that exporting required certain characteristics and that such criteria were

generally met rather by medium- than by small-scale enterprises. It was also observed that small enterprises often concentrate first on the local market and grow into medium enterprise scale and into exports. It was pointed out that SSIs are large in number and very diversified and that it was therefore difficult to find a common denominator to map out a single or simple solution to their export problems and promotion. Export-orientation, in particular, often attempts to link two completely different economic and social environments which require adjustment to change, meeting minimum economies of scale, product adaptation, maintaining quality and delivery schedules and flexibility to respond to international trends. It was further noted that SSIs with highly specialized products do have potential to participate in export markets in spite of their small size.

An assessment of a country's manufactured export potential in the SSI sector can be made from both the supply side and the demand side. Particular attention may be given to the possibilities of supplying parts or special components to large-scale manufacturing exporters in the country.

(b) Proposals and recommendations

At the national, regional and international levels:

- That SSIs be encouraged and assisted to help themselves, through e.g. consortia for international marketing, purchasing, R and D, etc. That they must pay particular attention to improvements in their own processes, fulfillment of orders, meeting quality requirements and applying strict quality control in its complete scope of application. This will contribute to the reduction of waste, scrap and defect parts and products and hence contribute to raw material savings and reduce production costs.
- That Governments, public and private institutions should consider and make organizational improvements to enable effective assistance to exporting SSIs in fields such as management, technology, finance, infrastructure, and, above all, information on export market requirement and potentials.
- That SSIs with specialized production be identified and encouraged to take advantage of export possibilities, directly or through linkage with large local exporters. Export houses and trading houses are institutions which might most effectively provide promotional and market intelligence inputs to the SSI sector.
- The SSI sector may offer prospects for linkage with companies in export processing zones (EPZs) in terms of supplies to large companies in the zones, e.g. through the local SSI 'network' as suppliers of specialized components.
- That priority sectors in exports be identified on basis of proven comparative advantages, such as handmade products of high quality and design, ensuring acceptability in the international market.
- The improvement of the competitiveness of SSI products in export markets by improved packaging, design and presentation.

6. Financing of small-scale industries

(a) Key issues identified and reviewed

In reviewing the key factors inhibiting the access to institutional finance by SSIs, constraints were pointed out attributable to lending institutions of developing countries as well as to the SSI entrepreneur and his technical management capabilities. It was felt that the financial institutions, having concentrated their lending on low-risk large-scale industries, had in many cases not acquired either the experience or the information base to increase lending to a large number of small borrowers. Adapting institutions to initiate lending programmes for SSIs was a long-term process. The time required to train credit officers to gain experience in development financing necessarily takes many years.

Examples of special lending schemes of several Asian countries which were discussed showed that whenever special financial measures for SSI were introduced by governments, provision of advice, business counselling, training and extension services had to go hand in hand with the loans to achieve the expected impact on the development of the SSI sector.

It was observed that the main strategy of most of the financial aid schemes had been to make cheap credit available to SSIs. Empirical studies indicate that such a strategy may even be detrimental to SSI development in the long run because participation of commercial banks in financial assistance schemes is essential in view of their established network of branches and comparative advantage in loaning expertise. However, banks will continue to be reluctant to participate if the schemes are perceived to be commercially unviable. Moreover, it was argued that cheap credit may reduce the economic efficiency of enterprises and would benefit those who have better access to institutional finance rather than the less-established enterprises to whom such schemes are directed.

It was generally felt that instruments such as credit guarantee schemes were conducive to greater participation of regular lending institutions in SSI financing. Therefore, such instruments and schemes should be reviewed and refined to benefit the target groups more effectively.

(b) Proposals and recommendations

- It was concluded that, in the long run, the development of SSIs is better served by easy and rapid access to credit at normal bank lending rates than by the availability of a limited amount of cheap credit. A reasonable rate of interest would provide banks with the margin to cover the higher risks and administrative costs of serving a large number of small enterprise loans. It was recommended, however, that a reorientation of assessment criteria for SSI loans should be effected. Particularly, there should be less emphasis on strict collateral requirements and more attention to the viability of the project.
- Particular attention should be given to the training of loan officers so as to create a new generation of development conscious loan officers with required skills to assess and assist viable small industries.
- Governments should define a suitable institutional setting whereby collective efforts to develop and provide financial services for SSIs

are co-ordinated by perhaps not more than one or two specialized institutions (preferably those already experienced in the field) which should cover all public and private financial assistance schemes to the SSI sectors.

- Special financial schemes should be part of an integrated package of assistance to SSIs. Provision of institutional credit should be supplemented by adequate services, such as business counselling, extension services, etc.

7. Technology in small-scale industries - current trends and future prospects

(a) Key issues identified and reviewed

In the discussion the experts observed the influence technological innovation will increasingly have on the SSIs in the region. Technological innovations will have to be reviewed on a country basis and, should, if need be, be adapted in the form of "relevant technology". Besides the technology in question, other factors for the adaptation will have to be considered, such as socio-cultural patterns, labour-related aspects and the industrial environment.

As to appropriate technology applications to improve SSIs production procedures, some selected examples of positive results in various countries in the region were mentioned. However, concern was expressed over the fact that credit from by official financing institutions is hardly available to finance basic technology improvements.

Following the presentation of a Korean research commercialization company (K-TAC, affiliated with KAIST) which also participates financially in new ventures based on locally developed or adapted "relevant technologies" (in technologically advanced areas), the experts showed special interest in possible applications of this scheme by other countries of the region. The appropriateness of applying such selected technologies in other countries was also discussed. Examples of R and D co-operation of KAIST with other organizations in the region were presented and an increase of such co-operation was welcomed.

Particular attention was drawn to employment matters. Even if technological innovation may reduce employment, new employment will be created in other areas through higher productivity. Thus, those whose jobs are affected may be absorbed in other activities, and skill levels may be improved. It was recommended that besides the quantitative aspect of employment, which is usually considered, governments should to a greater extent take into account quality aspects of employment, i.e., consider employment creation for high skill and professional labour outside traditional employment areas such as public services. Quality improvement of labour will also be required on the enterprise level. It was observed that at present indoor training schemes hardly exist in SSIs, and that outdoor training facilities for workers are insufficient. Entrepreneurs should put more emphasis on improved training.

Establishment of entrepreneurial strategies for SSIs also received particular attention. On the basis of experiences in developed countries and considering market potentials in specific areas, it was recommended to promote the identification of unique features of enterprises in such fields as labour force skills, products, marketing, production technology or other areas. The

strengthening of these unique features will contribute to improve the business outlook of SSIs.

(b) Proposals and recommendations

It was suggested that at national level particular attention should be given to:

- identification of unique features of SSIs;
- human resource development;
- continuous improvement of technologies applied in traditional SSIs aiming at increased productivity and product quality as well at reduction of stress on the labour force;
- increase in SSI-related research and development activities in new technological areas (e.g. computer-aided manufacturing and, at a later stage, computer-aided design);
- improvement of access to technology for SSIs;
- improvement of standardization and quality control;

At the regional level particular attention should be drawn to:

- promotion of R and D co-operation in SSI-related areas among corresponding institutions;
- utilization of consulting and industry support capacities of other countries in the region;
- increased exchange of information among support institutions.

8. Development and strengthening of small-scale industries in rural areas

(a) Key issues identified and reviewed

(i) Decentralization of SSIs

The experts observed that dispersal of small-scale industries from metropolitan areas to rural areas should follow an integrated area development approach. In other words, rural industries should be created by the local people and not simply dispersed with little regard to economic viability. It was felt that the cost of basic infrastructure requirements was a problem when installing large industries in rural areas and that consequently local people could become economically and financially heavily dependent on such large industries. However, establishing SSIs in rural areas was conducive to the development of a good business and industrial environment.

The developing countries in the region have not been able to solve the problems of agglomeration of SSIs in metropolitan areas, notwithstanding policy measures to induce the location of SSI's in non-metropolitan areas and to secure a balanced development. Among the many efforts made are financial incentives, creation of industrial estates under revised and less costly schemes and promotion of incentives of a general nature. In view of the

disadvantages such as lack of infrastructure, skilled manpower and markets, government measures have often not had the expected results. Traditionally, the industrial processing of location-specific agricultural or mineral raw materials, and skill-intensive industries and handicrafts which have their basis in the cultural heritage are dispersed in rural areas. These deserve promotion and upgrading.

(ii) Entrepreneurship development

It was stressed that entrepreneurial activity has a direct bearing on a country's industrial development pace. The critical factors limiting economic growth in developing countries are compounded by lack of entrepreneurs; observations suggest that even where financial resources are available and adequate, indigenous entrepreneurs are not forthcoming. The development of entrepreneurs received insufficient attention because it is often believed that entrepreneurs are born, not made. However, some successful programmes in Asian countries show that with the right type of incentive and support mechanisms a new generation of entrepreneurs can be developed. It was felt that in most cases efforts were sporadic and haphazard. It was observed that a common problem in trying to promote SSI development in developing countries is finding entrepreneurs for manufacturing enterprises. The very existence of government agencies that make information on industrial profiles and other business opportunities available does not seem to be sufficient to encourage entrepreneurship. There is a need for promotional campaigns to identify entrepreneurial talent and foster its development, especially amongst neglected population groups and in rural areas.

(b) Proposals and recommendations

A possible solution which was recommended would be to adopt a package of incentives and a programme for the creation of the complementary conditions including the development of infrastructural facilities.

To enable self-sustained growth and creation of SSIs in rural areas, entrepreneurs in rural areas should be promoted with an integrated package of assistance through concerted government efforts. Entrepreneurship development programmes should precede or go hand in hand with decentralization programmes so as to enable the emergence of a new generation of rural entrepreneurs.

Education being the major factor, followed by other promotional measures and incentives, important changes should be introduced in the educational system starting with basic education, to make people more business-minded and industry-oriented. Moreover, it was suggested that governments could introduce entrepreneurial training schemes at the provincial level along the lines of existing courses in developed countries and in several Asian countries where people (particularly the unemployed) are educated free of charge by Chambers of Commerce, business associations, etc.

COUNTRY SUMMARIES OF SSI DEVELOPMENT PROGRAMMES^{1/}

Burma^{2/}

As part of a twenty-year development perspective plan, agro-industries are to be set up in the countryside to help transform the economic basis of the country, which is largely agricultural. Co-operative handicraft also receives special attention. More than 90 per cent of industrial employment in Burma is found in establishments with less than 10 workers, and the role of SSI in both these elements of the plan will obviously be a central one. The small industry sector is to a large extent organized in co-operatives now, over 600 of these having been established so far. Most co-operatives produce basic consumer goods like clothing and food.

SSI support is largely the domain of the Ministry of Industries and the Ministry of Co-operatives. The main objectives of SSI development plans are to establish new industries giving priority to export-oriented industries, industries realizing a high rate of returns within short gestation period and industries based on domestic raw materials, in line with regional development plans.

Although training programmes are provided by several ministries, and also by co-operative training schools, most assistance is channelled through the Ministry of Co-operatives. Where needed, the ministry provides raw material, machinery and spare parts. Loans are provided through the Myanmar Economic Bank on the basis of recommendations from the Ministry. The Cottage Industries Department (CID) of the Ministry is responsible for technical assistance and project preparation. With UNDP/ILO assistance, the "Small-Scale Industry Development in the Co-operative Sector" project has resulted in the creation of several small firms processing wood and agricultural products. The "Promotion of Small-scale Industry in the Co-operative Sector" project, supported by the Federal Republic of Germany, aims at upgrading technical services and technology and has a.o. resulted in the establishment of a co-operative technical consultancy and training unit.

China^{3/}

Underemployment in the countryside and the drift of the rural population towards the cities have been major reasons for the emphasis on industrial development at the local level in rural areas. "Rural and township industries" include both co-operative establishments run by rural collectives and family-owned cottage industries. Most enterprises rely on local markets

^{1/} Compiled on the basis of country papers presented at the expert group meeting at Seoul.

^{2/} Based on "Some aspects for the development of small-scale industries in Burma" by U Khin Aung, Cottage Industries Department, Ministry of Co-operatives, Socialist Republic of Burma.

^{3/} Based on "Rural and township industry - Key to China's development" by Lin Zixin, consultant of China's Research Centre for Economic, Technological and Social Development.

and use simple technologies, but the range of products is very wide. Funds are usually provided by the families or the collectives themselves, but the Government now also provides tax reductions and low-interest loans. In recent years, the traditional strong role of central planning has made way for a greater attention to entrepreneurship. Linkages between large and small industries are now being strengthened, with state industries taking the lead in subcontracting arrangements with rural and township industries. Major challenges facing policy-makers now are:

- Outdated technology and equipment, leading to low product quality and high energy and raw material requirements;
- Lack of overall co-ordination in the SSI sector which has led to overproduction of a number of items;
- Damage to the ecosystem caused by former decentralization policies which indiscriminately moved polluting industries to the countryside.

A central role in improving the performance of rural and township industries is played by the State Science and Technology Commission. It emphasizes the introduction of appropriate technologies which have a potential for quick returns. Sharing the experience gained in successful projects with other enterprises is encouraged. UNIDO is involved in a large number of technology improvement projects. China itself has become a major source of technical assistance to other developing countries.

India^{1/}

The small industries sector in India includes those manufacturing and servicing units whose investment in plant and machinery is below US \$0.3 million (US \$0.37 million if they are ancillary units) The Village and Small Industries (VSI) sector (as it is called in the national development plans) comprises traditional khadi (handmade textile) and village industries and handicrafts and modern small-scale industries. The traditional subsector is distinguished by highly decentralized rural and semi-urban location, a household-based production system, and unstandardized, even unique products. These industries use simple tools and mostly manually operated equipment and produce mass consumption and artistic handicraft articles both for home and foreign markets. The small-scale industries subsector which came into being after independence is characterized by technological and organizational superiority, greater product sophistication and an urban orientation.

The village and small industries constitute an important segment of the economy. Their contribution to employment is next only to the agricultural sector. The sector is characterized by self-employment; employment in the VSI sector amounts to 80 per cent of total industrial employment. VSI accounts for approximately one-third of total exports. In value added terms it generates 51 per cent of the total for the industrial sector.

The development strategy for village and small industries focuses on:

^{1/} Based on "Development of small industries in India - Policies, programmes and perspectives" by G. Venkataramanan, Joint Secretary, Department of Industrial Development, Ministry of Industry and Company Affairs, Government of India.

- (i) Integration of promotion programmes for the sector with other area development programmes which would also correct the regional imbalance;
- (ii) Organization of production and distribution functions with a deliberate bias towards the VSI sector in such a way as to create opportunities for fuller and additional employment on a dispersed and decentralized basis; and
- (iii) Creation of a suitable organizational base at various levels to implement the development of programmes for the sector.

It is emphasised that Government policy should ensure that the sector acquire sufficient vitality to be self-supportive and that its development is integrated with that of large scale industries. Co-operatives have been given special encouragement. Infrastructural facilities (e.g. industrial estates) were also made available. Special attention has been paid to the export promotion of small-scale industries products under special reservation schemes.

Policy support measures can be broadly divided into:

- (i) Measures for rapid growth of these industries within the broad policy frame; and
- (ii) Protective measures to prevent unfair competition from medium and large industries and from imported goods and services.

Measures designed especially for the VSI sector include consultancy services to advise potential investors on industrial trends, support measures, credit, etc., and also the preparation of feasibility studies, special arrangements including the creation of buffer stocks of scarce imported raw materials, the provision of credit at reasonable rate of interest, fiscal and financial incentives/concessions, export incentives, infrastructural facilities, marketing and export assistance, establishment of an early warning and remedial measures system to assist enterprises in difficulties etc. Specialized institutions at the all-India and regional level have been established for the purpose of encouraging mergers of such firms with healthy firms.

Protective measures include the reservation of certain production lines, the freezing of production capacity in certain large industries, import restrictions on selected manufactured goods; some SSI products also receive preferential treatment when government supplies are purchased. Preferential treatment has improved the production, employment and export shares of the cotton, leather, cottage matches and soap industries.

With the rapid increase in production and the diversification of the industrial structure, the need for modernization and up-dating technology to face growing competition from the "organized" industries and to raise the productivity and earnings of the SSI sector has begun to receive attention. Special credit facilities now provide equity, venture and working capital on a priority basis for modernizing SSI. Since nationalization in 1969, the banking sector has been obliged to give priority to VSI. Credit to the sector has e.g. gone up from US \$2,194 million in 1979 to US \$3,720 million in 1982. Entrepreneurship development has received considerable emphasis from seventies onwards, beginning with the Fourth Plan, and seeks to motivate and stimulate

the educated unemployed potential investors among the rural rich, non-resident Indians, scientists, technologists, engineers, etc.

As part of the strategy for the development of ancillaries, the concept of nucleus plants has been evolved in 1980 in order to generate integrated industrial development in backward areas with backward and forward linkages in the shape of ancillaries and small-scale industries. The realization of this concept should lead to spatial dispersal of economic activities and thus to higher employment and higher per capita income of people in the identified potential locations. As part of the overall strategy for correcting regional imbalance, a deliberate attempt is being made to attract industrial investment in specially identified backward areas and 'Zero Industry Districts' through a system of fiscal and financial incentives, and facilities such as term lending at a reasonable rate of interest, long maturity periods, tax holidays, investment and transport subsidies, consultancy services, subsidized infrastructural facilities etc. These schemes are expected to attract medium- and large-scale industries which in turn would stimulate the growth of small industries and other business in the areas through linkages.

Paucity of reliable and up-to-date data make it difficult to attempt temporal and spatial comparisons of progress achieved by the sector. During the first two Five-Year Plans the main emphasis was laid on agricultural improvement and hence no specific information is available about the targets and achievements of the VSI sector. Data is available from the Fourth Plan onwards. Progress can be summarized as follows:

Years	Employment (Million persons)	Production (US \$ million)	Exports (US \$ million)
1973-74	17.64	11,333	700
1979-80	23.36	27,948	1,860
1984-85	28.62	49,307	3,829

Most employment growth was recorded in the modern SSI and khadi/village industries subsectors. Judging from production trends, while all the subsectors have registered a substantial increase in the output, the performance of khadi and village industries stands out. The export performance of the handloom, silk, handicrafts and coir (coconut fibre) industries has been quite impressive, although their products are generally intended for the indigenous market. The modern SSI, although suffering from a high rate of closures, has also grown considerably. The share of SSI in the total production of cotton textiles, e.g., has gone up to 35 per cent. Although unintended (policies protect the handloom sector), the establishments using powerlooms have grown phenomenally.

In the early stages of development, import substitution was stressed and the VSI sector has played a crucial role in achieving this objective. The sector now manufactures consumer and capital goods like textile, leather goods, washing soap, safety razors and blades, stationery, consumer electronic and electrical goods, farm tools, bicycles, sewing machines, electric fans, water pump, cameras, etc. As a result of government policy and support

measures, import of most of these goods has been stopped and industry now serves both domestic and export markets.

In India, responsibility for the development of village and small industries is shared by the regional/local promotional agencies set up by the provincial Governments and all-India bodies established by the central Government. Among the national level institutions, the Small Industries Development Organization (SIDO) deserves special mention. SIDO has been conceived and set up as a multi-purpose development agency. The most important organizational structures for the development of small-scale industries under SIDO are the network of Small Industries Service Institutes (SISIs) and extension centres and the National Small Industries Corporation.

Generally, regional-level promotional institutions confine their activities to their own area, meeting specific area needs. While some of these bodies have clearly demarcated and specialized functions, others are designed to perform multi-purpose functions.

There has been a gap between the promise held by these programmes and organizations and their performance. Some factors negatively influencing performance have been large-scale natural disasters, lack of resources and managerial capabilities and the very fast population growth. The exodus to the cities has not been stopped and the absence of a well-developed infrastructure in the countryside has caused modern VSI to concentrate in the large towns. Although credit for SSI amounts to 30 per cent of all finance provided by banks, the larger, more modern SSIs have benefitted disproportionately. The smallest, traditional firms suffer from inadequate finance and have to borrow from private money lenders charging exorbitant interest rates. Technological obsolescence, low productivity, irregular supply of raw materials, lack of organized marketing channels, unorganized production operations and a low level of human skills are still major problems.

There is, however, a growing body of experience with SSI development and decentralized all-round planning taking into account the demands of social justice. The growing body of well-educated young entrepreneurs can benefit from this experience; and especially in rural areas there seems to be wide scope for new small industries processing farm and forest products.

Indonesia^{1/}

In Indonesia, SSI comes under the jurisdiction of the Directorate General for Small Scale Industries, Ministry of Industry. For policy purposes, a distinction is made between the following main SSI groups:

- food
- textile and leather
- chemicals and construction materials
- general handicraft (including sports goods and musical instruments)
- metalworking (including automotive components and electronics).

^{1/} Based on "The development of small-scale industry in Indonesia with emphasis to the Fourth Five-year Development Plan" by Binaldjemur Danuhadiningrat.

In 1984 the SSI sector comprised over 1.5 million enterprises employing 4.6 million workers; production was valued at more than Rp. 6.5 billion. The main problems SSI faces are lack of technical and managerial know-how, lack of entrepreneurs, insufficient information for small businessmen on all major aspects related to the operation of an enterprise and unco-ordinated assistance to SSI. Small industry development programmes attempt to remedy these shortcomings. At the same time, these programmes should create additional employment (186,000 jobs per year during the present planning period), substantially raise SSI value added and lead to the progressive clustering of SSI (6,000 SSI clusters are expected to function by the late 1980's). SSI is also expected to play a role in achieving a more equitable distribution of development and incomes throughout the country.

The formulation of policies for SSI development is subject to some general principles:

- policies should be integrated in a general development policy and linkages with other industries and economic sectors must be strengthened;
- the various types of SSI - traditional handicraft and modern - each have a role to play;
- both export markets and basic domestic needs should be served;
- special attention must be paid to R and D;
- modern SSI should support the development of the machinery and electronics industry.

For the development of certain small industries, reservation schemes have been devised. Generally speaking, industries coming under these schemes must be labour intensive, meet mass consumption needs, have (a strong potential for) linkages with other industries or economic sectors; some industries with export potential also come under these schemes.

The long-term goal of assistance programmes is to enable SSI to stand on its own feet - Government, in other words, intends to reduce its involvement in the industry as soon as this is feasible. To strengthen SSI, the following programmes are available:

- entrepreneurship development;
- feasibility studies;
- training and seminars covering all aspects of industry and business operations;
- technical services, including improvements in products and in production methods;
- financial support;
- provision of particular inputs and machines;

- assistance in establishing sub-contracting relationships such as "foster-father" agreements;
- examination of linkage potentials;
- provision of infrastructure (a.o. service facilities, mini-estates);
- export promotion.

The actual content of these programmes is adapted to the specific characteristics of an industry (traditional/modern).

Malaysia^{1/}

Small-scale enterprises dominate the industrial sector in Malaysia in terms of establishment numbers and employment. In 1981 there were 15,883 manufacturing SSI's employing 228,124 workers. These enterprises represented 36 per cent of fixed assets and 30 per cent of value added in the non-agricultural sector. Malaysian SSIs are typically very small in size and utilize traditional technologies to produce a very limited output for a small market. Their access to institutional credit and more up-to-date technologies is limited, skilled labour is scarce in the sector, management methods, market knowledge, premises and other infrastructure are inadequate. Linkages with larger industries are scarce.

In an effort to improve the performance of the SSI sector, the Malaysian Government has provided a variety of incentives. Like the larger enterprises, SSI's enjoy reduced location tax, pioneer states etc. Moreover, SSI's are exempted from paying sales tax on goods sold if the value is less than M\$ 100,000 per annum, and from paying import duties on machinery and raw materials not available locally. Various tax deductions on borrowed capital are available.

The existing provisions have, however, not provided a neutral regime with respect to small and large-scale enterprises. The larger, more capital-intensive enterprises have received substantially stronger incentives. Moreover, the various support programmes for SSI were not co-ordinated and hence not very effective. Following a 1982 World Bank report, assistance to SSI has been grouped in four integrated programmes:

- Financial assistance
Under this programme, commercial banks must make at least 12 per cent of their loans available to small-scale enterprises; 50 per cent of the total must be used for small, unsecured loans under the Special Loan Scheme. Under this loan scheme, backed up by credit guarantees, loans up to a maximum of M\$ 50,000 are made available at a subsidized interest rate of 7.5 per cent per annum.
- Project development
Assistance takes the form of feasibility studies, entrepreneurial development, market promotion and the provision of industrial sites.

^{1/} Based on "Country report of Malaysia's small-scale enterprises development" by the Small-scale Enterprise Division, Ministry of Trade and Industry.

- Training
Areas covered include courses in management, accounting, salesmanship, marketing, and also advisory services on business practice and the dissemination of business management information.
- Technical assistance
To overcome technical problems and to upgrade existing technology, SSI's receive advice on the choice of proper technologies and equipment and on quality control.

The main institutions involved in small-scale enterprise development are:

- Small-Scale Enterprise Division (SED), Ministry of Trade and Industry
Set up in 1981, it is responsible for the promotion of small enterprise in line with national economic policy. SED identifies investment opportunities, provides incentives, advice and information to small entrepreneurs and fosters interest in small enterprise. SED is also responsible for the co-ordination of the activities of the various other agencies.
- Malaysian Development Bank (BPMB)
The Bank, which is supported by the Government, provides credit and other assistance to small bumiputra (domestic) entrepreneurs.g. buying stock.
- Credit Guarantee Corporation (CGC)
CGC provides backing to commercial banks which supply credit to small firms. This makes it possible to finance viable projects for which no collateral is available.

Other agencies which also provide support to SSI include the Malaysian Entrepreneurship Development Centre, the Malaysian Industrial Development Authority, The Malaysian Industrial Development Finance Company, the National Productivity Centre and the Standard and Industrial Research Institute of Malaysia.

Special programmes for small-scale enterprise development include:

- Bumiputra Small Enterprise Development Project.
To strengthen the position of the bumiputra (domestic) entrepreneur, the main Malaysian agencies involved in SSI support have started this programme with World Bank assistance in late 1984. To date, some 100 projects, involving loans to an amount of over US \$10 million have been approved. Assistance also takes the form of technical advice, management training, marketing, etc.
- Interfirm Comparison Programme
The purpose of this project is to determine the strong and weak points of particular firms by comparing business data. Sessions are held with small entrepreneurs to disseminate and exchange findings. Data are processed with the assistance of the University Pertanian Malaysia. The NPC is also involved in implementation; co-ordination is in the hands of SED.

- **Integrated Marketing Programme**
Co-ordinated by SED, this programme was initiated in late 1984 and involved most of the major support agencies. Marketing assistance is at present being given to some 75 small firms, and also includes quality control, and management, financial and technical services.
- **Nursery Schemes**
Under these schemes, fully equipped factory units have been provided at several places by SED and BPMB. Units are made available for a period of five years. By late 1985, 27 enterprises were thus started. It is planned to extend these schemes to other areas.
- **Subcontracting Exchange**
Still in its planning stage, the objective of this scheme is to assist small enterprise in establishing linkages with larger industries.
- **Reservation Schemes**
Under these schemes, which so far cover 46 items, production of certain commodities is reserved exclusively for SSI. No expansion of larger industry production of these commodities is allowed.
- **Government Procurement**
SED, co-operating with other Government bodies, co-ordinates Government tenders to SSI. To date, 8 items have been identified which will be supplied by small firms through 4 "umbrella" companies managing subcontracts with some 100 SSIs.
- **Technology and Resource Display Centre (see also p.44/45)**
- **Industrial Estates**
In several areas throughout the country, sites have been made available where special facilities will be available to small enterprise. This programme is still in the planning stage.
- **Kedah Regional Development Authority Function Centre**
This centre, in which SED is also involved, provides common facilities to small local producers. The Centre also provides marketing and other assistance.

Nepal^{1/}

In Nepal, the industrial sector accounts for only 5 per cent of GDP, the country being mainly agricultural. Of the 5,000 registered manufacturing units in the country (almost all of them cottage and small-scale industries with less than NRs. 2 million in fixed assets) the majority processes agricultural products (grain mills, oil mills). If the estimated 400,000 rural cottage industries are included, over one million Nepalese work full-time or part-time in an industrial occupation. Industrial development in Nepal has been constrained by limited physical, financial and human resources, a small domestic market with low purchasing power, high costs of essential imported inputs and exports due to a land-locked position and competition from India. Shortage of spare parts and raw materials, power cuts etc. have led to temporary closure of almost half of all establishments.

^{1/} Based on a paper by Mrs. Ambika K.C., Deputy Director, Department of Cottage and Village Industries, Kathmandu.

Support to small-scale industry partly takes the form of tax exemption. Some examples: Tax holidays ranging from two years (for essential consumer goods producers) to six years (for manufacturing enterprises) are given; these can be extended if sufficient value added is generated by the enterprise in question. Import duties are at only 1 per cent for equipment, spare parts and raw materials which are not available in sufficient quantities within the country. Industrial enterprises are exempted from excise duty for periods ranging from three to five years. Foreign exchange facilities are available for imports of essential equipment, services and inputs.

Various support institutions have been established. The most important are:

- The Department of Industry
The Department collects information on industries, registers and licenses industries and gives out recommendations for the provision of facilities. It also acts as the secretariat of the Industrial Promotion Board.
- The Industrial Services Centre
The Centre disseminates information on investment potential, industrial policies and incentives, conducts feasibility studies, advises on modernization, expansion and production improvement projects, conducts management training programmes, etc. The Centre also manages a number of industrial estates which have mainly been established to accommodate small industries.
- The Nepal Industrial Development Organization
This organization provides financial assistance and also participates financially in new industries. Loans up to 65 per cent of fixed assets are available with the assets serving as collateral. Payback periods are a maximum of 15 years, interest ranges from 12-17 per cent.
- The Agricultural Development Bank
Primarily meant to serve agriculture, the Bank also extends credit to small-scale rural industries. Commercial banks are now obliged to invest in cottage and small-scale industries as well.
- The Security Marketing Centre
Encourages investment in industry and systematizes the marketing of shares etc.
- The Trade Promotion Centre
Promotes Nepalese exports. It offers information on customs and transit and assists exporters to find international market outlets.
- The Department of Cottage and Village Industries
Apart from registering and recommending cottage industries for assistance, the Department provides technical training, provides promotional services and manages some textile and furniture production units. Regional and branch offices have been established in various parts of the country.

With IDA assistance, a major SSI support project was started in 1982. The Cottage and Small Industries (CSI) project focuses on textiles, metal working, forest products and agricultural processing, but other industries are

not excluded from assistance. The target is to assist 2,520 industrial ventures and 53 commercial enterprises over a period of three years, stressing export-oriented activities. Special support is given to commercial banks supplying credit to SSI, yet only 22 per cent of the credit made available has gone to rural areas. Training programmes were set up, and the Cottage Industries Development Board was activated to provide extension services and various other forms of assistance in rural areas. The Handicraft Sales Emporium both procures and distributes inputs and organizes marketing. Monitoring and evaluation are in the hands of the Industrial Services Centre; overall co-ordination is provided by the Ministry of Industry.

Pakistan^{1/}

In Pakistan, SSI (defined as consisting of units with less than Rs. 10 million in fixed assets) accounts for 85 per cent of employment in the industrial sector (3.95 million workers); its share of value added, however, is only 30 per cent. To strengthen the position of SSI, Provincial Small Industries Corporations (SIC's) were established in various regions of the country some 10 years ago. These SIC's provide services, financial and training assistance to SSI, partly in co-operation with aid donors. They also manage a number of estates for small industries. In 1980, an estimated 81,000 SSIs had been served in one way or another by SICs.

Under the Sixth Five-Year Plan (1983-1988), small-scale industry has received special attention. The aim is to make SSI, together with agro-industries, the leader of export growth. A series of policy measures has been formulated to improve the position of SSI. These include:

- provision of credit at concessional rates and expansion of the role of the Small Business Finance Corporation;
- expansion and improvement of existing training/service centres;
- special attention to SSI in the design of industrial estates;
- stimulation of subcontracting;
- the development of special programmes to improve know-how and upgrade technologies, information dissemination, quality control and marketing through Small Industries Corporations and Boards;
- abolishment of licenses for most types of small enterprises.

One example of support to SSI at the provincial level is the Small Scale Industries Wing of the Government of Baluchistan, which has been very active in the development of industries based on local resources. The Wing has established new small-scale industrial estates with necessary infrastructure facilities and promotes local crafts. It helps the small-scale and cottage units by supplying trained manpower through its own institutes. Marketing facilities are also provided: various sales outlets have been established in larger cities. The Wing advises on management and helps the industries to

^{1/} Based on "Country paper on Pakistan with special reference to Baluchistan" by Anwar-Ul-Haque, Director of Small Industries, Government of Baluchistan, Quetta.

obtain credit facilities from the relevant agencies. New investors receive advice, are helped to identify industrial projects and are assisted in the acquisition of facilities, licences and credit.

Philippines^{1/}

In the Philippine Development Plans of the past decade, SSI support has ranged from the financing and marketing aspects of small industry operations to the development of entrepreneurial skills and managerial knowledge in the SSI sector. The Government infrastructure for the development of SSI includes the National Economic and Development Authority, the Central Bank, the National Science and Technology Authority, the Ministries of Agriculture and Natural Resources, the Ministry of Finance, the Institute for Small-Scale Industry, University of the Philippines - with the Ministry of Trade and Industry and its agencies (Bureau of Small Scale Industries, National Cottage Industries Development Authority) taking the lead. Support sometimes involves an umbrella organization like the Commission of Small and Medium Industries (CSMI). Some 40 organizations in the private sector participate in financing schemes like the Industrial Guarantee Loan Fund.

Surveys indicate that the number of cottage industries (defined as having less than 5 employees and less than P 250,000 in assets) was around 82,000 in 1985, and the number of small and medium industries around 28,000 - small industries having 5-99 employees and up to P 2.5 million in assets. Small- and medium-scale industries were estimated to employ 1,251,700 workers in 1983 or 61.2 per cent of the total employment of the manufacturing sector in the Philippines. In the 1983-1985 period, it was observed that the SMI sector was not as strongly affected as the large-scale industries by the economic crisis: employment losses were much smaller. With an average annual growth rate of 21.0 per cent over the period 1967-1978, SSIs registered the fastest growth among the four sectors. 1983 value added estimates are placed at P 34,840.1 million. On the average, net production contribution of SSIs was estimated at P 1.3 million per firm in 1983, as compared to an average contribution of P 179.0 thousand in 1967.

Further developing the SSI sector entails special attention to the following:

- A shift in emphasis from financing fixed assets to financing working capital, which would reduce risks and be more attractive to commercial banks;
- improving access to funds for small and medium enterprise. This includes simplifying collateral requirements and borrowing procedures;
- the establishment of a forum for co-ordination and the exchange of information and experiences between institutions, e.g. a common data bank for all SMI-oriented activities;

^{1/} Based on "Small-scale industry development in the Philippines" by Melito S. Salazar, Jr., Director, University of the Philippines Institute for Small-Scale Industries (UPISSI) and Associate Professor, U.P. College of Business Administration.

- improved data collection to better interpret the situation of and trends in the SMI sector;
- research on legal protection offered to the SMI or the lack of it;
- impact studies on the extent of the assistance delivery system, its quality, its successes and failures;
- identifying unrecognized needs of and incentives and opportunities for the sector.

The Philippines Development Plan 1984-1987 points to the need for long-term solutions to the problem of development. Entrepreneurship development will have to be a basic element in formulating these solutions.

The educational system should supply part of the answer to entrepreneurship development. The system should be reoriented to motivate graduates to venture into business. The Ministry of Education, Culture and Sports (MECS) has incorporated entrepreneurship courses in the high school curriculum and the Philippine Association of Colleges and Schools of Business (PACSB), the Small Enterprises Research and Development Foundation (SERDEF) and the UPISSI have initiated the EDCEL Project with this purpose. It will centre on three major activities: curriculum development, instructional materials development, and training of faculty members who will handle the entrepreneurship courses.

Project spin-offs are the setting up of Institutes of Small Business (ISBs) in the regions, the setting up of business ventures by the students and the teachers, and the start of consultancy work by the teachers for students and other entrepreneurs. Schools that wish to stimulate local entrepreneurship and small industry development may set up ISBs. Thus the local community is mobilized "from within" without the need of huge capital outlays and large overhead costs. As ISBs are an outgrowth of the school curriculum, their life-span will tend to be longer than that of most private associations set up for the purpose. These special ventures give the students more business experience than an ordinary practicum can offer. Teachers can start their own ventures or go into consultancy.

The main objective of the Small Enterprise Development (SMED) Project of the NTI, supported by the US Agency for Industrial Development, is to identify private groups and associations which can serve as effective delivery channels of extension service to their own members. The Philippine Chamber of Commerce and Industry (PCCI) as the biggest grouping of entrepreneurs in the country is the main counterpart of SMED in the private sector. Activities include the development of various types of industry associations and a national federation of such private organizations, marketing assistance and the establishment of small business institutes in various provincial centres which may be strengthened and developed into centres of management and entrepreneurship. It is hoped that after a five-year period the private sector will be able to continue these services without outside support.

To determine the usefulness and extent of the assistance programmes for the entrepreneurs, the Philippine Institute for Development Studies, the Industry and Utilities Staff of the National Economic and Development Authority and the University of the Philippines have started a series of impact studies. Such studies should be formulated with the needs of the

entrepreneurs in mind. Research fellowships for entrepreneurship and small industry development will be made available and will be complemented by research involving national and international agencies. In general, more attention will be paid to appropriate information for entrepreneurs. The mass media will be stimulated to give better information on small enterprise to the public, thus creating a more favourable social environment.

Sri Lanka^{1/}

The main problems which confront the small and medium industries sector in Sri Lanka are:

- Inability to find markets for products;
- Lack of quality consciousness;
- Absence of research on production processes and the use of improved technology;
- Inadequate financial resources;
- Paucity of trained managerial and supervisory staff;
- Lack of facilities and or funds to train the lower categories of staff;
- Absence of a framework to achieve co-ordination between supplier companies in the small and medium industries sector and large buyers.

Present industrial policies stress location of industries in the countryside, mass participation in the process of industrialization and the avoidance of monopolistic concentrations in industry. These general principles favour the development of SSI. More specifically, SSI is stimulated through:

- abolishing cumbersome administrative procedures associated with licensing and foreign exchange allocation;
- preferential tax rates and other fiscal incentives;
- expansion of credit facilities and encouragement of investment in small and medium industries;
- promoting the export-orientation of small industries;
- establishing and improving training facilities for entrepreneurs, managers and craftsmen, design and craft centres;
- improving linkages with large industries;
- technical support;
- marketing assistance.

^{1/} Based on "Country paper Sri Lanka" by Bandula S. de Silva, Director of Small Industries, Colombo, Sri Lanka.

The main institutions involved in SSI development are the Sub-Contracting Exchange and the Rural Industries Approval Committee.

The Sub-Contracting Exchange (SCX) was established as a section of the Marketing Division of the Industrial Development Board in 1981 with the objectives of:

- (a) Assisting small and medium scale industries in obtaining knowledge of potential public procurement or private orders;
- (b) Communicating to large enterprises the production capabilities of potential small and medium scale industry sub-contractors;
- (c) Assisting small and medium industries in meeting required quality standards and delivery schedules.

To achieve these objectives a nucleus of an organization has been formed, consisting of an engineer-in-charge, a technical assistant and a number of development officers. The activities conducted by the SCX to date consist of an analysis of product requirements of large institutions and identifying potential products for manufacture by SMI. In expending SCX activities some serious problems must be overcome:

- The SCX has no authority to canvass industrialists/corporations and Government departments to buy from small industrialists through SCX;
- The SCX has no authority to request firms to supply information to establish large industry demand for SSI products;
- Lack of market information therefore prevents SCX from satisfactorily briefing small suppliers;
- Product information is not supplied in time by small enterprises;
- Many small enterprises are unable to deliver products of a satisfactory quality or to keep delivery schedules; suppliers are often even unable to negotiate contracts without SCX guidance.

A better identification of current and potential markets (and marketing procedures etc.) would be needed, and such information would have to be passed on to the producers. State enterprises and departments could furnish SCX with lists of items which they normally import but which could be supplied by small or medium size firms or by establishing such firms. SCX could also negotiate on behalf of small enterprise. Finally, small and medium scale firms could also be assisted in raw materials and components purchases through the State Trading Company.

Commercial banks in Sri Lanka, although expected to play a role in development banking, have kept their traditional banking orientation. Even the Peoples Bank, founded to cover rural banking needs, shifted to the traditional commercial banking attitude, and the available industrial credit does not flow to the smaller enterprises. The Government has now set up Rural Development Banks and has introduced development banking concepts in order to help the development-oriented small enterprise.

The Rural Industries Approval Committee is an interinstitutional committee which examines applications for rural industrial ventures, and recommends them for approval by the Ministry of Rural Industrial development. Approval entitles enterprises to all incentives offered by developing schemes. The Committee also screens small-scale projects involving foreign investment. For the future development of SSI, the Ministry of Rural Industrial Development proposes to establish a "Rural Industries Development Corporation" in order to provide an integrated approach for the development and promotion of rural industries. Its functions include advisory services, financial assistance, guidance, standardization, quality control, marketing services, etc. It will also mobilize resources both from public and private sectors and participate in industrial ventures by buying equity shares.

The Ministry also plans to establish a "Small Industries Engineering and Allied Services Board". This organization will be responsible for:

- (the advancement of) testing, investigation and research;
- technical advice;
- technical training;
- preparing and disseminating technical information;
- establishing engineering workshops, testing facilities, etc. in outlying areas;
- fostering the establishment of other organizations involved in industrial research and industrial activity;
- establishing contacts with manufacturers and suppliers of industrial goods.

Finally, the system of export incentives and tariff protection should be reviewed. Improved measures are needed to structure incentives and tariffs on the basis of comparative advantage and local value added. The recent recommendations made by the Presidential Tariff Commission and implemented through the budget for the year 1985 have provided some relief by way of increased effective protection to a considerable number of small industries which were underprotected so far. Levels of effective protection, however, change over time with changes in other policy instruments. Therefore, the Government is now considering to review the tariff levels periodically in order that protection will continue to be based on dynamic comparative advantages and domestic value added.

Thailand^{1/}

In Thailand, SSI establishments are generally defined as having fewer than 50 employees and less than 5 million baht registered capital. The vast majority of industries in Thailand belongs to this category. Small industries, like other industries, are heavily concentrated in and around

1/ Based on "Country paper, small industry development in Thailand" by Padetpai Meekhun-iam, Director of Planning Division, Department of Industrial Promotion, Ministry of Industry, Bangkok.

Bangkok, where local and export markets can be tapped, imports and raw materials are readily available and services and infrastructural facilities are of good quality. The great majority of SSIs process natural resources; among these, rice mills are the most common type of enterprise.

SSI in Thailand suffers from a shortage of good managers and skilled manpower, shortage of capital and insufficient access to financial institutions, lack of technical and marketing skills, insufficient supply of inputs of a reasonable quality at prices which the small entrepreneur can afford.

The current Fifth Industrial Development Plan focuses on small industry as the foundation for industrial development. While developing SSI, the decentralization of industry will also be stimulated. Dispersion to provincial areas will be harmonized with the regional urban development plans. The following specific measures have been initiated:

- Development of a credit extension system and institutions for small-scale industry and industries in outlying regions;
- Improved research and development of production technology and management techniques. In addition, the Ministry of Commerce, Ministry of Industry, and Ministry of Science and Technology are to co-operate in the expansion of markets for small-scale industry;
- Promotion of subcontracting between small-scale industry and large-scale industry;
- Accelerated establishment of industrial zones in various provinces;
- Accelerated development of industrial zones along the Eastern Seaboard and industrial estates in regional areas. The suitability of other coastal areas for the establishment of industrial zones is being explored.

In addition to these measures, supplementary measures include revised tax structures etc. The Sixth National Plan (1987-1991) will continue to focus on small, rural industries.

Much of the Government's small-scale industry development policy is implemented and co-ordinated through the Department of Industrial Promotion (DIP) under the Ministry of Industry. The activities of the department are organized as follows:

- The Planning Division co-ordinates programmes and activities of all the divisions, undertakes techno-economic surveys and prepares feasibility studies for industrial projects, especially those that are viable in rural areas.
- The Handicraft Promotion Division offers training courses in handicrafts production and assists producers to improve design and quality and helps them to market their products.
- The Industrial Productivity Division or Thailand Management Development and Productivity Centre (TMDPC) conducts seminars and training courses

in modern business and management practices. Consultancy services are offered in marketing, management, production and quality control.

- The Cottage Industries Division provides training and extension services in cottage-type activities to interested parties throughout the country. R and D activities are undertaken to develop labour-saving tools or processing methods, to improve quality, and to better utilize domestic raw materials.
- The Textile Industry Division organizes training courses and renders consultancy services. It also conducts R and D activities and has a testing laboratory.
- The Small Industries Finance Office offers low-cost, long-term loans to small-scale industrialists at the interest rate of 14.5 per cent; the present maximum for individual loans is 1 million baht. Government is considering the Department's proposal to increase this ceiling to five million.
- The Industrial Service Division provides technical training, extension and advisory services in the light engineering fields.

These services are made available in provincial areas through three regional offices.

There are several shortcomings to this wide range of support activities. Priorities for implementation have not been set to correspond with resources of the government and private sector in respect of finance, personnel and production factors. Lack of co-ordination between the government planning offices has resulted in the absence of a systematic overall views; lack of co-ordination between planning and operating offices has led to disagreements on the implementation of policies. Planning officers, on the other hand, are not always aware of the obstacles inherent in the actual practice of development.

SOME RECENT INSTITUTIONAL APPROACHES TO THE PROMOTION OF SSI^{1/}

A. At the national level

1. Ancillarization (India)^{2/}

The concept of ancillary development or ancillarization of SSI received priority status in India in 1971 when the Bureau of Public Enterprises for the first time issued guidelines to all public enterprises in order to enhance the number and growth of ancillary units.^{3/} In order to qualify as ancillary unit, an enterprise has to meet a number of specific requirements:

- investment in plant and machinery must not exceed Rs. 2.5 million;
- it has to be engaged in the manufacture of parts, components, sub-assemblies, tooling or intermediaries, or the rendering of services;
- it has to supply or render 50 per cent of its production or of total services to other units for production of other articles;
- it must not be a subsidiary of or be owned or controlled, by another enterprise.

From this definition of ancillary units it emerges that in functional terms ancillarization follows the same lines as the promotion of subcontracting in general does. A distinction is made, however, between 'simple' subcontracting units and ancillaries insofar as the latter are committed to sell at least 50 per cent of their production to parent companies. The conceptual basis of ancillarization is to be seen primarily in the attempt not to establish purely commercial buyer-seller-relationships but, what is often called 'relationships of a higher order' in which the large nucleus firms are expected to accept longer-term responsibilities for a healthy and efficient development of their ancillaries (e.g. by means of technical, managerial or financial assistance).

As regards the orders of magnitude involved in ancillarization the following tentative figures may be given: ancillaries in 1981/82 accounted for

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- 1/ Prepared by the Regional and Country Studies Branch, UNIDO. The approaches selected here are not to be interpreted as alternatives to existing policies or agencies nor are they intended to offer complete overview.
 - 2/ The following thoughts on ancillarization draw on the paper on "Mechanisms for small-scale industry development: Ancillarization - Development of feeder industries" (UNIDO/IS.551) prepared by V. Dhall for the Expert Group Meeting at Seoul and on some of the papers that were presented at the International Seminar on Ancillary Development, New Delhi, 26-27 March, 1984, organized by the Industrial Development Bank of India.
 - 3/ Ancillarization is however not restricted to public sector enterprises but applies also to the private sector.

around 20 per cent of total purchases made by public sector enterprises from the small-scale sector. If, however, total purchases of both public and private sector enterprises from ancillaries are held against total production of the small-scale sector, the resulting share turns out to be as low as 2 per cent.

Not surprisingly, the scope for ancillary production varies from sector to sector of manufacturing activity with the following rank order and rough figures in the Indian case:

Manufacturing sector	Scope for ancillaries
1. Transportation industry	60 - 70%
2. Communication industry	50 - 75%
3. Prime movers and power-based industry	30 - 50%
4. Industrial machinery and machine tools	20 - 40%
5. Chemicals and pharmaceuticals	15 - 30%
6. Consumption and consumer durables	10 - 30%
7. Basic industry (metals and minerals)	5 - 10%
8. Wood, paper, fibres, glass and ceramics	2 - 10%

Experiences with the 'ancillary approach' to SSI promotion have been gained now for more than a decade in India and, notwithstanding the mushrooming growth of ancillary units and their production, a number of critical constraints have also come to light. Among these are to be mentioned:

- The present taxation policy is a detrimental factor to further growth and specialisation of ancillary production. Indirect taxes like sales tax and excise duty are based on turnover (instead of on value-added) with the result that it is cost-saving for large enterprises to grow vertically in order to avoid the cascading effects of taxes to be paid at each stage of production. This is only another example for the important role of the overall policy environment as determinant of SSI potential.
- Another problem area is to be seen in the clashing of social objectives and private profit-seeking interests. The large private nucleus firms are expected to take part in e.g. the development of infrastructural facilities for ancillary units which they in turn regard as a genuine part of government responsibilities.
- The most important single retarding factor has apparently been the lack of financial support for ancillaries. Firstly, the large parent companies are on the whole unwilling to have financial stakes in their ancillaries and secondly, the ancillaries are facing difficulties to get bank credits because of their low standing in most financial institutions. Moreover, as has often been reported, they suffer from delayed payments by parent companies which among others may indicate the cut-throat competition in getting orders at all.
- Many parent enterprises, including in particular a public sector enterprise engaged in telephone industry, have complained about the alleged inability of ancillaries to introduce and to operate sophisticated technology.

All in all, ancillaries are no exception to the rule that SSI face a difficult business environment and are in need of supporting policy measures. This is not to say that the approach as such has been wrong but that it needs further improvements, in order not to be just another label for what is already well-known as subcontracting. Above all, it should be kept in mind that ancillarization will always play only a supplementary role in overall SSI promotion (in India about 6 per cent of small-scale units may be classified as being ancillaries). It ties the growth of SSI to the prospects of large industrial enterprises thus offering to the former additional opportunities as well as additional risks.

2. Technology Services Delivery System (Philippines)^{1/}

In March 1978, the Philippine Government through the Commission on Small and Medium Industries (CSMI) of the Ministry of Industry started the implementation of the Technology Services Delivery System (TSDS). This project was implemented with the assistance of UNIDO,^{2/} the Japanese Government, ESCAP and UNDP.

The main objective of the TSDS project has been to establish the institutional framework for an efficient mechanism delivering technological information and services to SSI, particularly those located in rural areas. The project rightly started from the assumption that valuable technological knowledge is in principle available in every country but is either not geared to the specific needs of small-scale producers or is not being disseminated to them. In the first case the problem lies with the orientation of technological research, in the second case with the diffusion of its results.

This represents a crucial problem area which even in many industrialized countries has only recently been identified and subsequently addressed. In the Federal Republic of Germany e.g. so-called transfer institutions try to build a bridge between large universities' research capacities and the needs of industrial enterprises, particularly small and medium ones. Preferably this attempt should, however, be made in the earlier stages of industrialization in order to avoid from the beginning the emergence of too large a discrepancy between the work orientation of technological research institutions and the various industrial sectors' requirements.

Whereas most large industries have already the capital and managerial resources to secure continuous development, acquisition and application of new technologies, most SSI lack the resources required for this purpose. More often than not there is even a lack of information about the range of

^{1/} For detailed descriptions and analyses cf. UNIDO-documents ID/WG.350/1 and ID/WG.350/2, both of 23 September 1981, and ID/WG.350/24 of 26 March 1983. They present preparatory work and the results of the Expert Group Meeting for Exchange of Experiences on Technology Services Delivery System (TSDS), Manila, Philippines, 2-6 November 1981. See also document UNIDO/IS.424, Technological services delivery system (TSDS), prepared by the Development and Transfer of Technology Branch, Division of Industrial Studies, UNIDO.

^{2/} Under the project "Strengthening and Modernization of the Technological Performance of Medium and Small-Scale Industries in Selected Countries of the ESCAP Region" (TF/RAS/77/004).

technological options that have already been developed. One of the central tasks of the TSDS thus should be very basically the provision of required information. TSDS consists of three different sub-systems:

- the information sub-system: dissemination of existing written material available in research institutions on technological alternatives (incl. skill requirements, costs etc.) in various industrial sectors;
- the training sub-system: planning and preparation of lectures, seminars, practical demonstrations etc. in research and training institutions as well as in the countryside;
- the in-plant consultancy sub-system; this will be the crucial and most expensive link element between technological research institutions and SSI requiring at least short-term absence of research staff and thus the interruption of on-going research and development work.

It is important to note that the TSDS as envisaged by UNIDO does not necessarily require the creation of additional institutions but will focus on systematically establishing linkages and feedbacks between institutions already in existence. The TSDS in the Philippines is a case in point: It has been using the Bureau for Small and Medium Industries as a TSDS coordinating unit and the Small Business Advice Centres as an instrument for the establishment of regional linkages with SSI.

It may be advisable to concentrate the TSDS in its initial stages on some core industries (target sectors) with high shares of small-scale enterprises. In the Philippine case food processing, wood processing and metalworking industries have accordingly been selected and TSDS-related efforts have already had a significant impact on the SSI target enterprises, e.g. in terms of their organization into working industry associations.

There is no doubt that the TSDS approach which has been applied in the Philippines could also work effectively in other countries, if suitably adapted to their individual institutional environment. It may also be possible that TSDS lends itself to attempts at regional application. This may be theoretically appropriate in cases where countries with only limited technological research capabilities and capacities and appropriate institutional facilities can pool their resources in a closer regional co-operation. The services would be furnished by requests from the enterprises submitted to the network co-ordinating agency through the respective local focal point organizations. These focal points in each of the participating countries would function similarly to the local advisory services in the national context. In order to ascertain the viability of the concept, a project was initiated as the pilot operation in the Caribbean region. The Caribbean Technology Consultancy Service Network (CTCS) was created with the Caribbean Development Bank serving as the regional co-ordinator and with the participation of 11 technological research institutions. During the first 9 months of operation the CDB was able to handle some 40 technical assistance requests to industries.

B. At the international level

Although national efforts to expand and diversify the production of SSI should always be at the center of policy attention, there are also substantial

benefits to be reaped in terms of the transfer of technology from small and medium-sized enterprises in developed countries to respective counterparts in developing countries.^{1/} Small and medium-sized enterprises as agents of technology transfer have some distinct advantages to offer. They tend to be engaged in highly specialized, small-batch production processes, and may furthermore be preferable as a co-operation partner to large multinational companies, because in general they can be expected to make more use of intermediate technologies, to adapt more flexibly to local conditions and to be less demanding in terms of control or ownership of joint ventures.

1. Sister Industry Co-operation (Sweden/developing country)^{2/}

In 1976 the Swedish International Development Authority (SIDA) started a new approach to support and enhance the transfer of technology of Swedish small- and medium-scale enterprises to developing countries within the framework of the so-called sister industry programme. This programme is aimed at broadening the range of technological options available for small and medium-scale enterprises in developing countries. Thus the emphasis is not exclusively on the foundation of new enterprises or the engagement in equity joint ventures but on the transfer of production know-how on a contractual basis: A Swedish enterprise ("senior sister") makes a long-term contract with an enterprise in a developing country ("junior sister") comprising the transfer of hardware (machinery, tools, sometimes semi-products) as well as software, the latter being typically defined as including: "all the know-how and technical knowledge that is in the possession of the senior sister that is needed or is useful in the planning, manufacture or use of the products agreed upon. It has to include at least the layout of the production establishment, detailed description of production machinery, precise definitions of raw materials, parts and components and testing methods, planning of products, knowledge related to manufacture, testing methods for finished products and packing methods."

The main sister industry co-operation agreements have been concluded between Sweden and Tanzania. The institutional framework is very simple in nature and consists of SIDA plus an industrial consultant agency on the Swedish side and the Small Industries Development Organization (SIDO) on the Tanzanian side. The basic procedural mechanism may be described as follows:

- SIDO prepares a list of suitable products for manufacture in the Tanzanian industrial estate^{3/} and sends the list to the Swedish consultant firm. At the same time, SIDO looks for suitable Tanzanian entrepreneurs for the industrial enterprises to be established.

1/ Cf. UNCTAD, Organizational Forms of Transfer of Technology to Developing Countries by Small and Medium-Sized Enterprises: A Base Study of Equity Joint Ventures and Technology Agreements in Latin America (prepared by E. White), Doc. TD/B/C.6/77, Geneva 1982.

2/ Cf. the detailed analysis presented by Anitta Kuivalainen, in the research paper 'Possibilities of promoting industrialization of developing countries by means of resource transfers from small- and medium-scale industries', Helsinki School of Economics, Helsinki, 1982, p.101 ff., a summary of which is given here.

3/ In the Tanzanian case all enterprises were to be located in the Arusha Industrial Estate, but in general the approach of sister industry co-operation is not restricted to production in industrial estates.

- The Swedish consultant firm calls upon Swedish entrepreneurs who would be interested to transfer their technology or to participate in the establishment of an enterprise in their own branch in Tanzania. A list of suitable candidates will then be sent to SIDO.
- In the next stage, the Swedish consultant firm arranges a trip for SIDO's visitors to the Swedish enterprises proposed in order to assess the suitability of their production to the conditions in Tanzania. In turn, an opportunity is arranged for the Swedish enterprises to visit Tanzania so as to become acquainted with local conditions and co-operation partners.
- The Swedish manufacturer will then make detailed offers on the basis of which SIDO carries out the necessary feasibility studies. If they come to positive conclusions, concrete business negotiations will be held between SIDO and each Swedish enterprise and the co-operation contract will eventually be signed.
- The Tanzanian enterprises, after having signed their own contracts with SIDO, send some of their workers to Sweden for on-the-job training.
- Eventually the required hardware will be sent to Tanzania and technical staff of the Swedish enterprise will provide assistance in starting up production.

The sister industry programme has primarily been financed through Swedish development co-operation funds, provided on grant terms in the case of Tanzania. The Tanzanian firms, on the other hand, have had to pay for all hardware components of the technology transferred (10 per cent in cash, 90 per cent during the first five years) whereas they have received the software (training etc.) from the Swedish enterprise free of charge during an agreed initial period of production.

Notwithstanding the fact that most participants in sister industry co-operation have up to now been basically satisfied with the results obtained, a couple of problem areas have also emerged. Among these are to be mentioned:

- difficulties in connection with the transport of machinery to Tanzania, e.g. due to insufficient port facilities like a lack of large cranes;
- delays at the site during the stages of setting up machinery and starting production;
- administrative and managerial problems during the initial production stages.

The concentration of the sister industry programme on one specific industrial estate has proved to facilitate co-operation substantially (e.g. through exchange of experiences; common facility workshop etc.). Above all it must be emphasized that the existence of an efficient organization for promoting small-scale industry would be the basic precondition for any country's attempt to engage in this kind of approach for technology transfer.

2. Programme on Plant Level Cooperation (UNIDO)^{1/}

UNIDO recently set up a special support programme for small- and medium-scale enterprises developing countries with the purpose of upgrading their technological capabilities by means of a plant level co-operation with enterprises in industrialized countries. The mechanism employed in this effort is that of promoting co-operation partnerships between complimentary enterprises. As the focus is on the creation of longer-term industrial co-operation for mutual benefit, proposals which are purely for sale of equipment or other forms of embodied technology are not promoted within the project framework. Cooperation approaches that would, however, fit well into the framework are e.g.: joint ventures, sub-contracting, licensing with marketing or buy-back arrangements etc.

Once the technological requirements of each potential recipient enterprise have been articulated, the search begins for a partner (for each) which has the expertise in the particular field for supplying the required technological know-how. However, only those requirements which can not be met by national resources are considered. After the technology supplying partner has presented his specific proposal, a co-operation agreement can subsequently be negotiated with the assistance of UNIDO.

This approach obviously has much in common with the Swedish sister-industry approach described above. On the other hand, there is a stronger emphasis on strengthening the negotiating capacity of developing country enterprises as well as on the adaptation of the technologies transferred. A considerable part of the project budget has actually been spent on technology adaptation, be it for the purpose of scaling down certain production processes or of adapting them to the use of specific local raw materials. As this often requires highly cost-intensive modifications, they would in many cases not be undertaken on a purely commercial basis.

Plant level co-operation agreements have up to now been negotiated between enterprises in the Netherlands and in China, Mexico, Sudan and Thailand as well as between enterprises in Sweden and in Egypt, India, Kenya and Sri Lanka. A third round of projects is envisaged between Italian enterprises and counterparts in Cameroon, Columbia, Peru and Tunisia, concentrating on engineering industries.

^{1/} Cf. Programme on Plant Level Cooperation for the Transfer of Technology to Small and Medium-Scale Enterprises, UNIDO Internal Working Paper, Vienna, 24 February 1984.

REGIONAL CO-OPERATION WITH REGARD TO SSI DEVELOPMENT - THE EXAMPLES OF
APO AND TECHNOMET ASIA

(a) The Asian productivity organization (APO)^{1/}

The Asian Productivity Organization (APO) is an inter-governmental regional organization with headquarters in Tokyo and a present membership of 17 countries in the Asian and Pacific region. APO emphasizes small industry development, which more and more includes labour-intensive rural industries.

APO devotes the major part of its efforts to multi-country training projects in the industry, agriculture and service sectors with emphasis on management and technology. Most training projects have trainers and consultants as a target group with a view to strengthening the National Productivity Organizations (NPOs) and similar institutions of the member countries. While training projects form the mainstay of APO programmes, APO supports the NPOs in their role as advisers to individual governments. APO also serves to help member countries to delineate a productivity strategy in response to, and in anticipation of, changes that occur in the international economy. Programmes take account of the varying needs of member countries, with their different country characteristics and levels of development.

APO activities related to small industries development include:

(i) Training of consultants, trainers and administrators

Since its inception in 1961, APO has organized a variety of courses in the field of small industry development, especially on management. These courses were regularly re-patterned to meet the changing needs of SSI. Together with these training courses, refresher courses of shorter duration have also been mounted at the Research Institute for Management Science, Delft, the Netherlands, with the assistance of the Netherlands Government.

Besides these training programmes, books and pamphlets on SSI promotion have been published. These publications are the results of surveys, symposia, research activities, and actual development experience in Asia.

(ii) Development of specific techniques

In response to the trend away from manufacturing small batches of diverse products to mass production of a limited range of items and to subcontracting, APO organized the following projects to improve production techniques and product quality and reduce the waste of human resources and materials:

- Low Cost Automation (LCA)

This project was initiated in 1969. Briefly, low cost automation is a type of step-by-step automation whereby existing manual manufacturing processes are automated in stages by the addition of simple devices.

^{1/} Based on "The role of APO in the development of small industries in Asia", presented at expert group meeting at Seoul by the Asian Productivity Organization.

In order to train engineers and consultants in this field, low cost automation laboratories were established by member countries. On a regional scale, APO conducted the first low-cost automation training course in 1971. Courses introduced trainees both to the concepts and principles of low-cost automation and to technical matters.

- Group technology (GT)

For small-scale industries it is difficult to realize economies of scale. They tend to produce small quantities of a large variety of items; efficiency therefore tends to suffer. Experiences in machine-shop operations in Europe and USA have led to the introduction of group technology. This method of organizing production is based on the fact that similar operations occur in dissimilar production processes. By processing all jobs requiring similar machines and tooling in a sequence, the number of components produced per set-up is increased and total processing time is considerably reduced. The machines required are placed near to each other, thus reducing production scheduling and control problems as well.

(iii) Other activities

Seminars on small industry development have been conducted every year since 1983 and mostly involve personnel of development agencies and other institutions assisting small industries. In close collaboration with national and local governments, an integrated and comprehensive approach to SSI development in Korea and Japan has been evolved. Special emphasis is placed on the implementation of assistance schemes which are in accordance with the diversified socio-economic environment at the local level. Finally, the following services are provided by APO through the NPO's to supplement training courses and services:

- organization of visits to small industry development projects in various countries;
- project appraisal and industrial estate development courses;
- missions of technical experts to member countries;
- fellowships for study and research of selected SSI fields (e.g. export promotion, credit facilities, international subcontracting, management).

APO activities rely on mutual support of member countries rather than on a strong central organization; in that sense, there is much similarity with ESCAP's Technical Co-operation among Developing Countries (TCDC) project (see Annex VI).

(b) Technonet Asia: An experiment in regional co-operation^{1/}

Technonet Asia is a co-operative grouping of fourteen organizations in eleven Asian and Pacific countries, which aims at improving the quality and

^{1/} Abstracted from the papers "Regional co-operation for small-scale industries development and technology sharing: The Technonet Asia experience", and "Small-scale industries, a second look", both prepared by Dr. Leon V. Chico, Technonet Asia, and presented at the expert group meeting at Seoul.

efficiency of production in those countries' small and medium sized enterprises through the transfer of technological information, the provision of industrial extension services, technology and sharing. It was set up in 1973 as a project supported by the Canadian International Development Research Centre (IDRC). Organizations participating are:

- Bangladesh: Bangladesh Small and Cottage Industries Corporation (BSCICO).
- Fiji: Fiji National Training Council (FNTC)
- Hong Kong: The Hong Kong Productivity Centre (HKPC)
- Indonesia: Direktor Jenderal Industri Kecil/Departmen Perindustrian (DJIK/DP . Directorate-General for Small Industries/Ministry of Industry)
- Korea: Korea Institute for Economics and Technology (KIET)
Small and Medium Industry Promotion Corporation (SMIPC)
- Malaysia: Standards and Industrial Research Institute of Malaysia (SIRIM)
Majlis Amanah Ra'ayat (MARA)
(Council of Trust for Indigenous People)
- Nepal: Industrial Services Centre (ISC)
- Philippines Institute for Small-scale Industries, University of the Philippines (UP-ISSI)
- Singapore: Singapore Institute of Standards and Industrial Research (SISIR)
- Sri Lanka: Industrial Development Board (IDB)
- Thailand: Department of Industrial Promotion, Ministry of Industry (DIP)

Technonet Centre, located in Singapore, acts as the focal point of the network. The heads of the participating organizations, together with the Executive Director, evaluate and formulate policies at least once a year. In addition to IDRC, which continues to provide partial support, Technonet's programme and core budget is now also supported by the Canadian International Development Agency (CIDA), its participating organizations, and other donor agencies.

The organizations participating in the Technonet Asia network have two common aspects:

- they are all involved in rendering assistance to small and medium sized enterprises in their respective countries; and
- they are all involved in technical aspects of industrialization.

On a mutual basis, the participating organizations arranged to:

- make available to one another industrial technical information on products and processes in their country;
- receive personnel from other participating organizations for observation, training and discussion;
- make available its technical personnel for short-term assignments to the participating organizations;
- arrange visits of industrialists from Technonet Asia countries to local industries, organizations and institutions;

and individually to:

- develop effective co-ordination and liaison with local institutions for the development of small (and medium) scale business as well as with local sources of technical information and expertise.

In its technology transfer programme, Technonet Asia relies heavily on the "human element". Technology transfer is very labour-intensive. It can only be successfully implemented by a cadre of well-trained and creative technical information and industrial extension specialists who are the vital links between sources of technology and the entrepreneurs in the countryside. They "process" the technological needs or problems of small-scale industries, find solutions and adapt and clarify technologies for the entrepreneur. Such a programme requires an enormous investment in manpower and other resources. This perhaps partly explains why technology transfer programmes for small-scale industries are not given high priority in development schemes.

The Technonet concept is nothing new itself. Proposals have often been made to establish technology data banks, reforms of the international patent system, etc. Yet, the diffusion of technology through the industrialized countries and the international agencies is still far from fully effective. At the same time there is a growing realization that the greater part of man's technological know-how is already freely available - the main problem is that developing countries are ill-equipped to find, evaluate and apply it. Agencies like Technonet represent an attempt at technological "self help" by these countries.

The Technonet network of information exchange has proved workable and can be of benefit to other developing regions. Developing countries have much to share with each other; and the developed countries, through their technical assistance programmes, can strengthen this capability. In fact, Technonet draws upon the technological resources of some sixty co-operating organizations in developed countries for some of its activities. But much more has to be done in making technology accessible to small enterprises. The technological problems of small business in the developing countries are vast and varied. In countries represented in Technonet Asia alone, an estimated 500,000 small enterprises exist, and only a small portion of these establishments is reached. It is clear that everyone has a role to perform if the objectives are to be achieved: industry and professional associations, R and D institutes, the educational system, and other public and private institutions devoted to technology. Moreover, the co-operation and active involvement of government policy-makers and legislators is essential to make technology transfer a success.

UNIDO TECHNICAL CO-OPERATION PROGRAMME FOR SMALL- AND MEDIUM-SCALE INDUSTRIES DEVELOPMENT^{1/}

UNIDO's technical co-operation programme for promotion and development of small- and medium-scale industries (SMI) covers a wide range of activities which, - apart from direct assistance - involve one or a combination of the following:

- (a) general consultancy and promotional assistance;
- (b) establishing and strengthening institutions and servicing facilities for SSI;
- (c) specialized institutional support mechanisms and decentralization programmes;
- (a) General consultancy and promotional assistance involve, inter alia,
 - direct advisory services to Governments in establishing policies, programmes and support measures for SSI development;
 - identification of industrial requirements and resources available to the SSI; preparation of viable SSI projects; surveys and techno-economic studies;
 - technical counselling and industrial extension services;
 - promotional measures and inducements supported by legislation; developing networks of advisory services; facilitating access to financial sources; seminars, workshops to raise awareness and enhance the technical assistance flow to the SSI sector;
 - fostering intra-SSI co-operation; assisting in organizing collaborative efforts through associations and co-operatives; promoting linkages with other economic sectors.
- (b) institution-building projects deal with the transfer of expertise to and the improvement of the capacities of indigenous bodies, such as:
 - Small Industry Departments of Ministries or of Financing Institutions (e.g. Industrial Development Agencies, Development Banks);
 - Institutions for promoting small-scale industry;
 - Industrial Extension Service Systems;

^{1/} Prepared by the Institutional Infrastructure Branch, Division of Industrial Operations, UNIDO.

- Common Service Facilities^{1/};
- Industrial Estates and Industrial Free Zones.

Industrial extension services, transferring essential knowledge and skills in economic, technical and management fields, are usually provided by government-assisted agencies or special institutions which may combine the functions of an extension service with SSI promotion and industrial research and training. UNIDO technical co-operation in this field aims at establishing and/or developing the capacity of such indigenous institutions to provide the required technical services through well-trained industrial extension officers. Assistance to enhance indigenous capacities often includes establishing regional offices to initiate and/or improve technical, economic and management counselling to existing and new industrial units at dispersed locations.

(c) Specialized institutional support includes programmes such as entrepreneurship development, rural industrialization, industrial co-operatives, and industrial decentralization programmes.

Often special measures are needed to develop small industries on a decentralized pattern against the strong and self-perpetuating tendency for industrial growth in urban centres where prerequisites for development are concentrated. It is of particular importance to integrate such efforts with industrialization programmes in rural areas to reduce rural unemployment and economic distress and thus arrest urban migration. UNIDO assistance in this respect involves both the modernization of the small industries sector as well as the development of traditional and village industries. Emphasis is given to special facilities like training-cum-production centres for managerial and technical personnel; pilot and demonstration plants where experience can be gained in the latest appropriate technologies and various industrial operations; extension centres for rural industries; and mobile facilities for on-the-spot technical assistance.

The role of indigenously established and locally based groups like co-operatives cannot be stressed strongly enough. In this field UNIDO assistance, involving a combination of institution-building and training, aims at developing the capacity of an indigenous agency/institution to foster the development of industrial co-operatives on a continuous and systematic basis. UNIDO also provides direct support (in form of industrial extension service) to industrial co-operatives.

Increased attention is also focused on human resource development. Entrepreneurship development for industry programmes assisting identified potential entrepreneurs with a package of incentives and institutional support systems receives special attention.

Within the limited scope of this document it is not possible to make a comprehensive presentation of all types of support to small- and medium-scale industries. The two examples below give some information on project objectives, approach and output:

^{1/} These include testing and quality control laboratories, toolrooms for manufacture of tools and equipment, workshops where complicated operations using specialized machinery are performed and services for the maintenance of equipment.

(i) Integrated programme for the development of small- and medium-scale industries

Comprehensive programmes of support to small- and medium-scale industries are expected to result in the following project outputs:

- a survey report of SSI areas of activities including an assessment of the performance of on-going programmes and of key agencies involved;
- identification of resource requirements for support components (field extension services, infrastructural support, market access and marketing services, subcontracting);
- analysis of economically viable projects covering opportunity studies, market surveys, pre-investment studies and identification of financial needs and of sources of financing;
- identification of target groups and compilation of potential entrepreneurs;
- a plan of action to implement an integrated programme for the development and operation of small and medium enterprises;
- organized and systematic assistance on the operational level in the form of extension services to serve small- and medium-scale industries, including consultancy services to potential enterprises.

(ii) Industrial estates

The setting up of industrial estates is usually combined with special incentives and supportive measures (e.g. provision of industrial premises, common production facilities, guaranteed supply of raw materials and services, sub-contracting arrangements, etc.) to develop and relocate industries of various sizes. UNIDO support is often requested to assist governments to achieve one or more of the following objectives:

- formulation of an integrated industrial estate development programme (planning, financing and construction) in accordance with the objectives of the National Development Plan;
- strengthening and development of the managerial and operational capabilities of the industrial estate agencies;
- strengthening the capacity of the institutions providing specialized services to establish new industries and develop existing ones, e.g. through growth-centres, workshop clusters and export processing zones in development areas.

The nature of assistance provided covers a wide range of activities required to complement and supplement the central activity of the programme, i.e. advice and assistance in establishment, effective management and operation of existing and future industrial estates:

- advice on key elements of the programme: strategy and policy guidelines, physical planning and layout, feasibility and promotional

activities (marketing estate land and buildings and attracting local and foreign investors), admission policies, rental or sale policies, and the disposal of industrial effluents;

- advice on financial management to improve systems relative to lending activities and loan portfolios;
- providing industrial extension service on a regular basis to entrepreneurs and assisting potential entrepreneurs in implementing their projects;
- providing direct support services to needy enterprises in the estates.

CO-OPERATION AMONG SMALL ENTERPRISES - AN EXAMPLE FROM SWEDEN^{1/}

(a) Introduction

The present-day business environment in industrialized countries is very demanding in various ways. Technological change is rapid, production processes are computerized and are more and more internalized within companies, government rules and regulations remain complex in spite of "deregulation" tendencies, etc. Handling these problems is especially difficult for small enterprises. However, many of the small enterprises face essentially the same problems, and where individual entrepreneurs may not be able to cope with these external challenges on top of the burden of everyday management, they may be able to do so through co-operation. Below, the experience of an industrial association in southern Sweden, the Fosieby Group of Entrepreneurs (Fosieby Företagsgrupp) is presented. First, the environment in which Swedish industry operates is briefly described. Section (b) gives some general information on industrial co-operation between small companies in Sweden, and section (c) analyzes the Fosieby Group: its origins, organization, co-operation areas, projects and linkages with other industries. In a concluding section, some essentials for successful co-operation are reviewed.

Sweden has been among the countries with the highest per capita gross national product for a considerable time now. The same holds true for tax levels. One effect of this is that the Government has been able to finance a very well-developed physical infrastructure (including special industrial areas) - costly investments, given the low population densities in most areas.

Over the past 20 years, the relative importance of industry for the Swedish economy has decreased. The share of manufacturing in GDP was at 22 per cent in 1983, down from one third of GDP in the late 1950's. Some 34 per cent of the population are employed in industry nowadays, and it is expected that this figure will decrease substantially in the coming years. Structural change has strongly affected individual companies, industry branches and regions. The late 1970's and early 1980's have been characterized by low gross margins and investment.

Both the dominance of large firms and the decline of industry have spurred the Government to initiate support campaigns for small enterprise (defined as having less than 200 employees; the manufacturing sector comprises some 40,000 of these companies), using slogans like "Big business is done by smaller companies". The results of this programme are still very much debated, but it is clear that they vary strongly between the local offices involved in the programme, and that small entrepreneurs hardly rely on advice provided by officials; local offices are mainly contacted to get grants and loans approved.

(b) Industrial co-operation between small companies in Sweden

The present environment in which small business in Sweden operates is thus characterized by:

^{1/} Based on the paper "Study of a small-scale industry (SSI) co-operation scheme in a developed country" by R.B. Aronsson, UNIDO consultant, presented at the expert group meeting at Seoul.

- a high rate of change;
- low profitability and frequent bankruptcies;
- large company dominance;
- strong Government influence;
- a not too successful official assistance programme;
- a well-developed infrastructure, including special industrial areas;
- a traditionally high degree of organization among the parties involved in the the economy.

In this environment, co-operation between small companies has grown. Already several decades ago firms located in the same geographical area began to co-operate. Today, a great number of such groups exist, most of them organized since the late 1970's. Almost all of them have their members within the same urban area; 27 per cent of them even draw all their members from the same special industrial area. The distribution pattern over the country roughly coincides with the distribution of the population and of major manufacturing areas.

Normally, a company association has between 11 and 50 members; groups with more than 100 members are rare. Personal contacts, which are essential to the success of these groups, become less frequent as group size grows; on the other hand, very small associations have insufficient bargaining power. Co-operation between enterprises is usually limited to one or a few areas. Typical areas of co-operation are information exchange, export marketing, negotiations with Government agencies, advertising, and joint purchase of hardware and software.

(c) The Fösieby Group of Entrepreneurs (Fösieby Företagsgrupp)

The Fösieby Group of Entrepreneurs (FGE) was established in 1972. It was the first such group established on a modern special industrial area, and it has served as an example for many other groups which were established in Sweden in later years. The industrial area in question is located on the outskirts of Malmö, one of the largest towns in Sweden, with a population of about 250,000. In the Malmö area alone, the example set by FGE has been followed by five other groups.

On the Fösieby industrial area, 190 enterprises are located. 180 of these, employing some 6,000 workers, have joined FGE; the size of the companies ranges from 2 to 1,200 persons. Membership fee is US \$100 per annum. Half of the funds thus acquired are used to hire a part-time consultant manning the "executive office" (see below), the remainder is used on co-operative projects, mailing, etc. Members of the FGE board do not receive a fee and most of the secretarial work for the Group is carried out within the companies themselves. FGE is not supported by Government funds. Members meet annually to elect new members for the 8-man board. Every year, half of the board members are replaced. All board members are key figures within their companies. The board meets approximately 10 times a year for decision-making and in-depth discussions on activities of the Group. For each

projected activity a working group of two to three persons is established, always including one board member. Institutionalization of the board is kept to a minimum: all secretarial work is done by the incumbent president's secretary or by outside service companies.

The "executive office" is only staffed for a short period daily, but the person hired for the purpose always has very good contacts within the member companies and with officials and other enterprises in the area. He gives advice on available premises, Government regulations, suppliers, financing of new projects, etc. When unable to supply information, he will refer to one of the other company presidents - among the 180 there are many with specialized knowledge. The office executive also intervenes with local authorities to help solve problems of member firms. The fact that the Group represents a large and growing number of people adds considerably to its influence.

The FGE co-operates in the following areas:

Purchasing

Contracts settled between the association and a supplier are "frame contracts", which means that the contracts set conditions and prices, but do not oblige any one company to buy. Members can use the contracts when it suits them. Through these contracts, even the smallest firms benefit from reduced prices and conditions normally available for large companies only. When necessary, settling claims against a supplier is much easier as well, as the claimant will be the whole group. Examples of advantageous contracts concluded in this way are the leasing of 1,500 cars and the centralized supply of heating oil to the companies in the area. For the supplying companies, advantages are to be found in the reduction of delivery costs, etc.

Training

Training employees and improving and expanding their skills are also undertaken by the Group. Courses last from 1500 to 1800 hours, which means that the time cost is shared equally by the firm and by the employees. The interest in these courses has decreased as a consequence of a general tendency to provide free education during work hours; also, governmental and private organizations now offer a very wide range of courses, seminars, etc.

Computerization

The introduction of computers poses many problems to small entrepreneurs. There is a great and rapidly changing range of hardware and software, the qualities of which are hard to judge for outsiders, and the same holds true for the information provided by suppliers and consultancy firms. To solve this problem, FGE has hired a computer specialist. The Group itself contributes one third of the cost, the remainder being shared by the local government and university. Those companies that wish to employ the expert's services pay a fee of US \$10 per hour. The consultant's experience is wide enough to cover all steps and aspects of the computerization of a company. As a first step, 10 companies are in the process of being computerized. At a later stage in the project, which will last two years, another 10 will follow. Results so far have been encouraging.

Local services

FGE has been very active in attracting new services to the area, especially shops. On the one hand, the people working at the industrial area constitute a sizeable market, on the other it is felt that the area benefits from being more than just a place to work. The expansion and variety of activities in turn induces the local government to raise the standard of its services in the area, and these factors combined make it easier to attract (highly qualified) employees.

A special feature is the health care centre. Swedish firms are required by law to have a preventive health care programme. By joining forces, the Group has been able to establish a health centre employing medical doctors, nurses and an industrial safety engineer at a cost of some US \$50 per year per worker, far below the cost of similar centres in the country.

Linkages

An FGE working group is regularly in touch with a large local shipyard. Its demand for products which can be supplied by members is assessed and then single firms, or co-operating groups of firms within FGE, offer their services, referring to the contacts made by the Group. Contracts are concluded directly with the shipyard, not through the intermediary of FGE.

(d) Concluding remarks

An evaluation of the activities of the Group based on an extensive enquiry among approximately one half of the membership showed that the most successful areas of co-operation were considered to be the collective hardware purchasing agreements and the health care centre project. Depending on the size of the companies, there is a different appreciation of activities - collective purchasing, e.g., proved especially valuable for the smaller companies. No negative results of co-operation were found, but members felt that contacts within FGE could be improved.

Although circumstances differ strongly from region to region in Sweden, the FGE model has been successfully adopted elsewhere. For those involved in industrial co-operation it may be useful to summarize the major factors which contributed to the success of FGE:

- Proximity of firms and regular contacts among members;
- Associative activities tailored to the actual environment and needs of the firms involved;
- Association activities guided by the most knowledgeable entrepreneurs, having good contacts with other enterprises and Government officials;
- An executive office located in the area;
- A regular flow of information from the association to its members, and an exchange of information and experience between business associations;
- Emphasis on the quality of contracts with outside firms, not on the number of such contracts;
- Minimal Government involvement in business co-operation.